

Louvain School of Management

The digital maturity of boards of directors of international companies

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Introduction

Passionate about digital and convinced that digitalisation will thoroughly transform society and disrupt most existing companies, I made it my objective to help companies understand how they can put the odds on their side by seizing the digitalisation wave in the right way.

As the board of directors is the most important long-term-focused decision-making body of a company, it must be able to make the right decisions with regards to the digital transformation of its company. But what enables a board of directors to make the right decisions in an era of digital transformation? When reading about boards of directors and digital transformation, I identified a significant gap in the literature that needs to be filled. Indeed, there is no means for boards of directors to assess themselves, to evaluate if they are able to contribute to the successful digital transformation of their companies and to find ways to improve. Besides, there is a growing demand in this area as many boards of directors begin to understand that they need to act on digital but only few boards of directors are able to act on digital. This thesis will thereby answer the question *“How to measure the digital maturity of boards of directors of international companies?”*.

The answer to that question will be formulated as a board of directors digital maturity model that will be elaborated in two phases.

The first phase is a secondary data collection phase during which literature on the board of directors, on digital and on maturity models will be reviewed. This phase will allow building a first version of the model by identifying preliminary dimensions and subdimensions, by structuring the maturity levels and by defining what the enablers that would allow assessing the maturity level for each subdimension could be.

The second phase is a primary, qualitative data collection and analysis phase. The goal of this phase is to confront the first version of the model with experts in the field to challenge the proposed dimensions, subdimensions and maturity levels, to obtain further insights on the outlined enablers and to identify elements that would not have been included in the proposed model but should be considered by the final model. Besides, this phase will

allow verifying the overall consistency of the model and validating its general structure. The objective is to create a panel of top-level executives and non-executives that are working in international companies in various industries and that have different relations with digital transformation to obtain a rich diversity of perspectives on the question.

Consistently with the two-phases approach, this thesis is structured in the four following parts.

The first part, a literature review, thoroughly analyses literature related to the research question. It focuses first on what boards of directors are, what their role is, how they can be effective and what the role of independent directors is in a board of directors. Then, the next chapter explains the concept of digital, briefly reviews the history of digitalisation and provides insights about future digitalisation. Furthermore, in the third chapter a thorough definition of digital transformation is provided, its history is summarised, its importance for companies is stressed and the various approaches of companies are presented. The next chapter further explains the role of the board of directors in digital transformation, illustrates what boards of directors are currently doing to cope with this responsibility and investigates what, according to existing literature, enables boards of directors to conduct their role in a digital transformation. Finally, the concept of maturity model is explained and different types of maturity models are presented.

The second part of the thesis is the proposition of a board of directors digital maturity model and consists of two chapters. The first chapter of this part explicates the reasons for the board of directors digital maturity model, sets the scope of the model and investigates if different companies need different levels of digitally mature boards. Then, the second chapter outlines the model, its maturity levels, dimensions, subdimensions and enablers.

Furthermore, the third part of this paper is the field research and contains two chapters. In the first chapter of this part, the experts, the interviews and the analysis methodology are described. Then, in a second chapter the results of the confrontation of the model with the experts are detailed and illustrated.

Finally, the last part of the thesis exposes the final digital maturity model by explaining the changes made to the originally proposed model and by illustrating how the model should be used in practice.

Overall, the main results and practical implications are synthesised and the limitations and perspectives for further research are briefly described in the conclusion.

Part I: Literature review

Chapter 1: The board of directors

As it is essential to have a deep understanding of what a board of directors is, which role it can play, how it can be effective and why it has independent directors to develop a model measuring its digital maturity, this chapter will consecutively address these topics.

1. What is a board of directors?

The board of directors being one of the key elements of corporate governance, it seems appropriate to first provide a contextualising definition of what corporate governance is. An overview of the literature makes explicit that two general perspectives exist on corporate governance. The first perspective, the narrow perspective or exclusive approach, emphasises the importance of shareholders and stresses the responsibilities of companies towards their shareholders and their relationships with these. The focus lies thereby on the financial relationship with the shareholders. Secondly, the broad perspective or inclusive approach encompasses other stakeholders such as employees, customers and suppliers (Wilkinson & Plant, 2012). Within the scope of this thesis only the broad perspective will be considered. This perspective is further illustrated by the following definition: “Corporate governance is a set of rules, processes and practices by which a company is directed and controlled. It involves balancing interests of many stakeholders, including shareholders, boards of directors, management, employees, customers, suppliers, lenders and creditors, communities and government.” (Lamm & White, 2015).

Furthermore, many different visions and definitions of what a board of directors is can be found in the literature. Nevertheless, it is common that scholars describe the board of directors as a bridge between the owners of a business and the management to whom day-to-day tasks are delegated (Mintzberg, 1983; Monks & Minow, 1995). Forbes and Milliken further characterised boards of directors as “large, elite and episodic decision-making groups that face complex tasks pertaining to strategic-issue processing” in 1999. They also emphasised the fact that boards of directors mainly produce cognitive outputs as they are rarely involved in implementation (Forbes & Milliken, 1999). Moreover, Judge,

Langton and Robbins (2007) argue that the board of directors can be viewed as a group that works to achieve the goals of the organisation. Overall, several characteristics are common to most boards of directors. Indeed, a board of directors is a group of people that meets several times a year and whose members have legal responsibilities.

2. What is the role of the board of directors?

The diversity of perceptions of what the role of boards of directors is seems even stronger than the variety of views on what boards of directors are. Key authors writing on this subject are Salancik and Pfeffer, Zahra and Pearce and Johnson et al., who each identified three roles for boards of directors, Hung, who identified six roles, and Mintzberg, who identified seven roles (Nicholson & Kiel, 2004; Nicholson & Newton, 2010). Lynall, Golden and Hillman provide an explanation for such a diversity of perspectives by synthesising the views of two relevant theories (2003). Firstly, they argue that from an agency theory perspective the role of the board is to monitor the management on behalf of shareholders. Secondly, they suggest that from a resource dependence perspective the board of directors is a resource that provides advice, legitimacy, channels of communication with stakeholders and assistance in obtaining external resources (Lynall, Golden & Hillman, 2003).

a. The four roles

Nicholson and Kiel provide an exhaustive definition by defining four roles of boards of directors: controlling and monitoring management, advising the CEO, providing access to resources (through both relational capital and human capital: expertise, experience and knowledge (Yayla and Hu, 2014)) and strategizing (2004). The four roles identified by Nicholson and Kiel can be further divided into the following key functions: strategy formulation, advice, access to information and physical resources, monitoring, compliance, risk management, CEO evaluation and delegation (Nicholson and Kiel, 2004).

b. Control and advisory roles in conflict

When looking at the different roles of the board there is a conflict between its function of control, which includes both monitoring and controlling management's performance and disclosure of information to stakeholders, and its function of advisory, which refers to

Nicholson's advising and strategizing roles (Biondi & Rebérioux, 2012; Forbes & Milliken, 1999). Indeed, controlling management demands independence while advising management requires collaboration, cooperation and alignment on development perspectives. Consequently, the composition of the board should minimise the potential costs induced by the risks of collusion as well as the potential costs induced by a lack of understanding of both market and firm-specific information (Biondi & Rebérioux, 2012).

c. A strategizing role?

Besides this conflict between the controlling and advisory role, there is a strong debate on the strategizing role of the board.

Indeed, on the one hand, Naidoo argues that it is part of the board's role to review and approve the strategy to make sure that it is aligned with the mission and value drivers of the firm, that it creates sustainable value for its shareholders while taking other stakeholders into account and that the management has analysed related risks (2011). Massihabadee, Shorvarzi and Mehrazeen further posit that having a higher hierarchic position than the executive board enables the board of directors to have a strategic role and to impact strategic decision-making (2018). Moreover, Stiles and Taylor found that even though the board cannot be expected to be involved directly in strategy formulation, it plays a key role in defining the parameters of the strategic discussion (2001). Indeed, the board determines and maintains the corporate definition, establishes boundaries and quality standards for the propositions that are presented before it and selects both board members and top management (Stiles & Taylor, 2001).

On the other hand, Brown argues that the boards of large public companies do not perform a significant advisory role because of the presence of many independent directors (2015). He further defends that even when strategic committees exist, boards do not play a significant advisory role because these strategic committees often do not meet on a regular basis, because once long-term goals have been defined they are not frequently reviewed, because boards are simply commenting and validating the proposed strategy and not devising it and, finally, because boards do not always have the structure required to play a significant role (Brown, 2015).

d. Three-dimensional perspective

Besides the variety of opinions on the role of the board, there is a plurality of views on the added value of the board of directors. In fact, two dimensions are most commonly considered. The first dimension focuses on shareholder wealth maximisation and posits that more regulation is needed to tackle principal-agent issues between managers, shareholders and other stakeholders. This view tends to focus the board on short-term goals and to limit its functions to monitoring, managing risks and oversight. The second dimension emphasises the creation of long-term value and defends that the board should be isolated from short-term goals. Additionally, McCahery and Vermeulen propose a third dimension on top of these two first dimensions: they defend that the board of directors plays a key role in enabling future growth and value creation by bringing along industry expertise and knowledge (2014).

e. Types of boards of directors

Overall, there seems to be agreement on the fact that the role and form the board takes depend on several factors such as the size of the company, the type of company, its life-cycle stage, its sector, its culture and the country of origin of the company (McCahery & Vermeulen, 2014; Moldof, 2016). In fact, Nadler categorised five types of boards of directors depending on their involvement in their organisation (2004). First, passive boards have limited accountability and their core responsibility is to validate the decisions of the management. Secondly, certifying boards assure that the firm is well managed and that the management meets the board's requirements. Thirdly, the engaged board provides insight, counsel and support to the CEO on important decisions and oversees company performance. Fourthly, the intervening board is strongly involved in decision-making and holds frequent meetings. Finally, the operating board makes the decisions and the management holds a strictly executive role (Nadler, 2004).

3. Which factors influence the effectiveness of the board of directors?

Unlike the two previous sections, there seems to be a tendency in the literature to recognise three general factors as essential to board effectiveness: the capital of competencies, the board behaviour and the board structure. In fact, the effectiveness of a board of directors depends on the execution of the previously mentioned board roles,

which is enabled by these three factors (Nicholson & Kiel, 2004). Indeed, boards of directors should have the right membership, enabled by appropriate processes and backed by a proper board structure to be able to successfully fulfil their obligations (Leblanc & Gillies, 2003). This balance is essential for board members to have effective interaction with each other as well as with management and to thereby make adequate decisions (Leblanc & Gillies, 2003). Besides, board effectiveness strongly depends on the presence of effective directors and director effectiveness is enabled by three factors: competencies, independence and behaviour. In fact, there is a relationship between the factors influencing board effectiveness and the factors enabling director effectiveness (Leblanc & Gillies, 2003). This section will dig deeper into the three factors enabling board effectiveness and into their relationships.

a. Capital of competencies

The first dimension is the capital of competencies. The composition of the board provides, through a unique combination of knowledge, skills and experience, the human capital of the board, which in turn influences the board's actions, decisions and results (Abdullah, Abidin & Bakar, 2016; Annuar, 2012; Haniffa & Hudaib, 2006; Nicholson & Kiel, 2004).

To understand the desired set of board competencies, an interesting tool is a matrix with the skills, expertise and personal attributes needed at board level to allow the company to achieve its objectives. The vertical axis of the matrix lists down the needed competencies while the horizontal axis records the current directors. The objective of this tool is thereby to understand where enhancement is needed (Steinberg, 2010).

Besides the current and desired competencies, this dimension also includes the recruitment process of directors and the process to remove board members when it is necessary (Leblanc, 2013; Leblanc & Gillies, 2003; Sharman, 2014).

Finally, it is crucial to have the required competencies spread in a harmonious way across all the directors, which entails that individual director competencies are essential but not enough (Leblanc & Gillies, 2003). Indeed, it is both the presence and the use of director competencies that enable board effectiveness (Forbes & Milliken, 1999).

b. Board behaviour

The second dimension is the board behaviour and its key determiner is the social capital. The relationships between board members, between the board and the management and between the board and external organisations determine the social capital of the board. Among these three elements of social capital, the first two allow the board to moderate the impact of its human capital on board effectiveness while the third element directly fosters effectiveness (Nicholson & Kiel, 2004).

Moreover, the first element of social capital, the inter-relationship among and between board members, which is determined by the behavioural characteristics of individual members, is one of the key factors of board processes. And board processes entail how decisions are made by the board and how directors themselves behave (Leblanc & Gillies, 2003).

Lastly, when looking further at the inter-relationship among and between board members, it seems that board cohesiveness, which is itself moderated by the level of cognitive conflict, has a curvilinear relationship with board effectiveness. Indeed, very low levels of cohesiveness hinder trust between board members while very high levels of cohesiveness can reduce the quality of a board's decision making (Forbes & Milliken, 1999). Thereby, board members should cooperate in providing advice, counsel and direction to the CEO but that does not mean uniform thinking. In fact, diversity in backgrounds, perspectives and ideas is essential (Leblanc, 2013; Steinberg, 2010).

c. Board structure

The last dimension is the board structure. The board's routines, policies and procedures all contribute to its structural capital, which enables the use of both its human and social capital and moderates the relationship between the human capital of the board and its effectiveness (Nicholson & Kiel, 2004).

In general, board committees, a board agenda (English, 2010; Leblanc & Gillies, 2003; Sharman, 2014), strong effort norms (Forbes & Milliken, 1999), well-defined board rules

and responsibilities and a clear board role (Inglish, 2010) are among the underlying elements of the board structure.

Finally, another element of the structure of the board is the independence of its directors (Leblanc & Gillies, 2003). Indeed, the independence of board members is a signal of strong corporate governance and can be maintained by appointing outside directors (Demirbas & Yukhanaev, 2011).

Overall, it seems clear that not only these three dimensions but also their relationships are essential to the effectiveness of the board of directors. It is thereby difficult for boards to be effective if they are weak in any of these three dimensions. Besides this three-dimensional framework, some best practices stand out in the literature. Indeed, boards should count between seven and eleven members (Leblanc, 2013), they should meet at least six times a year (Leblanc, 2013; Sharman, 2014), their members should serve for a maximum of 9 years or until the age of 72 (Leblanc, 2013), boards should regularly evaluate themselves (Inglish, 2010; Sharman, 2014), there should be no hierarchy as they should be self-governing and they should create clear and detailed charters for their committees (Sharman, 2014). At last, a board should have a multi-year calendar, its meeting time should be focused on discussion (Sharman, 2014) and it should have a specific focus on value creation (Leblanc, 2013).

4. Independent directors

a. Role

The main role of an independent director is, as for any director, to contribute to the achievement of the previously explained roles of the board of directors. Nevertheless, independent directors have been found to have two specific roles and thereby contributions to the board of directors.

At first, independent directors have a monitoring role. Indeed, the agency theory argues that independent directors allow alleviating agency problems and moderating managerial self-interests. The agency theory further posits that independent directors protect the

interests of shareholders and orient resources towards better results thanks to their financial independence (Abdullah et al., 2016; Fama & Jensen, 1983).

The second role of independent directors, from a resource dependence perspective, is to advise management through their experience and skills and to provide access to resources through their external networks (Abdullah et al., 2016; Pfeffer & Salancik, 1978).

b. Importance

Independent directors are essential in any board of directors as they enhance board performance for the following reasons (Petra, 2005). First, independent directors are challenging management by asking tough questions and speaking up and are thereby driving up performance (Byrd & Hickman, 1992; McCabe & Nowak, 2008). Secondly, independent directors have been found to be more neutral assessors of the strategies proposed by management (Byrd & Hickman, 1992). Moreover, independent directors safeguard the balance of power between board and management (McCabe & Nowak, 2008). Also, by controlling and monitoring management they ensure the enforcement of corporate governance (Petra, 2005). Finally, independent directors guarantee that the interests of minor investors, that could easily be put aside by the management, are considered (Annuar & Abdul Rashid, 2015).

c. Profiles

As mentioned earlier, independent directors should conduct both a monitoring role and an advisory role. To effectively conduct these roles, they should have specific profiles that bring an added value to their boards of directors. Firstly, independent directors should have diverse backgrounds and should thereby be engineers, accountants, consultants, law experts, etc. (Abdullah, 2013; Petra, 2005). Secondly, independent directors should have relevant experience and knowledge (McCabe & Nowak, 2008; Ponnu, 2008), technical competencies, strong relational skills and a positive reputation (McCabe & Nowak, 2008). Additionally, independent directors add more value if they are sitting on several boards as they use the diverse ways of working they are confronted with to improve their boards' processes and procedures (Abdullah et al., 2016). Finally, independent directors should

have experience with strategizing as it allows them to contribute to the development and evaluation of strategies (Annuar, 2014; Kamardin & Haron, 2011).

Chapter 2: Digital

Digital is not a new concept and it has often been considered as a trendy name encompassing many different innovative technologies. It is thereby crucial for this paper to establish what digital and its direct consequence, digitalisation, mean today. This chapter will therefore define several concepts related to digital, briefly review the history of digitalisation and provide perspectives on future digitalisation.

1. Concepts

First, digital can be defined as an adjective that “describes electronic technology that generates, stores and processes data in terms of two states: positive and non-positive. Positive is expressed or represented by number 1 and non-positive by number 0. Thus, data transmitted or stored with digital technology is expressed as a string of 0's and 1's. Each of these state digits is referred to as a bit (and a string of bits that a computer can address individually as a group is a byte).” (Yayla & Hu, 2005).

Moreover, even though the definition of digital is unique, there is no universal definition of what digitalisation means that can be used as a reference point by researchers or business practitioners. The reason for this is that it is cross-disciplinary, cross-cultural, inter- and intra-geographical, and virtual (Shahyan, 2016). Indeed, there are many definitions of digitalisation. Some definitions are underestimating it by, for instance, defining it as “the conversion of analogue information into digital digits” (Collin et al., 2015, p. 29) while others overestimate it and see it as “mystical invisible hand of innovation and social development” (Kotarba, 2018). Digitalisation is also frequently mistaken for terms such as automation, mechanisation, robotisation and industrialisation (Khan, 2016).

Furthermore, the following four definitions are proposed to provide a complete view of what digitalisation is. Firstly, according to Tilson et al., digitalisation is a “sociotechnical process of applying digitising techniques to broader social and institutional contexts that render digital technologies infrastructural” (2010, p. 749). Secondly, Autio, Nambisan,

Thomas & Wright posit that “digitalisation creates potent digital affordances that likely have a transformative effect upon the organisation of economic activity by supporting radical business model innovation” (2018, p. 76). Thirdly, Kotarba describes it as “the formation of new entities and relationships driven by the application of information technology” (2018). Fourthly, Vogelsang describes digitalisation as the 5th Kondratiev wave that is, besides changing our production processes and possibilities, transforming our way of being (2010). He further argues that “after the steam, steel, electricity, and petrochemical revolutions, network-based digitalisation is the driving force today on the stage of business and private life” (Vogelsang, 2010, p. 3).

Finally, the following concepts are defined to provide clarity to the reader. Firstly, digitisation is described as “The encoding of analogue information into digital format. Digitisation makes physical products (e.g. artefacts) programmable, addressable, sensible, communicable, memorable, traceable and associable” (Yoo et al., 2010, p. 725). Secondly, digital innovation is defined as the “carrying out of new combinations of digital and physical components (in a layered modular architecture) to produce novel products” (Yoo et al., 2010, p. 725). Thirdly, Bharadwaj et al. define digital technologies as “combinations of information, computing, communication, and connectivity technologies” (2013, p. 471).

2. History of digitalisation

As mentioned earlier, the concept of digital is not new and its consequence, digitalisation, has been changing the world for many decades.

Digitalisation started when Gottfried Wilhelm Leibniz created and outlined the concept of digital in 1703 in his publication “Explication de l’Arithmétique Binaire”. He described the base-2 numeral system with two values, 0 or 1, that would change the world (Leibniz, 1703). Then, in 1937 George Stibitz discovered the automatic computing relays and three years later he built the first electromechanical computer. He is thereby recognised as one of the founding fathers of the digital computer. Following this invention, for a few decades, the first wave of digitalisation, the rise of digital, took place (Caudron & Van Peteghem, 2014). This emancipation of digital was led by the development of personal computers, such as the Simon in 1950, Apple II in 1977 and IBM PC in 1981, and facilitated the

creation and production of digital products and services (Vogelsang, 2010). The second wave of acceleration, the Internet, took place when the 'World Wide Web' was introduced. This wave made physical boundaries and time zones vanish and thereby changed the dimension, scope, speed, scale and effects of digitalisation (Caudron & Van Peteghem, 2014; Shahyan, 2016; Vogelsang, 2010). The third wave, social media, changed the way online content is created and distributed and how Internet users interact (Caudron & Van Peteghem, 2014). The fourth wave of acceleration, mobile, reduced the interval between impulse and response from hours to minutes or even seconds (Caudron & Van Peteghem, 2014).

Overall, the combination of these four waves of accelerated digitalisation has transformed the ways of thinking about the world. Indeed, societies have become landscapes mediated by diverse social media platforms and providing various digital services built on technologies that enable sensing, capturing and analysing data (Caudron & Van Peteghem, 2014; Pappas, Mikalef, Giannakos, Krogstie & Lekakos, 2018). Today, digitalisation is being portrayed as a "global megatrend that is fundamentally changing existing value chains across industries and public sectors" (Collin et al., 2015, p. 29) and is "the catalyst, enabler and engine of societal development throughout the previous decennia" (Bengtsson, 2014, p. 50; Khan, 2016).

3. Future digitalisation

The former section showed that digitalisation has been transforming society for many decades and that this process has been accelerating through successive waves. This section will investigate what future digitalisation could look like.

There is no certainty about what digitalisation will mean in the future and how it will impact society, but the following trends stand out. Firstly, in terms of digital technologies, increasing usage of Artificial Intelligence and Virtual Reality technologies powered by high performance computing, growth of connected objects and thereby the Internet of Things, cheaper smartphones and tablets and strong growth of the digital economy are expected. Secondly, the number of cyber-attacks and trust issues will keep rising and will lead to the development of enhanced digital security. Thirdly, connexion speeds will continue improving with the development of fibre-optic broadband and 5G. Also, there

will be more cross-industry mergers between technology, television, networks, industry, media and transportation sectors. Further, there will be a shift from an owning mindset to a using mindset and to providing more on-demand subscription services. Besides, the digital services market is expected to grow with a rate of 7% per year and is expected to reach 2,900 billion in 2025. Additionally, technologies like blockchain will transform industries, such as banking and finance and travel and retail, by removing intermediaries. Furthermore, big data is expected to raise issues regarding data privacy and protection and to influence, for instance, people's insurance premiums and loan requests. Finally, data will continue migrating to the cloud, which raises the issue of a few tech giants owning the public cloud (What is the future of the digital world, 2019).

Besides these trends, future digitalisation has the potential to transform our societies into more sustainable and safer environments. Indeed, digitalisation has the potential to avoid 26 billion tonnes of CO₂ emissions in the atmosphere between 2016 and 2025, which corresponds approximately to the quantity of CO₂ emitted by Europe during that period. For digitalisation to achieve this, new business models, such as circular business models, need to be deployed by industries and adopted by customers. Also, digitalisation could reduce the number of deathly accidents on the road by 2025 by more than 10% through assisted driving technologies and usage-based insurance. Nevertheless, improved data privacy, data protection and data transparency coupled with ethical norms on the usage of data are needed to enable customers to trust these technologies (Understanding the impact of digitalization on society, n.d.).

Finally, future digitalisation will have a staggering impact on the jobs market as it could potentially generate the creation of millions of jobs while millions of other jobs will be replaced through the adoption of more efficient digital solutions (Understanding the impact of digitalization on society, n.d.). In fact, it is forecasted that about 85% of the jobs, tasks and duties current students will be doing in 2030 do not exist now (Sebesi, 2018). There is, therefore, a huge challenge ahead in terms of education of the future workforce for both the educational system and companies, that provide training to employees to enable them to engage with new digital technologies (Sebesi, 2018; Understanding the impact of digitalization on society, n.d.).

Chapter 3: Digital transformation

This chapter will build further on the concepts of digital and digitalisation described in the previous chapter to explain what digital transformation entails and to describe how it evolved in the last decades. The chapter will then focus on the importance of digital transformation for companies and explain how they approach this challenge.

1. Definition

Digital transformation is a broad concept that has been extensively discussed in the literature. In fact, the various authors that have attempted to define the concept of digital transformation seem to be significantly aligned. Indeed, Fitzgerald, Kruschwitz, Bonnet & Welch define it as “the use of new digital technologies (social media, mobile, analytics or embedded devices) to enable major business improvements such as enhancing customer experience, streamlining operations, or creating new business models” (2014, p.2). Likewise, Warner and Wäger define digital transformation as “an ongoing process of strategic renewal that uses advances in digital technologies to build capabilities that refresh or replace an organisation’s business model, collaborative approach and culture” (Warner & Wäger, 2018). Furthermore, Liu, Chen & Chou define digital transformation as “an organisational transformation that integrates digital technologies and business processes in a digital economy” (2011, p. 1730). Moreover, digital transformation can be defined as “the modification (or adaptation) of business models, resulting from the dynamic pace of technological progress and innovation that trigger changes in consumer and social behaviours” (Kotarba, 2018). Finally, Bounfour defines digital transformation as “a new development in the use of digital artefacts, systems and symbols within and around organisations” (Bounfour, 2016, p. 20).

Overall, as these definitions are interconnected they can be put together into a more comprehensive description. Digital transformation can thereby be defined as a strategic process, generated by the dynamic evolution of digital technologies (cloud, mobile, social media and analytics), that triggers a change in the way consumers behave and that attempts to build capabilities enabling major changes to the business model with the objective to improve the customer experience and the operating model of the firm, thereby obtaining or maintaining a competitive advantage. Digital transformation is a

continuous process; the new systems, symbols and artefacts developed in one phase of digital transformation will further be transformed in the next phase.

This definition entails that digital transformation is generated by four underlying digital technologies, the third platform technologies. The first technology, cloud computing, enables new forms of interaction between companies and individuals and supports cross-platform data analytics. Secondly, mobile connectivity allows companies to gather more information about their customers, to interact with their customers at anytime and anywhere and to transform and deliver new customer experiences. It also enables companies to directly interact with their stakeholders. Moreover, social media facilitate the collection of feedback from customers, proactive and fast communication with stakeholders and transparency on an organisation's processes. Finally, big data and analytics enable deeper customer insights, more detailed client-based segmentations, better-targeted marketing and deeper business intelligence. By producing both descriptive and predictive information a greater understanding of the entire value chain is possible (Berman & Marshall, 2014; Moreira, Ferreira & Seruca, 2018).

Besides these base technologies on which digital transformation is built, digital transformation is driven by several innovative solutions such as the Internet of Things, Artificial Intelligence, Augmented and Virtual Reality, Next Generation Security, Cognitive Systems, Robotics and 3D Printing (Auriga, 2016; Moreira et al., 2018).

2. History of digital transformation

As mentioned earlier, digital and digitalisation are not new and, in fact, they have been impacting companies through digital transformation for decades. Indeed, the digital transformation of businesses started with the development of digital channels, such as websites, that connected companies and their customers. Therefore, digital processes were generated to support interactions with customers. Companies then rapidly established digital teams to manage new mobile and social channels. Consequently, companies became able to generate and leverage data on their activities, customers, suppliers, etc. In fact, companies became connected to their suppliers, customers and other stakeholders. They subsequently realised that they were operating in digital networks and thereby further connected their stakeholders, processes and devices into

these networks. They then started building platforms connecting all the players of their networks and started experimenting with new ways of doing business.

While in the 1950s digital transformation was built on mainframes and in the 1980s on client-server models, today, digital transformation is built on the previously mentioned third platform technologies (Berman & Marshall, 2014; Moreira et al., 2018). As digital transformation is as much an accelerating process as digitalisation, many opportunities are yet to be (Auriga, 2016). Indeed, the number of companies having digital transformation initiatives is expected to increase from 22% in 2018 to 50% in 2020 (Moreira et al., 2018).

3. Importance for companies

As digital technologies are permeating everything, market forces (the emergence of new digital ecosystems, the fading of barriers to entry, the resulting rise of new entrants, the decoupling and fragmentation of value chains, the diminishment in ownership of assets and infrastructure and the convergence of industries) make business innovation and, more specifically, digital transformation imperative for established companies to sustain their competitive advantage (Anderson & Ellerby, 2017; Berman & Marshall, 2014; Bharadwaj et al., 2013; Fitzgerald et al., 2014; Kotarba, 2018; Main, Lamm & McCormack, 2018). The following five aspects of the current digital transformation make it even more important for companies than previous transformations.

a. Speed and range

The current digital transformation is taking place at an unprecedented speed and has a tremendous range and impact. Indeed, the combination of the four third platform technologies and the resulting solutions have driven the creation of completely new services, products and business models across all industries. In fact, these have never risen as rapidly as today (Main et al., 2018; Matzler, Friedrich von den Eichen, Anschober & Kohler, 2018).

b. Disruption

Digital transformation is disruptive (Main et al., 2018). While digital transformation is fundamentally transforming business models, markets and industries, many incumbents are struggling, reacting too slowly, underestimating disruptive innovations and maintaining their current business models (Fitzgerald et al., 2014; Kotarba, 2018; Matzler et al., 2018; Pflaum & Golzer, 2018; Warner & Wäger, 2018). For instance, only 27% of businesses had a consistent digital strategy in place in 2018 (Moreira et al., 2018). The first explanation for this problem is that established companies perceive disruptive innovations as unattractive. Indeed, these innovations are often not directly targeting their most profitable customers, they originate in niche markets, they bring along cannibalisation risks with regards to existing business lines and, finally, established companies have important infrastructures that support current business models and that make changes difficult (Matzler et al., 2018). A second aspect is that path dependencies prevent incumbents from creating new disruptive business models as they often extend, alter or stop existing activities in an evolutionary way (Warner & Wäger, 2018).

c. Leadership challenge

Digital transformation is a difficult leadership challenge as it requires to completely rethink the way a company is doing business and it demands an understanding of the latest economic and business concepts, which is often a struggle for senior leaders without experience with the latest technologies (Khan, 2016; Kotarba, 2018; Matzler et al., 2018; Pappas et al., 2018; Warner & Wäger, 2018). Leaders further face a strategic paradox as they must implement new ways of working, new services and new products while protecting current margins and profits. Because of this paradox and because of the lack of urgency of the top leadership, many managers favour established business models above new models that might put the profitability of the current business models at risk (Fitzgerald et al., 2014; Warner & Wäger, 2018). It is thereby crucial that leaders have the required digital knowledge, experience and skills and surround themselves with digital savvy advisors (Anderson, 2016).

d. Significant investments

Succeeding in the digital era requires investing large amounts in resources such as processes, people and technology (Newman, 2017; Pappas et al., 2018). For instance, new business models require significant investments in IT to support digital transformation and enable the development of these new business models (Anderson, 2016; Moreira et al., 2018). Also, the fact that digitalisation has given customers a wider choice and has increased their expectations forces businesses to re-imagine their traditional value propositions (Warner & Wäger, 2018).

e. Profits

Digital initiatives are expected to be significantly profitable. Indeed, hundreds of thousands of businesses expect the revenues generated by their digital initiatives to increase by 80% by 2020 (Moreira et al., 2018). Also, organisations that embrace digital transformation in a mature and innovative way are 9 to 26% more profitable than comparable competitors that do not embrace it (Anderson, 2016).

Overall, digital transformation is a process that no company in no industry will be able to shelter from (Fitzgerald et al., 2014). Indeed, less than 5% of companies believe that digital transformation will never become important for their business (Fitzgerald et al., 2014). In fact, digital transformation based on third platform technologies is already taking place in numerous companies in several sectors (Kotarba, 2018). For instance, the banking, telecommunications, insurance, and media industries are already massively transforming (Collin et al., 2015). In fact, a survey conducted by Fitzgerald et al. in 2014 found that 81% of employees believed their companies were already attempting to achieve digital transformation (Fitzgerald et al., 2014). Nevertheless, the need for digital transformation depends on the industry in which a firm is operating and it is thereby crucial to assess the current business models of firms against the level of importance of digital transformation for these firms (Kotarba, 2018).

4. Approaches

As mentioned in the former section, digital transformation will not be the same for all companies. Indeed, some companies face an urgent need to transform while others are not significantly pressured yet. In fact, each company has a different approach to digital transformation, develops specific strategies and focuses on other aspects. This section will thereby further describe which approaches businesses attempting digital transformation can use.

a. Bottom-up or top-down

Businesses can have a bottom-up approach or a top-down, strategy-driven approach.

On the one hand, the bottom-up approach entails that digital transformation comes from innovation teams within the business. These are trained to become experts in digitalisation and digital technologies, have to build business cases for potential digital initiatives and have to provide implementation roadmaps to senior management. This approach faces the difficulty that many of these teams are too busy with their operational tasks to take time for such initiatives and that investments in the needed IT infrastructure are extremely expensive (Newman, 2017; Pflaum & Golzer, 2018).

On the other hand, the top-down approach involves the development of a digital vision and strategy, the identification of potential barriers and risks and, subsequently, their mitigation by top management. Leaders can use tools such as maturity models to assess where their business stands in the digital transformation process and what they can implement to further achieve their digital transformation (Newman, 2017; Pflaum & Golzer, 2018).

Overall, these approaches are complementary and should be combined to achieve a successful digital transformation. Indeed, digital vision and strategy are needed to avoid sporadic and siloed digital initiatives and to structure, legitimise and speed up the process. Similarly, the bottom-up approach is required to raise and assess concrete digital actions which are developed by experts with knowledge of both the business and the most innovative digital solutions.

b. Customer value proposition or operating model

There are two strategic paths to digital transformation: enhancing the customer value proposition or transforming the operating model.

First, to enhance the customer value proposition, the customer experience can be improved, the company can develop new digital solutions to move into adjacent markets and the value proposition can completely be reinvented (Berman, 2012; Main et al., 2018; Sousa & Rocha, 2019; Warner & Wäger, 2018). One of the main difficulties in this path is to monetise the reshaped customer value proposition.

Secondly, to transform the operating model, new digital capabilities can be built, information can be leveraged to optimise the organisation and digital and physical elements can be integrated. The main challenge regarding the operating model is to identify the business needs and requirements to be able to optimise the related processes and activities and thereby achieve better results (Berman, 2012).

Overall, these two paths are complementary and, thereby, depending on the industry, customers, competition and strategic objectives of the company they should be followed at the same time or successively (Berman, 2012).

c. Enablers

Companies in the process of digital transformation through one of the previous paths should be aware of several digital enablers required to successfully achieve their transformation. These enablers are connectivity, experience innovation, data intelligence, leading-edge innovation, automation and cybersecurity and are derived from combinations of third platform technologies (Main et al., 2018). One of the main insights for companies is that these enablers do not provide a sustainable added value if taken independently. Indeed, it is the combination of all the enablers relevant to a specific company and its chosen strategic path that allows it to successfully transform (Main et al., 2018; Pflaum & Golzer, 2018).

d. Strategy

The strategy should be defined on the short term, medium term and long term, it should be aligned with the strategic vision and there should be a financial roadmap with tangible projected gains to support it. As mentioned earlier, leaders should use digital maturity models to measure where the company stands in the digital transformation. A complementary methodology is to develop a graph where a company can put on one axis the new digital opportunities that are rising on the market and on the other axis what the company is doing to digitally transform. This helps companies assess if the planned initiatives are matching the digital evolutions of the market, identify gaps and prioritise investments (Newman, 2017).

Besides, to successfully achieve digital transformation, companies should have a profound understanding of the customer needs and expectations and should thereby open their strategy process to get the latest customer insights.

Also, companies should develop digitally driven mindsets by cooperating with tech start-ups and developing failure cultures. Companies should be ambitious by thinking in terms of business models and by developing speedboats, not tankers (Matzler et al., 2018).

Overall, digital transformation can be achieved at three sequential levels. At the first level, the services and products have been digitalised. Then, the processes and decisions can be digitalised into “autonomous, self-controlling, self-configuring, knowledge-based and sensor-assisted” processes. Eventually, when both the products and the processes have been digitalised and linked and new revenue schemes have been built, the business model becomes a digital business model (Matzler et al., 2018).

Chapter 4: Digital transformation and the board of directors

This chapter will build the link between the previous chapters by outlining the role of boards of directors in the digital transformation, by describing what enables boards to fulfil their duties and by illustrating how boards of directors are currently coping with their responsibilities.

1. The role of the board of directors in digital transformation

Digital transformation has been demonstrated to be one of the most crucial issues for companies and it should thereby be one of the most important strategic topics on the board's agenda. As mentioned earlier, digital transformation should be approached by integrating the bottom-up and top-down approaches. Thereby, digital transformation requires strategic vision on how the firm should reshape its customer value proposition and its operating model, discernment on which investments should be made to achieve the transformation and determination to stay the course while in the middle of the transformation. Consequently, not only senior management but also the board of directors should play an active role in digital transformation (Anderson, 2016; Navez & Leroy, 2018; Rogers, 2017; Usina, 2013). In fact, the board of directors has been found to have a significantly high impact on the creation of long-term value when an organisation goes through digital transformation (Rogers, 2017).

Overall, the board should not simply leave the responsibility to management but should consistently execute its main roles presented in the former section on the role of the board of directors. These roles will be further illustrated with regards to digital transformation.

a. Strategizing

Firstly, as mentioned earlier, the role of the board is to contribute to the creation of long-term value and consequently to the development of sustainable competitive advantage. The board should, therefore, help the company plot the right course by helping the management establish the digital vision and the digital strategy of the firm. The board does this by assessing, challenging and validating the proposed digital strategy. It should thereby understand that the end goal is not digital transformation but the creation of business value (Elizabeth & Glenn, 2013; Main et al., 2018).

b. Advising

Secondly, the advisory role of the board is more important on the topic of digital transformation than on any other topic as digital transformation today will determine the winners and losers of the future. It is thereby crucial that the board helps the CEO and other top managers understand, evaluate and espouse the complete extent of digitalisation and its impact on their company (Main et al., 2018).

c. Controlling and monitoring

Moreover, boards should have a controlling and monitoring role towards management on the digital transformation process. Indeed, besides challenging senior management to elaborate unique, valuable and innovative digital solutions, boards should control their implementation by senior management (Main et al., 2018; Navez & Leroy, 2018). They should thereby discuss the progress of the digital transformation, the successful and failed initiatives and the proposed mitigation plans during board meetings (Rogers, 2017).

d. Managing digital-related risks

The board should also help senior management define an appropriate digital risk appetite to determine how much risk and which risks the firm is willing to take for the sake of digital transformation (Main et al., 2018).

e. Access to resources

Finally, boards should provide access to the resources needed for digital transformation, both in terms of human capital and relational capital. Indeed, they should provide digital expertise, experience and knowledge as well as networks of relations within the digital world (Anderson, 2016; Elizabeth & Glenn, 2013; Main et al., 2018; Navez & Leroy, 2018; Rogers, 2017).

2. How are boards of directors coping with this responsibility?

While digital transformation is one of the most important issues for companies and the involvement of the board of directors in this transformation is one of its key success factors, this section will describe how seriously boards are taking digital transformation

and to what extent they are implementing solutions at board level enabling them to better support their companies throughout the digital transformation.

In fact, several studies have shown that boards are increasingly taking digital seriously but that the pace of awareness is too slow (Grossman, Rickard & Viskin, 2014; Navez & Leroy, 2018). For instance, a study conducted by Russel Reynolds in 2014 found that, at that time, only 10% of the observed boards could be classified as highly digital boards. Besides, the study found that 80% of the companies were lacking any digital representation at board level (Grossman et al., 2014). Also, a study conducted by Amrop in 2016 found that only 5% of boards of directors of public companies in the US and in Europe had a digital profile on their board (Navez & Leroy, 2018). Nevertheless, a study led by EY in Europe found that the focus of the board is now for 58% of the boards on innovative products, for 55% on cybersecurity, for 53% on digital competencies and for 48% on data protection (Landrieu, 2018). This is consistent with the rise of digital initiatives, which is, as mentioned earlier, expected to double by 2020 (Moreira et al., 2018).

These results show that even though boards of directors understand the importance of digital transformation, they are not digital enough. The following subsections will dig further into the concepts of digital directors, committees and advisory boards.

a. Digital director

A digital director can be defined as a director who has significant experience with digital-related technologies, gained through a senior position at a company which is considered a leader in digital transformation in its industry, for which a significant part of its revenues is gained through digital-related solutions or for which digital channels are key to its business (Nada, 2013).

Furthermore, the role of digital directors is to ensure that the company is not missing the digitalisation wave and is implementing the necessary initiatives to seize its opportunities and mitigate its threats (Boisseau, 2017). Firstly, a digital director advises the CEO on strategic decisions related to digital topics. Secondly, the digital director guides, coaches and supports its fellow board members on the broader digital landscape, on digital trends

that might impact the company and on potential investments in digital solutions. Lastly, the digital director acts as a change agent at board level by making the board look at the opportunities and threats brought by digitalisation and take related decisions. Through its role, the digital director provides assurance that the company is dealing with digital threats and sends a signal to its stakeholders that the company is taking digital seriously (Gottenberg, 2015; Preusse, 2013). Nevertheless, digital directors are not the solution for successful digital transformation by themselves, they are only a supplement to the development of digital expertise at lower levels within a company.

Moreover, digital directors are in general younger, less senior and less traditional profiles with a lot of digital expertise (Boisseau, 2017; Grossman et al., 2014; Navez & Leroy, 2018; Preusse, 2013). Indeed, their average age is 51 years old and is lower than the average age of other directors, which is 62 years old. Nevertheless, the fact that they are still over 50 years old shows that they are expected to bring broad leadership experience and not only a digital viewpoint. A balance must thereby be found between digital savviness and leadership experience. Besides, they most often gained their experience at high profile digital companies like Apple, Microsoft and Google and have worked in sectors such as the technology, private equity, venture capital or consumer sectors (Grossman et al., 2014).

Finally, as mentioned earlier, the importance of digital transformation is different for various companies in various sectors. In fact, Russel Reynolds found that 48% of companies in the tech industry, 42% in the consumer sector and 39% in the healthcare sector have at least one digital director, which is consistent with the transformative impact of digital on these industries. In contrary, only 4% of companies in the industrial sector have at least one digital director, which is also consistent with the lesser impact of digital on this industry (Preusse, 2013; Grossman et al., 2014). Also, there are some differences between geographical locations. Indeed, there are more digital directors in the US among public companies (57% of public companies have at least one digital director) than in any other country (Grossman et al., 2014; Nada, 2013). Nevertheless, one trend common to all sectors is that the demand for digital directors is growing and will continue to grow in the future (Grossman et al., 2014).

Overall, a digital director aiming to enable digital transformation should have regular meetings with digital-related executives, should be involved in the development of strategies, should review their implementation, should be implicated in the recruitment process of key digital-related hires and should have discussions with partners and consultants. (Why boards of directors need a digital leader, 2016). As this is not always possible for busy directors, a complementary solution is to establish a digital committee.

b. Digital committee

A digital committee is a board committee which has a specific focus on digital and digital transformation. It can be established when a company requires more than a digital director and needs to set up an ongoing digital taskforce at senior level (Demirbas & Yukhanaev, 2011; Grossman et al., 2014; Sarrazin & Wilmott, 2016; Why boards of directors need a digital leader, 2016). Similarly to more traditional committees, it collects, reviews and synthesises information related to digital issues, can make certain decisions and must report to the full board for decision on key digital issues (Nicholson & Kiel, 2004). The digital committee should be subservient to the board and its chairman should report to the full board (Naidoo, 2011). Besides, the digital committee should be linked to the other committees such as the audit, finance, strategy and nominating committees (Naidoo, 2011; Nicholson & Kiel, 2004)

Digital committees have three main roles. The first role is to support the board by taking away a portion of its workload (Inglish, 2010; Naidoo, 2011; Nicholson & Kiel, 2004). Secondly, digital committees allow digital directors to build more expertise on the topic while helping other directors increase their digital capital (Nicholson & Kiel, 2004; Sarrazin & Wilmott, 2016). Finally, a digital committee should be involved in digital initiatives, should evaluate cybersecurity risks and should be aware of the latest technology developments (Boisseau, 2017).

Overall, 10% of European boards currently have a digital committee and, consistently with the rise of digital directors, this number is growing (Landrieu, 2018).

c. Digital advisory board

An alternative or complementary solution to the creation of a digital committee is the creation of a digital advisory board. Indeed, a digital advisory board is a simple solution to get access to digital capital and thereby bolster the competencies of the board of directors without having to significantly modify the structure of the board or having to create new positions within the board. Besides providing access to digital capital, an advisory board challenges the business model and the board of directors. Nevertheless, a digital advisory board cannot provide the same services as a digital committee or a digital director as its members do not have the same amount of time available for the company and do not have authority over the company (Libert, 2014; Usina, 2013).

3. What enables the board of directors to conduct its role?

As boards of directors play a key role in digital transformation, they should possess certain features enabling them to conduct their role. These will be briefly described in this section.

a. Digital capital

The board of directors should have a consistent set of relevant digital competencies, further called digital capital. Indeed, boards should understand digital technologies, their potential benefits and risks and how they can enable successful digital transformation to be able to achieve their role as strategists, advisors, controllers, risk managers and resource providers (Anderson, 2016; Elizabeth & Glenn, 2013; Main et al., 2018; Navez & Leroy, 2018). Thereby, the digital capital of the board is enabled by its members' knowledge, skills, abilities and network.

b. Digital structure

For the board of directors to use its digital capital towards achieving its role, it should be enabled by the right digital structure. Indeed, structural barriers can hinder the board's added value to digital transformation (Elizabeth & Glenn, 2013). Besides, it is crucial that the digital technology field is represented at the board level and not only at the executive level (Anderson, 2016). Therefore, key structural enablers are the presence of a digital director, digital committee and digital advisory board.

c. Processes

Processes related to the selection and composition of the board of directors, to the selection and training of digital directors and to the selection and training of the CEO are key to enable the board to obtain the right digital capital (Elizabeth & Glenn, 2013; Navez & Leroy, 2018).

d. Role perception

For the board of directors to successfully conduct its role in the digital transformation, all its members should be aware of what this role entails. Indeed, defining the role of the board with regards to digital transformation creates more clarity, aligns expectations and accountabilities and helps avoiding confusion (Elizabeth & Glenn, 2013).

e. Culture and leadership

An open and innovative culture and transformative leadership are needed at board level for the board to have a positive influence on digital transformation. Indeed, old board cultures, reluctance to change, non-digital savviness, perception that digital is something for younger executives and negative attitudes towards innovation can have negative impacts on the importance given by a company to digital transformation (Elizabeth & Glenn, 2013; Main et al., 2018; Rogers, 2017).

Chapter 5: Maturity models

While the previous chapters focused on the content-related aspects of board digital maturity, this chapter will briefly explain the concept of maturity model and describe different types of maturity models.

1. The concept of maturity model

A maturity model is a two-dimensional tool, generally a matrix, that describes the key characteristics of a group, organisation or project at different levels of maturity. Maturity models allow assessing the current maturity level of groups, organisations or projects and allow finding ways to increase maturity by providing enablers to reach the next maturity level. Maturity models further help practitioners structure the situation and create short-term and long-term action plans. Also, sometimes maturity models give their users the

ability to benchmark their level of maturity against the average level of maturity of groups, organisations or projects in a similar context. In practice, maturity models are used by matching the behaviours of the structure under scrutiny with typical behaviours in the grid to estimate the maturity level (Beck & Watson, 2011; Newman, 2017).

2. Different types of maturity models

There are several types of maturity models which measure the maturity of different types of organisations, which measure maturity in different areas and which use different methodologies to measure maturity.

Firstly, maturity models can measure the maturity of many different types of structures. Indeed, they can measure the maturity of a relatively informal and small group of individuals as well as the maturity of an international organisation counting hundreds of thousands of employees. Besides, maturity models can be applied on various types of organisations, such as NPOs, businesses, government organisations and international institutions. Eventually, maturity models can be specific to companies within certain industries. For instance, Omar Valdez-de-Leon developed a digital maturity model specifically for telecommunications services providers (2016) while Colli et al. (2018), Mark Newman (2017) and Shar VanBoskirk (2017) created digital maturity models that can be used by companies operating in different industries.

Secondly, the scope of a maturity model can either be very general and take several unrelated dimensions into account or specific to one area of the organisation under scrutiny. For instance, James Beck and Mark Watson (2011), Bob Garrat (2018) and Maureen Errity (2013) created board maturity models assessing the overall maturity of any board of directors, while Basie Von Solms (2016) developed a more specific model assessing the cyber governance maturity of any board of directors.

Besides, maturity models employ quantitative and qualitative techniques and sometimes even a combination of the two. These techniques are used to gather data that allows understanding the behaviours of a structure under scrutiny and thereby assessing its maturity. On the one hand, qualitative techniques can be used when the goal of a model is to understand the underlying causes of a problem and thereby to find ways to improve.

These techniques include conducting interviews, reviewing documentation and hands-on observation. The questions would start with words such as what, how, why, where and when. On the other hand, quantitative techniques can be used when specific measurable responses are needed. Such techniques help provide a reliable snapshot of the current state of maturity but are less insightful on the underlying causes. A typical quantitative technique is to conduct surveys. The questions asked are related to quantities, percentages, rankings, etc. (Valdez-de-Leon, 2016).

Finally, maturity models can be used for various purposes. Indeed, some models aim to provide the assessed structure with a path to higher maturity, others allow benchmarking it with the competition, some permit structuring a problem and others enable to assess the results of previous actions or investments. Most models will help the structure under scrutiny achieve several of these objectives (Valdez-de-Leon, 2016).

Overall, this shows the wide range of maturity models that can be built and the importance of defining the scope, purpose and methodology of a maturity model before developing it. It further shows the importance of choosing the right maturity model, depending on the specificities of the structure that will be assessed.

Part II: The board of directors digital maturity model

Chapter 6: Preliminary thoughts

This chapter will describe the reasoning behind the development of a board of directors digital maturity model, set out the scope of the model and discuss if different companies need different levels of digitally mature boards.

1. Why a board of directors digital maturity model?

On the one hand, as mentioned earlier, digital transformation is one of the most important challenges for companies and it requires boards of directors to play an active role. In fact, it should be one of the most important strategic issues on the agenda of the board (Main et al., 2018; Navez & Leroy, 2018). Nevertheless, it was shown earlier that even though boards are increasingly involved in digital transformation, many boards are still underestimating it or leaving it to management. It was also shown that many boards do not have what it takes to lead their companies through the digital transformation, which could explain why they are not conducting their role.

On the other hand, a review of existing literature on boards of directors shows that there is currently no model that allows to measure the digital maturity of a board of directors. There are, nevertheless, models assessing the maturity of boards in general or on specific dimensions and models assessing the digital maturity of companies.

Taken together, these insights show that there is a need for a model measuring the digital maturity of boards of directors. Indeed, such a model would help boards assess their digital maturity and take the necessary actions to increase their maturity level if required. Besides, a board of directors digital maturity model would sensitise executives and non-executives to the importance of having a digitally mature board of directors.

2. The scope of the model

As mentioned in the former chapter, there are different types of models. It is thereby crucial to accurately specify the scope and goal of this model.

This model will measure the digital maturity of boards of directors. As international companies are the most likely to have a developed board of directors, the focus lies on boards of directors of international companies. Besides, the scope of the model is “digital”. The model is thereby narrow in terms of focus, but the scope, “digital”, is broad and includes many technologies. For the model to be applicable to companies with different contexts, it has not been narrowed down to one specific dimension of digital but includes the four third platform technologies and the related solutions within its scope.

3. Do different companies need boards with different digital maturity levels?

No two companies are the same. Indeed, companies can operate in different environments, work in different industries, have diverse business lines, sizes, values, cultures, ownership structures, management styles, etc. In fact, these are only a few among the many possible differences between companies. Therefore, digital does not impact all companies in the same way, but many factors influence how digital impacts every single business. Consequently, companies do not have the same needs in terms of digital leadership at the board level and, thus, in terms of digital maturity. For instance, companies operating in less-digitalised environments, such as the building industry, probably do not need a board of directors with a digital maturity level of four or five while firms operating in highly digitalised environments, such as tech companies or digital media companies, are more likely to require boards of directors with such maturity levels.

Chapter 7: The proposed digital maturity model

Now that the literature has been reviewed, the concept presented and the scope and reasoning discussed, this chapter will describe the proposed digital maturity model. The proposed digital maturity model is based on the formerly presented literature and can be found in appendix 1: “The proposed digital maturity model”.

The board of directors digital maturity model is a matrix consisting of two axes. The horizontal axis measures the maturity of a board of directors through several maturity levels. The maturity increases when going from the left to the right. The vertical axis consists of five dimensions of boards of directors that allow measuring the digital maturity and that describe what is concretely measured by the model. Each dimension is composed of several subdimensions that further detail specific areas of their dimension.

Overall, there are twenty subdimensions. For each subdimension, at each maturity level, specific enablers have been defined and serve as indicators for the users of the model. Indeed, through these enablers the digital maturity of a board of directors can be assessed for each subdimension and thereby for each dimension. By assessing the digital maturity in each dimension, a board can identify where it stands in terms of digital maturity, which dimensions are lagging and how it can increase its maturity in specific areas or in general.

The following sections will further describe the maturity levels, the dimensions and their subdimensions and the enablers for each subdimension, at each level.

1. The maturity levels

As mentioned earlier, the model consists of five maturity levels with an increasing maturity from the left to the right. This section will explain why five maturity levels have been designed and will further describe these maturity levels.

The five maturity levels are the “Digital sceptics”, the “Digital novices”, the “Digital neutrals”, the “Digital enablers” and the “Digital savvies”. The choice of using five maturity levels was made because it allows boards to compare themselves with an intermediary level, which gives them a direct view of how good they are doing. Also, having five levels of maturity allows to go further into detail for the enablers, thereby providing a better improvement tool for boards of directors. Besides, having more than five maturity levels would have meant complexifying the model and making it less practical and easy to use for boards.

The first level of maturity, at the extreme left, the “Digital sceptics”, describes boards that are digitally immature. These boards are unable to carry out their digital-related role and tasks. Such boards do not realise the importance of digital, digitalisation and digital transformation and understand it insufficiently to act.

The second maturity level, the “Digital novices”, includes boards that have limited digital maturity and that have a very limited ability to carry out their digital-related role. They partly acknowledge the importance of digital but only take limited actions to cope with it.

They are not enabled enough to assume their role and do not consistently take their responsibility seriously.

At an intermediary level of maturity there are the “Digital neutrals”. These boards have average digital maturity and have the ability to carry out basic digital-related tasks. They acknowledge the importance of digital and take several sporadic actions to cope with it. Such boards are thereby neither enabling digital transformation, neither hampering it.

Furthermore, “Digital enablers” are boards that are strongly digitally mature and that have a good ability to carry out their digital-related role. Such boards realise the potential of digital and have implemented many consistent actions to cope with their responsibility. They are thereby enabling digital transformation or at least the conception and implementation of digital initiatives.

Finally, at the utmost right, “Digital savvies” are boards that are highly digitally mature. Indeed, such boards have full digital maturity and have full ability to carry out their digital-related role. They completely realise the potential of digital and digital transformation is their priority. Besides enabling digital, they are leading digital transformation and digital initiatives in their companies.

2. The dimensions

As explained earlier, the model consists of five dimensions and twenty subdimensions that detail how digital maturity is being measured. These are based on the previously conducted literature review that identified what boards of directors should be like to enable digital transformation. This section will describe the five key dimensions of the model and outline their subdimensions.

a. Digital capital

The first dimension of the model is its “Digital capital”. The digital capital of a board of directors is defined in the model as the aggregation of the individual digital capabilities of its members. This dimension is essential because without digital capital a board of directors does not have the intellectual and relational capacity needed to conduct its role.

The digital capital dimension consists of four complementary subdimensions that represent the four pillars of a board's intellectual and relational digital capital. These are the board's "Digital knowledge", "Digital skills", "Digital abilities" and "Digital network".

The first subdimension of the digital capital dimension is the "Digital knowledge" of the board. It describes to what extent board members understand digital technologies and solutions. It further incorporates the extent to which board members have experience related to digital business as it is assumed that board members with more experience in digital businesses have more digital knowledge. Digital knowledge is a key subdimension of digital capital because without knowledge of digital the board cannot take appropriate decisions.

The second subdimension of digital capital is called "Digital skills" and includes the digital proficiencies developed through training or hands-on experience such as data analysis, social media expertise, mobile expertise, user experience design, online marketing, network security, information security and programming. As for digital knowledge, digital skills incorporate the extent to which board members have experience related to digital technologies as it is assumed that board members with more experience with digital technologies have more digital skills. Digital skills are key for boards as they give them the legitimacy to conduct their digital-related role.

Moreover, the "Digital abilities" represent the third subdimension of digital capital. Digital abilities are the innate traits or talents of board members that enable the board to carry out digital-related tasks. These are abilities such as intellectual curiosity, understanding human and customer nature, vision, passion and purpose. Digital abilities are crucial for a board to use its digital knowledge and skills to lead the organisation to the next digital step and to align the digital vision and strategy with the nature of the company and the expectations of its stakeholders.

Finally, the digital capital of a board of directors includes the "Digital network" of its members. The strength of the digital network of a board of directors resides in the number of digital-related connections that its members have. Digital-related connections are, for instance, people working in digital businesses or people in contact with digital

technologies. Digital networks allow board members to provide their company with additional resources and opportunities beyond their own knowledge, skills and abilities.

b. Digital structure

The second dimension is the “Digital structure”. It can be described as the structures that enable boards to effectively carry out their digital-related role. This dimension plays an important role as it increases the likeliness that a board takes digital seriously and thereby uses its digital capital to conduct its digital-related role. The digital structure consists of three subdimensions that can be implemented in boards in a complementary way. These are the “Digital director”, “Digital committee” and “Digital advisory board”.

Firstly, the “Digital director” subdimension describes to what extent responsibilities with regards to digital are defined and specifies if one or more members have a specific responsibility for digital. It builds on the previously defined concept of digital director that describes a director with significant experience in a leading digital business and which thereby has a specific responsibility for digital within the board. Digital directors play an essential role in boards of directors as they put digital on the agenda and enable other board members to understand and contribute to it.

The second subdimension is the “Digital committee”. It stresses the added value of a committee with specific responsibilities for digital. A digital committee is essential as it supports the board by taking over several digital-related tasks and helping it make the best digital-related decisions.

Finally, the last subdimension is the “Digital advisory board”. It describes the presence of an advisory board with a specific focus on key digital issues. Having a digital advisory board might be less essential than having a digital director or committee. Nevertheless, it can bring a significant added value to boards with highly challenging digital issues by helping them understand and tackle these issues.

c. Processes

The third dimension of the model focuses on processes that enable boards to effectively carry out their digital-related role. This dimension consists of several digital-related processes which are the “Digital committee selection and composition process”, the “Digital director selection and development process”, the “Director selection and development process”, the “Director digital induction and training process”, the “CEO selection and development process” and the “Meeting practices of the board and its committees”. These processes are key for boards to recruit and train directors, committee members and executives providing companies with the needed digital capital.

First of all, the “Digital committee selection and composition process” describes how the digital committee is composed and how its members are selected. It emphasises the importance of having the right board members selected for the digital committee.

The second subdimension, the “Digital director selection and development process”, outlines the importance of having a strong process to recruit the right digital director and further develop its digital capital.

The third subdimension, the “Director selection and development process”, is similar to the second subdimension. Its specificity is that it emphasises that it is important to also formally take digital into account in the recruitment and development of directors who are not digital directors.

Furthermore, the “Director digital training and induction process” subdimension puts a focus on how the board induces its new members and trains its members on digital-related topics. This process is essential as it allows to grow the digital capital of the board without transforming its structure or recruiting new directors.

Moreover, this dimension includes the “CEO selection and development process”. It stresses the importance of formally taking digital into account in the recruitment and development of the CEO as the CEO impacts the approach that a company takes with regards to digital.

Finally, the last subdimension is the “Meeting practices of the board and its committees”. It outlines that digitally mature boards should also have digital meeting practices and should thereby be able to work with the digital tools that enable such practices.

d. Role

The fourth dimension of the digital maturity model is the “Role” of the board. It describes to what extent the board accomplishes its digital-related role and it consists of five subdimensions. These are the four digital-related roles (“Developing the digital vision and strategy”, “Advising on digital”, “Controlling and monitoring digital-related initiatives” and “Managing digital-related risks”) and the “Perception by management and board”. These subdimensions are key as they allow identifying to what extent the board is achieving its digital-related functions and understanding how this is perceived. The fifth digital-related role, providing access to resources, has not been considered here as it is implicitly included in the digital capital.

Firstly, the subdimension “Developing the digital vision and strategy” emphasises the strategic role that the board plays with regards to digital and digital transformation.

Secondly, the subdimension “Advising on digital” outlines that beyond strategizing on digital the board should also have continuous contacts with the management and should advise and sensitise the management to digital throughout the year.

The third subdimension, “Controlling and monitoring digital-related initiatives”, stresses the board’s responsibility to control and monitor the implementation of digital-related initiatives.

The fourth role of the board is to manage risks and this is outlined by the subdimension “Managing digital-related risks”. Indeed, the board should play a role in deciding which digital-related risks the company is willing to take.

Finally, the last subdimension, “Perception by management and board”, shows that both board and management should be aware of the role of the board with regards to digital and should be aligned on this.

e. Culture and leadership

The last dimension of the model is the “Culture and leadership” of the board. It describes the board’s approach to digitally driven innovation and consists of two subdimensions: the “Openness of the board to digital” and the “Openness of the board to transformation”. This dimension stresses the importance of the approach of the board to digital as it impacts the culture and approach of the management and thereby of the company.

Firstly, the subdimension “Openness of the board to digital” puts a specific focus on the relationship of the board with digital. It shows that boards can have different mindsets and views of digital.

Secondly, the subdimension “Openness of the board to transformation” emphasises the importance of board cultures and puts a focus on the readiness and willingness of the board to transform the company by challenging the status quo.

3. The enablers

As mentioned in the introduction of this chapter, to measure the digital maturity of a board of directors its maturity must be assessed for each dimension and thereby for each subdimension. Therefore, for each subdimension, at each maturity level, specific enablers have been defined. These allow measuring the specific maturity level of a board in each subdimension as they specify what is required to have a certain level of maturity. This section will present the enablers for each subdimension at the five maturity levels.

a. Digital capital

Digital Knowledge - Firstly, boards in which no board member understands digital, its technologies or its potential and no board member has experience in digital businesses are digital sceptics. Secondly, a board is a digital novice when some of its members have a basic understanding of digital, its technologies and its potential but no member has experience in digital businesses. Thirdly, boards are digital neutrals when some members have no or basic understanding of digital, its technologies and its potential, some members have an average understanding of these and some members have a strong

understanding of these. Digital neutral boards also have some board members that have experience in digital businesses. Furthermore, digital enablers are boards whose members have at least an average understanding of digital, its technologies and its potential, some members have a strong understanding of these and some board members have an outstanding understanding of these. These boards have mostly board members with experience in digital businesses. Finally, when all board members have at least a strong understanding of digital, its technologies and its potential and some board members have an outstanding understanding of these, a board is considered digitally savvy in terms of digital knowledge. In such boards all members have experience in digital businesses while some members have mainly such experience.

Digital skills - At first, boards in which no member has digital skills and no member has experience with digital technologies are considered digital sceptics. Secondly, in digitally novice boards some members have basic digital skills, but none has experience with digital technologies. Moreover, digital neutral boards include some members that have no or basic digital skills, some that have average digital skills and some that have strong digital skills. Also, some of their members have experience with digital technologies. Furthermore, to become a digital enabler, all the members of a board must have at least average digital skills, some must have strong digital skills and some must be digital experts. Besides, members of such a board should have experience with digital technologies. Finally, a board is considered digitally savvy when all its members have a strong level of digital skills and some are digital experts. Savvy boards have only members that have experience with digital technologies or members with mainly such experience.

Digital abilities - First, digital sceptic boards have no member with significant digital-enabling abilities that could enable these boards to lead on digital issues. Besides, boards in which some members have a few digital-enabling abilities but not enough to enable leadership on digital issues are digital novices. Furthermore, when some members have no significant digital-enabling abilities, some have average digital-enabling abilities and some have strong digital-enabling abilities, a board is considered digitally neutral. Fourthly, digital enablers are boards in which all members have at least average digital-enabling abilities, some have strong digital-enabling abilities and some have outstanding digital-enabling abilities allowing them to lead on digital issues. Lastly, digitally savvy

boards include members with at least strong digital-enabling abilities and sometimes outstanding digital-enabling abilities allowing them to lead on digital issues.

Digital network - Firstly, digital sceptic boards have no board member with digital connections. Then, digital novices are boards in which some members have a few digital connections. Thirdly, when some board members have no digital connections, some have a few digital connections and some have many digital connections, a board is considered digitally neutral. Moreover, digital enablers are boards in which all members have at least a few digital connections, some have many digital connections and some have extensive digital networks. Ultimately, if all the members of a board have many digital connections and some have extensive digital networks, the board has reached digital savviness.

b. Digital structure

Digital director - At first, digital sceptic boards have no digital director, no generally defined responsibilities with regards to digital and no decision-making guidelines for digital-related issues. Secondly, boards that have no digital director, that have informally allocated responsibilities with regards to digital and that have no formal decision-making guidelines for digital-related issues are digital novices. Thirdly, digital neutral boards have no digital director, have formally defined responsibilities with regards to digital and have basic decision-making guidelines for digital-related issues. Besides, digitally enabling boards have one digital director, have formally defined responsibilities with regards to digital and have formally defined decision-making guidelines for digital-related issues. Eventually, digital savvies have one or more digital directors, have formally defined and well-known responsibilities with regards to digital and have formally defined and well-known decision-making guidelines for digital-related issues.

Digital committee - Firstly, digital sceptic boards have no digital committee. Digital novice boards also do not have a digital committee, but they perform some sporadic tasks a digital committee would carry out. Similarly, digital neutral boards have no digital committee, but they perform all the tasks a digital committee would execute. Moreover, a board is a digital enabler if it has a digital committee, but this digital committee has limited interaction with the rest of the board and other committees and is not perceived as essential. Lastly, digital savvy boards have a digital committee which continuously

interacts with the rest of the board and other committees, which enhances decision-making on digital-related issues by communicating the right information at the right time to the board (potentially through the digital director) and which is perceived as essential.

Digital advisory board - At first, digital sceptics have no digital advisory board. Secondly, digital novices have an advisory board but digital is not a specific dimension of its role. Thirdly, if there is an advisory board for which digital is a significant dimension of its role, the board of directors is digitally neutral. Besides, when digital is one of the core dimensions of the role of the advisory board, the board of directors is digitally enabling. Finally, if there is a specific digital advisory board, the board of directors is digitally savvy.

c. Processes

Digital committee selection and composition process - First, digital sceptic boards have no digital committee selection and composition process. Then, digital novices have a basic digital committee selection and composition process, but it does not formally take the digital capital needed into account and it is applied inconsistently. Moreover, digital neutral boards have a well-defined digital committee selection and composition process that formally takes the digital capital needed into account, but it is still applied inconsistently. Furthermore, in digitally enabling boards, there is a well-defined digital committee selection and composition process that formally takes the digital capital needed into account and that is applied consistently. Finally, in digital savvy boards, there is a well-defined digital committee selection and composition process that formally takes the digital capital needed into account by using a tool to assess the digital capital gap. The process is applied consistently and is continuously assessed and improved.

Digital director selection and development process - At first, if there is no digital director selection and development process, a board is considered digitally sceptic. Secondly, if there is a basic digital director selection and development process but it does not have formally defined criteria and it is applied inconsistently, the board is considered digitally novice. Besides, when there is a well-defined digital director selection and development process that is based on formally defined selection and development criteria but that is still applied inconsistently, the board is digitally neutral. Fourthly, if the board has a well-defined digital director selection and development process that is based on formally

defined selection and development criteria and that is applied consistently, the board is digitally enabling. Lastly, when there is a well-defined digital director selection and development process that uses a specific tool to ensure the right set of digital skills is obtained, the board is digitally savvy. In a digital savvy board, the process is applied consistently and is continuously assessed and improved.

Director selection and development process - Firstly, in a digital sceptic board digital capital is not considered in the director selection and development process. Then, if digital capital is informally considered in the director selection and development process, the board is digitally novice. Furthermore, when digital capital is formally considered in the director selection and development process but its importance is limited, the board is digitally neutral. Besides, when digital capital is formally considered in the director selection and development process through a digital capabilities framework identifying the digital capital gap, the board is enabling digital. Eventually, if digital capital is one of the key formulated director selection and development criteria, if the process is applied consistently and if both the process and the digital capabilities framework are continuously assessed and improved, the board is digitally savvy.

Director digital induction and training process - At first, in digital sceptic boards no digital-related induction or training is provided to directors. Secondly, in digital novice boards limited digital-related induction and training is provided to directors. Furthermore, digital neutrals are boards in which frequent informal digital-related induction and training is provided to directors. Besides, when frequent informal and formal digital-related induction and training is provided to directors as part of a training and induction programme, the board is digitally enabling. Overall, when there is an extensive, tailored and comprehensive digital induction and training framework and process on which the digital training and induction programme is based, the board is digitally savvy.

CEO selection and development process - Firstly, if digital capital is not considered in the CEO selection and development process, the board is digitally sceptic. Besides, if digital capital is informally considered in the CEO selection and development process, the board is digitally novice. Moreover, when digital capital is formally considered in the CEO selection and development process but its importance is limited, the board is neutral

towards digital. Besides, digitally enabling boards formally take digital capital into account in the CEO selection and development process through a digital capabilities framework. Lastly, in digital savvy boards digital capital is formally considered in the CEO selection and development process through a digital capabilities framework and digital capital is formulated as one of the key CEO selection and development criteria.

Meeting practices of the board and its committees - At first, in digital sceptic boards the board and its committees have only traditional meeting practices. These are based essentially on emails, calls and face-to-face meetings. Secondly, in digitally novice boards the board and its committees have mainly traditional meeting practices, but they also have a few digital meeting practices. Nevertheless, digital meeting tools are difficult to use for most members. Moreover, digital neutrals are boards in which the board and its committees have several traditional meeting practices and several digital meeting practices. Besides, some members master digital meeting tools very well while others are still struggling. Furthermore, when the board and its committees have complementary traditional and digital meeting practices and when digital meeting tools are well mastered by all members, the board is digitally enabling. Eventually, in digitally savvy boards the board and its committees have integrated traditional and digital meeting practices and make use of digital meeting tools enabling these practices, such as pre- and post-meeting questionnaires (SurveyMonkey, Typeform and Google Forms), virtual meetings (Skype, Hangouts and Zoom), instant messaging (Yammer, Slack and Flowdock), resource management (SharePoint, OneDrive, Google Drive and Dropbox), documentation (PowerPoint and Google Slides) and project management (Trello, Basecamp and JIRA).

d. Role

Developing the digital vision and strategy - First, digital sceptic boards are boards that are not involved in the development of a digital vision and strategy. Secondly, digital novice boards are not involved in the development of a digital vision and strategy but are aware of their existence and know what these consist in. Thirdly, when the board assesses and validates the digital vision and strategy and verifies that the digital strategy is aligned with the purpose of the company, its value drivers and the expectations of its stakeholders, it is digitally neutral. Moreover, if the board is involved in the development of the digital vision and strategy, assesses and validates these and ensures that the digital strategy is

aligned with the purpose of the company, its value drivers and the expectations of its stakeholders, it is digitally enabling. Finally, if the board establishes the digital vision with the management, actively contributes to building the digital strategy and ensures that the digital strategy is aligned with the purpose of the company, its value drivers and the expectations of its stakeholders, it is digitally savvy.

Advising on digital - Firstly, when the board does not sensitise or advise management on digital issues, it is digitally sceptic. Then, when the board does not specifically sensitise or advise management on digital issues but performs its general advisory role, it is digitally novice. Besides, boards that occasionally specifically sensitise and advise management on digital issues are digital neutrals. Fourthly, boards that frequently specifically sensitise and advise management on digital issues are digital enablers. Finally, a digital savvy board continuously sensitises and advises management on digital issues.

Controlling and monitoring digital-related initiatives - At first, digital sceptics are boards that do not monitor digital-related initiatives or control their progress. Secondly, digital novice boards do not specifically monitor digital-related initiatives or control their progress but control and monitor initiatives in general. Furthermore, if the board occasionally monitors digital-related initiatives and controls their progress, it is digitally neutral. Besides, if the board frequently monitors digital-related initiatives and controls their progress, it is digitally enabling. Lastly, digital savvy boards continuously monitor digital-related initiatives and control their progress.

Managing digital-related risks - Firstly, if the board is not involved in the definition of the digital risk appetite or tolerance and is not aware of these, it is digitally sceptic. Secondly, when the board is not involved in the definition of the digital risk appetite or tolerance but is aware of their existence and knows what they consist in, it is digitally novice. Thirdly, digital neutral boards assess and validate the digital risk appetite and tolerance. Besides, digital neutral boards verify that the digital risk appetite and tolerance are aligned with the overall risk appetite and tolerance of the company. Then, if the board contributes to the development of the digital risk appetite and tolerance, assesses and validates these and ensures that these are aligned with the overall risk appetite and tolerance of the company, it is a digital enabler. Eventually, digital savvy boards contribute

to the development of the digital risk appetite and tolerance, assess and validate these and monitor adherence on an ongoing basis. Savvies ensure that the digital risk appetite and tolerance are aligned with the overall risk appetite and tolerance of the company.

Perception by management and board - First, when the board is not perceived by itself and by management as playing a role in digital, it is digitally sceptic. Secondly, if the role of the board in digital is neither perceived as value-adding or important by management and board, then the board is digitally novice. Moreover, in digitally neutral boards the role of the board in digital is perceived as value-adding but not important by management and board. Also, in digital neutral boards management and board are not aligned on what the role of the board in digital is. Fourthly, if the role of the board in digital is perceived as value-adding and important by management and board but they are still not completely aligned on what the role of the board in digital is, then the board is digitally enabling. Finally, in digital savvy boards the role of the board in digital is perceived as essential by management and board and they are aligned on what it consists in.

e. Culture and leadership

Openness of the board to digital - Firstly, digital sceptics are boards in which non-digital savviness makes the members reluctant of digital initiatives. These boards send signals against digital initiatives. Secondly, digital novice boards are tolerating digital initiatives but not supporting them. Thirdly, digital neutral boards are favourable to digital initiatives and are supporting them. Moreover, digital enablers are initiating and supporting digital initiatives. These boards send signals favouring digital initiatives. Finally, digital savvy boards are leading the development of digital initiatives and are putting in place incentive structures stimulating digital initiatives.

Openness of the board to transformation - At first, old board cultures make digitally sceptic boards reluctant of change of the status quo. These boards send signals favouring the status quo. Then, digitally novice boards tolerate transformation but do not support it. Furthermore, boards favourable to transformation and supporting it are digitally neutral. Besides, boards that are initiating and supporting transformation and that send signals favouring change are digitally enabling. Eventually, digitally savvy boards lead transformation and set up incentive structures stimulating it.

Part III: The field research

Chapter 8: Research methodology

This chapter will present the interviewed experts, detail how the interviews were conducted and outline how the interviews were analysed.

1. The experts

The interviewed experts were selected to compose a panel consisting of current or former top executives, current or former members of boards of directors and current or former top managers with a direct responsibility for digital, such as chief transformation officers, chief digital officers or chief information officers. The objective was to gather the insights of experts with various experiences in different sectors to obtain a diversity of perspectives on the digital maturity of boards of directors. Overall, the interviewed experts have experience in private banking, retail banking, electronics retail, construction, IT, electronics, telecommunications, and media and have mainly worked in international companies.

Besides, the experts have been found and contacted through two different means. On the one hand, two experts were contacted through the personal network of the author of this thesis. On the other hand, six experts were found and contacted through LinkedIn. This allowed to obtain a panel of experts with significant executive and non-executive responsibilities. The experts are presented in table 1.

Table 1: Presentation of experts

Name	Position – Education - Experience
Yvan De Cock	- Chairman of the board of directors of BNP Paribas Fortis Factoring and member of the board of directors of TEB - Master's in law at the "Katholieke Universiteit Leuven" and in finance at "HUB-EHSAL" - 33 years at BNP Paribas Fortis, mainly in corporate banking - Several executive and non-executive positions in different countries
Charles-Henri de	- Managing director of FNAC Belgium - Vanden Borre - Master's in marketing and sales at "ACI Negocia" and MBA at "Institut d'administration des entreprises de Paris"

Maleissye-Melun	- 20 years at Darty and 4 years at FNAC, both in electronics retail
Benoît de Ruffray	- Chief executive officer and chairman of Eiffage - Bachelor's at "Ecole Polytechnique", master's at "Ecole Nationale des Ponts et Chaussées" and later at "Imperial College London" - Career in the construction sector at Bouygues, Vinci and Eiffage - Several positions of CEO and board member all around the world
Anne Fievez	- Independent director - Master's in civil engineering at the "Faculté Polytechnique de Mons", executive programme in management and philosophy at "Solvay Brussels School" and executive master's on digital leadership at "Vlerick Business School" - Former CIO of Beobank, Crelan, Degroof, Puilaetco and Delta Lloyd
Francis Heymans	- Former CEO and chairman of Dailycer Holding and former managing director and board member at Petercam - Bachelor's in applied economics at the "Katholieke Universiteit Leuven" and master's in international marketing at "Vlerick Leuven-Gent Management School" - 30 years in banking at Petercam and 2 years in food at Dailycer
Geert Kelchtermans	- Director of digital transformation, digital studio and advertising sales house at Proximus - Master's in economics and then in international business at the "Katholieke Universiteit Leuven" - 14 years at Proximus, a Belgian telecommunications company
Fabrice Massin	- Chief transformation & digital officer of RTL BeLux - Bachelor's in political sciences and international relations, executive master's in marketing and advertising at "Solvay Brussels School" and MBA at "INSEAD" - Several positions of director of IT and media in telecommunications and media firms such as Proximus, RTBF and RTL
Saskia Van Uffelen	- Digital champion of Belgium and independent director - Bachelor's in physical education at the "Hoger Instituut voor Lichaamlijke Opvoeding Antwerpen" and master's in pedagogy at the "Hoger Pedagogische Instituut Antwerpen". - Experience in IT companies such as Hewlett-Packard (15 years) - Former CEO of Bull, CSB Consulting and Ericsson Belux

2. The interviews

The interviews were conducted by Skype, phone call or in face to face. All the interviews were structured as follows. First, the concept of digital maturity model was presented and the expert was introduced. Then, the second part focused on the importance of digital for

the company and on the relationship between the board of directors and digital. Finally, the third part focused on the proposed digital maturity model. The interview guide can be found in appendix 5 “Interview guide”. Overall, the interviews were semi-directive as a structure had been predefined and questions had been prepared to make sure the experts covered all the aspects of the model during the interview. The interviews lasted on average for fifty minutes with the shortest interview lasting for thirty minutes and the longest interview for one hour and twenty minutes. The interviews are available in appendix 6 “Interview transcripts”.

3. The analysis methodology

The interviews were analysed through Dedoose, an interview analysis software. It was decided to use this software as it enables to analyse qualitative interviews in an objective and rigorous way. The methodology has been the following. First, the interview transcripts were uploaded in the software and several codes were created in the platform (one code corresponds to one point of analysis, for instance, digital knowledge). Then, the interview transcripts were read carefully and excerpts from the various transcripts were linked to related codes. When relevant, a rate or weight of 1 to 5 was given to the excerpts; 1 meaning that the expert did not agree at all with that point of analysis and 5 meaning that the expert completely agreed. Finally, a table with code weight statistics was created through the software. It includes for each code the number of related excerpts and its minimum rate, maximum rate, average rate, median, range, sum, standard deviation and variance. For this analysis, it has been chosen to focus on the minimum, average, range and standard deviation. These can be found in appendix 4 “Code weight statistics”. Besides analysing this table, the excerpts related to each code were compared in a qualitative way to provide further insights to improve the model.

Chapter 9: Results

This chapter will present the results of the interviews conducted with the experts. It will sequentially discuss and illustrate the insights of the interviews regarding the concept, the role, the enablers and the maturity levels needed by companies. But beforehand it is interesting to mention that the experts all confirmed that digital is very important for the companies they are or have been working in.

1. The concept

Overall, the experts all emphasised that there is a need for a board of directors digital maturity model and that it could bring a significant added value to boards of directors. This is confirmed by the code weight statistics as the minimum weight is high (4), the average weight is nearly the maximum (4.8), the range is low (1) and the standard deviation is very low (0.5). Moreover, when looking at the excerpts, it comes out that the experts believed that such a model would help boards conduct their role with regards to digital better and would help them understand how to support their companies in the digital era. For instance, Charles-Henri de Maleissye-Melun said that *“many people ask themselves such questions but are unable to measure it”*. Furthermore, the experts argued that boards are not digital enough yet and that they need to equip themselves if they want to ensure the long-term success of their companies. For example, Saskia Van Uffelen argued that *“we need to put some measurable aspects to make it clear to boards that they are not there yet. [...] We need to create a reference frame they can use to compare themselves with others. I think it is a very good idea to create such a model.”* Finally, most experts emphasised that a digital maturity model for the board of directors should stress the fact that the board of directors is non-executive.

2. The role

In general, the experts agreed that the board of directors plays a key role with regards to digital and digital transformation. Indeed, the role of the board of directors is to ensure the sustainability of the company and digital transformation impacts the long-term existence of the firm. The experts further emphasised that because the management is short-term focused there is a need for a long-term oriented board of directors.

a. Strategizing

With a minimum weight of 4, an average weight of 4.8, a range of 1 and a standard deviation of 0.4 it can be deduced that the experts unanimously confirmed that the role of the board is to challenge and validate the digital strategy. Firstly, a strong illustration of this is the answer of Geert Kelchtermans when asked about the strategizing role of the board of directors *“I think it should be leading a part of that. The aim of the board is not to sit there and wait for return on investments. The board should be guiding the strategy and*

engaging on discussion on a three to then year evolution of the company.” Moreover, the experts emphasised that the role of the board is neither to execute, neither to propose the strategy but to make sure that the strategy proposed by the management is consistent and to thereby guide the executives. For instance, Charles-Henri de Maleissye-Melun mentioned that “The board of directors must help develop the digital vision and the digital strategy. It must ask the management to prepare it and it must guide the management in the development of this. It is the most important.”. Finally, the experts stressed that the digital strategy should be integrated with the overall strategy of the company and that the goal of digital and digital transformation is not digital itself but is to create business value today and tomorrow. For example, Benoît de Ruffray insisted that “it is not simply about digital but about its consequences, which disrupt the ecosystem and therefore the positioning and the value chain of the company”. Also, Anne Fievez mentioned that “digital is a necessary evolution but not a goal in itself”.

b. Advising

Not all the experts agreed with the advisory role of boards of directors. This was confirmed by the code weight statistics: the minimum is at 1, the average at 3.3, there is a range of 4 and there is a standard deviation of 1.9. On the one hand, some argued that it is not the role of the board to advise the CEO and that a CEO that is not competent enough on digital should either be trained or changed. For instance, Fabrice Massin said that “...if the board sees that the CEO is not digitally mature, then it can try to help him, to see how he can be coached, but nowadays when we have a CEO who is not good enough, we do not hire him or we change him. It is possible that a CEO is very good in everything else than digital and then we help him with another CEO who specialises in digital”. On the other hand, some experts believed that the board should guide and support the CEO and the management on digital and that it is especially the case when there is a specialist in digital in the board.

c. Controlling and monitoring digital initiatives

The experts completely agreed with the controlling and monitoring role of the board as shown by the fact that they all have a weight of agreement of 5 out of 5. The experts further emphasised that the board of directors should not only control the core initiatives and investments but should demand key performance indicators allowing to monitor these

investments. Fabrice Massin emphasised this strongly *“The board must control the big investments and it must go further, it must ask for measuring elements to be able to control (it must not define them itself). [...] the board must be able to check these measurement indicators and thereby to understand them.”*. Charles-Henri de Maleissye-Melun illustrated this dimension as follows *“we would like to invest an amount X in a fund that is focused on innovation and therefore the board will evaluate that”*.

d. Managing digital-related risks

With an average of 5 out of 5 it can be concluded that the experts were also strongly aligned on the importance of managing key digital-related risks at board level. They argued that digitalisation brings along risks and that these should be managed to preserve the health of the company. For instance, Yvan De Cock stressed that cybersecurity is putting banks at risk and that it is becoming mandatory to have cybersecurity expertise at board level in more and more countries: *“...in Turkey, for example, the regulator decided recently that there must be at least one person specialised in cybersecurity in the board of directors”*. Finally, they emphasised that managing risks is one of the key aspects of the role of the board of directors. Fabrice Massin gave an insightful example on a board of directors taking action to reduce risks *“Elon Musk, CEO and member of the board of Tesla and SpaceX: a few months ago, he said he wanted to remove Tesla from the stock exchange market. As CEO he does not have the right to say that. The board of directors then decided that the CEO could no longer communicate on the financial aspects of the company.”*

e. Other potential roles

Interestingly, when discussing the currently proposed roles with the experts, two other potential roles came out.

Firstly, several experts stressed that it is critical for organisations to monitor the competencies they will need in the future. For instance, Saskia Van Uffelen argued that *“There should be a plan on how to retrain the entire organisation to get the competencies needed to execute the strategy.”*. The extent to which the board of directors should be involved is not clear, but it should at least strategize, control and monitor such a plan.

Secondly, Geert Kelchtermans emphasised that the board also has a communication role that impacts how the company is perceived by the market: *"I think another role as well is that they need to spread the word; if you want to be perceived by the market as a digital frontrunner you need to spread the word. That is part of their role as well."* This role was not confirmed through the interviews that followed, but even though it might not be one of the four pillars of the role of the board of directors, it is likely that in certain companies some board members implicitly or explicitly take up such a role.

3. What enables the board to conduct its role?

a. Digital capital

First, the experts all agreed that digital knowledge is a significant enabler as shown by the average score of 4.8, the minimum weight of 4, the range of 1 and the standard deviation of 0.4. Indeed, according to the experts, it is crucial that the board of directors understands why digital is important, how it impacts the sector of the company and the company itself, what risks and opportunities it brings along, etc. For example, Charles-Henri de Maleissye-Melun commented that *"A board member must know the importance of digital for the company and especially how the company can use digital."* Moreover, the experts argued that board members should have a strong sector-related sensitivity coupled with culture and interest for digital allowing them to understand how the company can leverage digital. This was illustrated by Fabrice Massin as follows *"...when board members are confronted with a transformation plan in which we say overnight we have to fire 20% of the staff because digital forces us to reinvent ourselves, these board members must understand the sector in which they are, how the competitors act, why the sector moves and what the link with digital is."* The experts also posited that knowledge should be complementary in a board and that it is acceptable that not all members have the same level of digital knowledge but should all at least have a basic level. For instance, Yvan De Cock mentioned that *"A board of directors must consist of members with different skills. A board of directors with only digital members that does not help either. I think that today a large part of the members of a board of directors must be interested in digital to a certain extent."* Finally, the experts supported that it is important to have board members that have experience with transformations of value chains or ecosystems. Benoît de Ruffray stressed this by saying *"So, it is more about looking for people who have experienced*

transformations of value chains and ecosystems rather than intrinsic technical experience.”. Geert Kelchtermans further commented that “digital requires new and other ways of workings, which is mainly linked to the digital structure and the processes: design thinking, agile. At board level it might be interesting to have someone who has a clear vision of how an organisational structure needs to evolve in a digital transformation context.”.

Secondly, there is less concordance on the importance of digital-related skills for boards of directors. Indeed, the minimum rate is at 1, the average weight is at 3.2, there is a range of 4 and there is a standard deviation of 1.2. On the one hand, some of the experts argued that only digital knowledge is important and that hard skills and competencies are not demanded at board level as boards do not need to know how technical solutions are implemented. For instance, Charles-Henri de Maleissye-Melun emphasised that *“what is important is more the “what”, what digital can do, than the “how” for the board.”* These experts further argued that technical skills can be found at other levels of the organisation if needed. On the other hand, some experts believed that hands-on competencies are needed as digital is evolving quickly and is easier to follow when working hands on. Geert Kelchtermans illustrated this as follows *“...for certain domains having someone that has the hands in might bring an added value because you cannot understand the full extent of what is happening if you do not understand the ecosystem.”.* These experts also believed that it helps in assessing budgets, project schedules, risks, etc. Finally, others mentioned that having digital skills at board level is not mandatory but that it brings an added value and shows a strong understanding of digital. Anne Fievez commented that *“It seems less important, but if there is someone on the board doing projects that is obviously better.”.*

Thirdly, digital abilities are considered by most of the experts as important. This is confirmed by the fact that all the experts that commented on this subdimension have an agreement rate of 5 out of 5. Indeed, they argued that boards need people with appetencies and interests for digital as these allow building a digital vision. For instance, Charles-Henri de Maleissye-Melun explained that *“Boards must have members who have appetencies, interests for digital to see further how the business of the company will be transformed by digital through the habits of customers.”.* They also posited that the entire board should be aligned and that it is the role of the chairman to make sure that the board is aligned. Besides, they argued that board members without digital abilities can slow

down the board on digital-related investments and decisions. On this topic, Francis Heymans commented that *“Not all administrators have the same level of abilities and thereby all administrators must come to a certain level [...] It is the job of the chairman of the board. He is supposed to get everyone at the same level.”*. Finally, the experts pointed out that digital abilities are very difficult to obtain as there are not many board members with the right digital abilities. For instance, Fabrice Massin said that *“...the problem is that people with this kind of abilities are really rare, especially in Belgium”*.

Fourthly, all experts agreed that the board of directors should have a network of contacts working in digital-related areas as shown by the average weight of 4.6. Indeed, they believed that board members that have such networks are confronted with new digital trends and tend to think more out of the box. For example, Saskia Van Uffelen said that *“One of the roles of the board is to have a network. If you want to think out of the box, you need to have a network.”*. They also claimed that networks allow board members to inform themselves on the evolution of their companies because of digital and that administrators can identify new opportunities for their companies through discussion. This quote from Charles-Henri de Maleissye-Melun illustrates this: *“... it is important to have a network because it allows administrators to talk to their networks and identify opportunities for their businesses.”*. Nevertheless, the minimum rate (3), the range (2) and the standard deviation (0.8) are because some experts defended that it is not necessary to have a digital network brought by non-executives as executives often already have one. For instance, Yvan De Cock explained that at BNP Paribas Fortis Factoring the chief digital officer already has an elaborated digital network. Finally, as for other elements of digital capital, there should be complementarity as it is important to have networks in different domains.

b. Digital structure

Before going further into the digital structures, it seems interesting to mention this excerpt from the interview with Francis Heymans: *“According to the level of maturity in the company in terms of knowledge and sensitivity to digital and to the disruptive effects that digital can have on its business model, one moves from an advisory board towards a committee or a dedicated administrator to digital.”*. It emphasises that the use of one digital structure or another depends on the maturity of the company and on its context. Also,

Francis Heymans mentioned later during that interview that it is possible to have a digital director and a digital committee on the same board of directors.

Firstly, the code weight statistics show that, with a minimum of 3, an average of 4, a range of 2 and a standard deviation of 0.5, most of the interviewed experts agreed that having one or more non-executive digital directors in a board increases its capability of conducting its role in digital. Indeed, the experts defended that a digital profile on a board can bring another view on a company's challenges and a vision on digital. Moreover, the experts mentioned that digital directors should have experience in digital businesses at the forefront of technology as these businesses are the ones that are being challenged the most by the constant evolution of digital technologies. Also, some experts commented that the digital profiles should have experience related to the specific digital challenges of the company and should have a strong understanding of the consequences of digital on the company and not simply a technical understanding of digital. Benoît de Ruffray explained this clearly: *"The main themes of the impact brought by these technologies must be defined [...] since the impacts of digital are included in these themes there is a real interest to make sure that the board of directors has sensitivities on these big themes and that it will be able to challenge the management not on technology in fine but on its impacts."* Furthermore, the experts stated that digital directors do not specifically have to be independent but will often be independent as independent directors are usually invited for their expertise. They further argued that it is easier to challenge the CEO when being independent and that this could bring an added value. Saskia Van Uffelen's comment, *"Everybody should be professional, independent or dependent. It is easier to challenge the strategy going forward as an independent, I think."*, summarises this in a powerful way. Additionally, most of the experts believed that hiring a digital director is not sufficient as one person is not enough to support the weight of digital but that it is already a significant step towards digital maturity. In fact, some experts posited that different companies might need different numbers of digital profiles in their boards. For example, Anne Fievez commented that *"It is good, but it is better a committee, a group of people."* Finally, Yvan De Cock argued that boards of directors should not have formalised roles such as digital directors, financial directors, etc. but that there are board members with digital profiles, financial profiles, etc. and that naturally they are more involved in their respective domains.

Secondly, the opinions of the experts on the presence of a digital committee in the board of directors differed significantly. This is demonstrated by the fact that the minimum rate is 1, the average is 3.5, there is a range of 4 and there is a standard deviation of 1.8. On the one hand, some experts believed that creating a digital committee is a good way to put a focus on digital within a board and that it is even better than having one digital director as it brings along positive group dynamics. Anne Fievez illustrated this point of view as follows *“I think a digital committee makes sense because we take some board members but not all of them, which allows to not require the same digital maturity from everyone.”*. Francis Heymans also exemplified this *“I think Degroof Petercam today is supposed to have a digital committee.”* and further commented that it depends on the company and sector. On the other hand, other experts were hesitating and did not know if it is necessary but believed that it brings an added value. For example, Charles-Henri de Maleissye-Melun commented: *“I do not know if it is something common today, but it might be an idea that boards of directors have digital committees.”*. Finally, a third group of experts posited that digital should not be considered by a separate committee but should be integrated into existing committees. Indeed, according to them, the strategic committee should include digital in its role of strategizing, challenging and advising, the remuneration or selection committee should take it into account in the selection, the audit committee should be aware of digital-related risks, etc. For instance, Saskia Van Uffelen argued: *“I think the digital committee can be integrated these days. Time is over that it is a separate world.”*.

Thirdly, many experts did not agree with the idea of obtaining external advice through a digital advisory board. The low minimum (1), the low average (2.4), the range (2) and the standard deviation (0.9) show that there are some differences between the experts and that there is general reluctance to this idea. Firstly, some experts argued that there should not be a digital advisory board as, on the one hand, digital should be integrated with other topics and, on the other hand, the board of directors is supposed to be the one guiding the management and if it cannot do that, it means that the profiles at the board table are not the right ones. For instance, Fabrice Massin commented that *“The purpose of a board of directors is to be able to advise. If they themselves need help from others, they may not be in their shoes.”*. Secondly, other experts believed that such an advisory board brings an added value when the board of directors is not mature enough on digital topics and that the digital advisory board could be a temporary structure that is built when needed (when

building the strategy, when evaluating it, when being confronted with important investments, etc.). Anne Fievez argued clearly in that sense: *“An advisory board can be a temporary structure put in place when you have to precisely define the digital vision and strategy. After that, it can become of the order of a meeting per year to supervise what is done and possibly change some things.”* Also, Francis Heymans emphasised that this could be a way to involve younger and digital savvy professionals on the board of directors without giving them a director seat.

c. Processes

Firstly, as the general rate of 5 out of 5 shows, all experts agreed that it is crucial that the digital dimension is integrated into the processes established by the selection committee. Indeed, they believed that, to obtain people with a vision on digital and to obtain enough digital capital to have significant discussions at the board level, these processes must be updated to include digital criteria. For instance, Anne Fievez commented that *“It is important to measure this in the processes. [...] This applies to all processes: committee, CEO, administrators, ...”*. Yvan De Cock further exemplified this as follows *“More and more training sessions are being organised, be it in MIFID, cybersecurity or digital. This is a way to increase the knowledge of the administrators. It can be either outsiders who give these trainings or people internal to the digital department.”*. One expert, Francis Heymans, emphasised the responsibility of the chairman of the board of directors to align everyone on this topic and to put it on the agenda. The experts also argued that these processes should consider the current competencies present on the board and should be formalised. Finally, Fabrice Massin gave an insightful example that emphasises the difference between private and state-owned companies. Indeed, he explained that at the RTBF, which is partly owned by the Belgian state, the administrators are often not chosen for their competencies but for their political orientation.

Secondly, most experts were aligned on the fact that meeting practices show, to some extent, the digital maturity of a board. Nevertheless, there were some significant differences in views. Indeed, in terms of statistics, the minimum is 2, the average is 4, there is a range of 3 and a standard deviation of 1.9. Most experts believed that it is a minimum to have some digital meeting practices and that if board members are not keen to adopt some digital practices, it is not a good sign. Indeed, Fabrice Massin commented that *“When*

you are on a board, you must know how to use these modern tools.”. The following example from Yvan De Cock shows the importance of incorporating digital meeting practices: *“at BNP we send documents for boards of directors through a special secure system.”*. The experts also emphasised that boards should integrate both traditional and digital practices as interacting only digitally can have negative impacts on the long term. Some experts further stressed that it is crucial that the board leads by example by, for instance, changing the way the board interacts and making its environment evolve. For instance, Geert Kelchtermans mentioned that *“if you want to engage into digital, you need to breathe digital and so the way of working and the environment need to evolve”* and that *“digital is not only about computers, it is also about how you interact”*. Nevertheless, it has been stressed that the tools allowing boards to change the way they work are scarce and that these tools should first be developed. Saskia Van Uffelen indeed argued that *“... they would also need the tools and at the moment there are not yet such tools.”*. Furthermore, some experts believed that the private practices of board members are an even better way to identify their digital maturity than their professional practices but that these private practices do not need to be the same for boards in different companies. For example, Charles-Henri de Maleissye-Melun stated: *“It is very important, not only for the meetings but also their private life, what use they have of digital, what interactions they have, etc.”*. Also, it is important to mention that all experts agreed that the meeting practices of a board of directors are not enough to demonstrate its digital maturity but that it is a start. For instance, Anne Fievez mentioned, *“Being open to these tools is not enough to say that a board is open to digital, but it is a first point.”*. Finally, one expert did not fully agree with this subdimension and stated that *“I think this does not especially show the digital maturity of a board. You may be right, but I do not think you can judge just that aspect. An administrator who is not up to date can still be trained on this.”*.

Thirdly, one of the experts, Francis Heymans, brought up that it is crucial that the board of directors and the digital committee conduct a self-assessment and that questions, such as *“Does it have any effect on the company? Do we have the right people? Do we work well together? Could we bring something important to the company?”*, are asked. He further illustrated this with BlackBerry: *“at the level of the digital committee they did not work well. So, self-assessment is very important”*.

d. Role perception

The fact that all experts commenting on this subdimension have a weight of 5 out of 5 shows that they agreed that it is important that the board of directors understands the role it plays in digital and that it is aware that digital is part of its responsibilities. For instance, Charles-Henri de Maleissye-Melun commented that *“The board must realise that digital is part of its responsibilities and that it must act accordingly.”*. Besides, one expert emphasised that, by putting a focus on digital in the remuneration and selection committees, the board will have a better perception of the importance of digital. Another expert stressed that it is the role of the president or chairman of the board of directors to put digital on the agenda and make board members realise its importance. Additionally, it seems relevant to mention that this subdimension was difficult to explain during the interviews and that it should thereby be clarified in the final version of the model.

e. Culture and leadership

As shown by the code weight statistics (the average weight is 5 out of 5), the experts unanimously agreed that it is essential that the board of directors is open to digital and to transformation and thereby that digital must be part of the culture of the board. Indeed, they believed that digitalisation brings along important changes to companies in terms of structure, culture and values. They thereby argued that boards must not only be able but also willing to assess, challenge and make the important decisions on investments that will completely transform their companies. The experts illustrated such decisions by emphasising the social consequences of digital transformations. For instance, Anne Fievez commented that *“What is also important here is the openness to transformation because being open to digital means being open to important changes in the processes.”*. Besides, Francis Heymans stressed the importance of the role of the chairman of the board: *“For the board to be open, the chairman is crucial and since the shareholders propose the chairman, they might even be the most important factor in all this.”*. Finally, one of the experts, Saskia Van Uffelen, found in her own research that one of the key dimensions in the culture of the board is its sense of urgency. In fact, she argued that too many board members do not feel the urgency to evolve. She further illustrated that one of the key obstacles to the openness of the board to long-term digital transformation is the short-term dimension of the financial markets. Indeed, she argued that, as long as companies

are assessed on their quarterly results, it will be difficult for boards to plan significant investments and develop strategies that might decrease the quarterly results but increase the long-term value of their companies.

Another aspect that was discussed with the experts is the impact of the culture and leadership of a board of directors on the culture and approach to digital of a company. As shown by the reasonable minimum (3), the high average (4), the reasonable range (2) and the medium-low standard deviation (0.7), the experts overall agreed that the culture and leadership of a board of directors have an impact but that the extent of it might vary as some boards are more active, more distant, etc. than others. Besides, they emphasised that the management is one of the main drivers of the culture of a firm and that it might have a more significant impact than the board. For instance, Geert Kelchtermans illustrated that *“for a company like Proximus, the board is really far away and what is driving the company is the executive team.”*

f. Financial aspect

Several experts emphasised the importance of the financial aspect in decision-making within a company.

Firstly, the experts emphasised that public companies are assessed on their quarterly results. As mentioned earlier, they thereby have the incentive to increase their profits in the short term and limit costly investments that would only bring profits in the long term. Saskia Van Uffelen illustrated this as follows *“Some board members tell me “yes you are right, but we are not going to do that this quarter” [...] the question is: what is the goal of the company? To give value to shareholders. And if they only want short-term results, then everybody looks at you and says maybe but not now.”*

Secondly, they stressed that investments in digital are often significant investments and that companies need to have enough revenues to be able to invest the required amounts. For instance, Francis Heymans stated that *“To be able to invest in digital a company must have the revenues necessary to invest in it.”*

Overall, the experts wanted to emphasise that even if boards of directors and executive boards are open to digital transformation, without the financials they cannot significantly transform their companies.

4. Do different companies need boards with different digital maturity levels?

Interestingly, as the standard deviation of 1.8, the minimum of 1 and the range of 4 show, the experts were not aligned on this question. However, the mean of 3.5 shows that many interviewed experts agreed that the level of digital maturity required from the board of directors should not be the same in all companies. For instance, Geert Kelchtermans argued that *“I think the strategic need of a company is different depending on the domain in which it is operating. For instance, a start-up only working in digital might gain more from a board which is acquainted in corporate governance and knows how to put a brand in the market, how to build a long-term strategy than from having a digital savvy guy in the board [...] I think it depends on which type of company you are and what you need for your growth.”*. Nevertheless, they believed that all boards should have a minimum digital maturity as all companies are being hit by digitalisation and boards cannot conduct their role without digital maturity. For example, Anne Fievez commented that *“It is important that they have a minimum of knowledge in order to be able to understand and criticise the plans proposed by the management committee”*. Also, Benoît de Ruffray illustrated this with Cola, a company that makes bitumen. Indeed, even though putting tar on the road is not a very digital activity, Cola is reflecting on how it can use digital to review the quality of coatings. Finally, some experts disagreed and argued that all companies will strongly be disrupted by digital in the coming years or decades and that, thereby, all companies should have highly digitally mature boards of directors. For instance, Saskia Van Uffelen commented that *“I think all sectors will be disrupted like hell. [...] disruption is looking behind the corner for every single company. [...] The content of disruption will maybe be different, but I do not think that your model should be different.”*.

Part IV: The final digital maturity model

Chapter 10: Changes to the model

The analysis of the interviews has procured insights that mostly concur with the literature but sometimes contradict it. Consequently, these insights must be integrated in the final version of the digital maturity model to further improve it. The final version of the model is available in appendix 2: “The final digital maturity model”. This chapter will thereby describe the modifications made to the proposed digital maturity model.

On the one hand, neither the concept or the global structure of the model have been changed as all the experts considered the concept relevant and found its dimensions and maturity levels consistent. On the other hand, several adjustments have been made to the subdimensions of the model and to their corresponding enablers. These adaptations will be detailed in the following sections.

1. Digital capital

First, as all experts agreed with the importance of digital knowledge, the name of this subdimension has not been changed. Nevertheless, the interviews were very insightful in terms of what digital knowledge should stand for. The definition of this subdimension has thereby been reshaped into “Knowledge and understanding of digital, its impacts and the risks and opportunities it creates.” and the enablers have been updated accordingly. Also, to further convey that there should be complementarity in profiles in the board, the requirements for the “Digital neutrals” and “Digital enablers” have been lowered. Finally, as the experts emphasised that not only experience in digital businesses but also experience with digital transformation is required, this has been added to the enablers.

Secondly, as there were different opinions on the added value of having digital skills at board level, the requirements for this subdimension have been lowered for the “Digital neutrals”, “Digital enablers” and “Digital savvies”.

Moreover, the subdimension “Digital abilities” has not significantly been changed as all experts were aligned on its importance. Nevertheless, its requirements have been

lowered in a similar way as what was done for the “Digital knowledge” to emphasise the importance of complementarity.

Lastly, no modification has been made to the “Digital network” as most experts agreed that it brings an added value.

2. Digital structure

At first, as most experts agreed that having one or more digital directors in a board increases its digital maturity, this subdimension has mainly been preserved. Nonetheless, to increase clarity, it has been added to its definition that a digital director is a board member with strong digital capital. Besides, it has been decided to take the decision-making guidelines out of the enablers as they are not directly related to the concept of digital director.

Furthermore, even though there are significantly differing opinions on the added value of having a specific digital committee, it has been decided to keep the subdimension. However, the comments of the disagreeing experts, who believed that it should be integrated within the other committees, are already taken into account by the model. Indeed, to be digitally savvy, a board’s digital committee must continuously interact with the rest of the board and with the other committees.

Finally, because of the general reluctance of the experts towards the idea of digital advisory board, this subdimension has been taken out of the final model. Despite this, it does not mean that having a digital advisory board does not bring an added value but that it is not significant enough to be included in the digital maturity measurement.

3. Processes

Firstly, the five subdimensions related to the processes of the selection and remuneration committee have not been changed as the experts all agreed on their relevance.

Secondly, the subdimension “Meeting practices” has been kept as there was general alignment on the importance of having at least some digital meeting practices in boards.

Nevertheless, it has been modified to include that boards must adapt their way of working and their environment to the digital era to lead by example.

Thirdly, another subdimension has been added to include that it is crucial that the board and its digital committee conduct a self-assessment with digital-related criteria. Thereby, digitally sceptic boards do not conduct such a self-assessment. Moreover, when an informal self-assessment is conducted by the board and the digital committee (if there is one), a board is digitally novice. Furthermore, digital neutrals are boards in which the board and the digital committee (if there is one) conduct a formalised self-assessment with digital-related criteria but not on a regular basis. Then, when the board and the digital committee conduct a formalised periodic self-assessment with digital-related criteria, the board is digitally enabling. Overall, if the board and digital committee conduct a formalised periodic self-assessment that focuses on digital, they are digitally savvy.

4. Role

First, the name of the subdimension “Developing the digital vision and strategy.” has been changed to “Developing the digital vision and guiding the digital strategy.” to emphasise that the role of the board is not to develop the strategy but to challenge and validate it. Besides, the enablers have slightly been modified to further stress that the board is supposed to guide the management in building the digital strategy but not to build it.

Secondly, as the experts did not all agree with the advisory role of the board with regards to digital, its name has been reformulated as “Guiding on digital.” and its enablers have been adapted to emphasise that change. Indeed, instead of sensitising and advising it is now stated that the board should sensitise, support and challenge the management on digital issues. Also, the adjective “important” has been added before “digital issues” to stress that the role of the board is not to sensitise, support and challenge on minor issues.

Thirdly, all experts agreed that the board should control and monitor digital-related initiatives. This subdimension has thereby been kept mainly unchanged. In fact, it has simply been added to the enablers that the board should have access to key performance indicators to be able to conduct this role. Also, in a similar way as for the advisory role,

the adjective 'important' has been added before "digital-related initiatives" to emphasise that the role of the board is not to control or monitor small digital initiatives.

Moreover, as all experts agreed that the role of the board is also to manage digital-related risks, no significant changes were made to that subdimension. The only modifications entailed adding in the "Digital enablers" level that the board occasionally monitors adherence and replacing the "continuously" by "frequently" in the "Digital savvies" level.

Finally, the subdimension "Perception by management and board." was completely transformed. Indeed, it came out during the interviews that the subdimension is not clear and does not significantly contribute to measuring the digital maturity. The new name of this subdimension is "Perception of the role of the board.". Besides, its enablers were also reformulated. Firstly, a digitally sceptic board is now a board that does not perceive that it has a role to play with regards to digital. Secondly, a digitally novice board is now a board that perceives that it has a role to play with regards to digital but is not aware of what that role consists in. Moreover, digitally neutral boards perceive that they have a role to play with regards to digital and have some insights on what that role consists in. Furthermore, a digitally enabling board perfectly understands what its role with regards to digital is while, on top of that, a digitally savvy board is aligned on it with management.

Overall, it has been decided not to add a supplementary subdimension to the role as there was not enough agreement among experts to do it.

5. Culture and leadership

Firstly, the subdimension "Openness of the board to digital." has slightly been adapted at the level of the digital savvies to include the sense of urgency and the guiding role of the board.

Secondly, the subdimension "Openness of the board to transformation." has not been modified except for the digital savvies level. Indeed, it has been added that a digital savvy board is not afraid of the consequences implied by a digital transformation and that it should be guiding the transformation.

Chapter 11: How to use the model?

This chapter will briefly explain how the board of directors digital maturity model should be used by practitioners.

As mentioned earlier, this model aims to allow boards of directors of international companies to assess their digital maturity, to identify the dimensions and specific subdimensions for which they are lagging and to put in place actions to increase their digital maturity. To optimise the model, boards should define why and how they want to use it. Indeed, methodologies might differ as different companies have different priorities.

On the one hand, boards that use the model to assess their current maturity and not specifically to increase it should use the model as follows. Firstly, they should go through all the subdimensions and use the enablers to assess their level of maturity for each subdimension. Then, they should compute the average level of maturity for each dimension. Moreover, they should compute the average and thereby overall level of maturity by using the maturity levels of the dimensions. It is essential to realise that this methodology gives each dimension the same degree of importance. Boards that give a different importance to different dimensions could weight these accordingly. Besides, the result will probably not be an integer and will thereby fall most of the time between two levels. The rule is that the board will have the maturity level which is the closest to the result. For instance, a board with a result of 2.3 will be a digital novice while a board with a maturity of 2.7 will be a digital neutral. To facilitate the use of the model, it includes a digital maturity measuring and visualisation tool available in appendix 3 “The digital maturity measuring and visualisation tool”. A board can thereby put its level of maturity for each subdimension in the tool and define the weights it gives to the different dimensions (if they differ). The tool then gives the board a maturity level measure, maps the results for the overall maturity on two graphs and for each dimension on five graphs.

On the other hand, boards that use the model to develop a specific action plan to increase their level of maturity to a certain level should use one of the two following strategies.

The first strategy, the top-down approach, involves that the board first defines the overall level of digital maturity it wants to obtain. Then, based on this, the board identifies the

specific digital maturity gap of each subdimension and prioritises the subdimensions accordingly. The board then defines specific targeted levels for each subdimension and uses the enablers of the targeted levels to develop an action plan. Finally, while implementing the action plan, the board reviews the new maturity levels of its subdimensions to adapt its specific targeted levels.

The second strategy, the bottom-up approach, implies that the board first defines the level of maturity it wants to obtain specifically for each subdimension. It then assesses the current level of maturity it has for each specific subdimension. Based on the current maturity gaps of the subdimensions, the board further prioritises these and defines an action plan to increase their level of maturity. Finally, while implementing the action plan, the board reviews the new maturity levels of its subdimensions to adapt its priorities. All in all, the board also increases its overall level of maturity.

Nonetheless, certain boards will not be eager to use one of these strategies and could, therefore, develop their own strategy.

Besides, practitioners should be aware that even though the subdimensions and dimensions are complementary, they are strongly related. Thereby, when a board works on improving one specific subdimension, this might have effects on other subdimensions. Nevertheless, such effects can only be positive as there are no negative correlations.

Furthermore, even though the result of the model is quantitative (it will be a number between one and five), several subdimensions cannot perfectly be quantified and are therefore difficult to measure in an objective way. The user of the model should thereby be consistent in its assessments.

Finally, as mentioned earlier, the model focuses on digital, but this keeps the scope wide as digital is a broad concept. Boards should thereby assess what digital specifically means for their company and focus on this when measuring their maturity.

Conclusion

Throughout this thesis the objective has been to build a consistent answer to the question *“How to measure the digital maturity of boards of directors of international companies?”*. The answer has been formulated as a board of directors digital maturity model and has been elaborated in two phases. The first phase was a secondary data collection phase that allowed to develop a first version of the model. The second phase was a primary data collection and analysis phase that allowed to improve the first version of the model.

Consequently, the structure of the thesis has been built on this dual approach and consists of four parts. In the first part existing literature has been reviewed to provide insights on boards of directors, on their role and effectiveness, on digital, on digital transformation, on the role of the board in digital transformation and, finally, on maturity models. Then, based on this literature review, a first answer to the question has been formulated as a board of directors digital maturity model. In the third part the proposition has been confronted with experts from various sectors and with different perspectives and a thorough analysis of the interviews has been conducted through Dedoose. Eventually, the model has been updated to include the results of the analysis.

A first interesting takeaway of this research is that many aspects of boards of directors have been exhaustively discussed in the literature but that very limited analysis of their role with regards to digital and digital transformation has been conducted. Besides, the literature has shown that there are many different schools of thought about what boards of directors are and what their purpose and role is.

Secondly, another insightful finding is that digital is a broad concept that has been defined in many ways and that it is a trendy name encompassing several dimensions. All in all, it can be concluded that it will continue changing our society for many years as it has done for a few decades.

Moreover, it has been found that companies have been impacted by digital transformation for a long period. Nevertheless, it is becoming even more important as its speed and range are growing, it is disrupting more and more companies, it is a highly difficult leadership

challenge, it requires large investments and its success today defines the profits of companies tomorrow.

Furthermore, the thesis has shown that digital and digital transformation should be an essential aspect of the role of boards of directors. Both literature and field research showed that boards of directors are increasingly taking digital and its impacts seriously but that they are not adapting to it quickly enough. In fact, this has led to the idea of building a practical tool for boards of directors to allow them to measure their current digital maturity and to help them find ways to increase it.

Thereby, thanks to the integration of, on the one hand, both academic and managerial theories and, on the other hand, practical recommendations from experts, a rigorous, exhaustive and practical model has been built. This model is called “the board of directors digital maturity model” and consists of five maturity levels, five dimensions, twenty subdimensions and one hundred enablers. It is accompanied by a “digital maturity measuring and visualisation tool” that simplifies the practical use of the model by boards of directors. The five maturity levels that allow differentiating boards in terms of digital maturity are the digital sceptics, digital novices, digital neutrals, digital enablers and digital savvies. The five dimensions on which the maturity levels are measured are the digital capital, the digital structure, the processes, the role and the culture and leadership.

Additionally, the confrontation of the literature with the experts allowed understanding the importance of several aspects of the digital maturity of boards of directors and further contributing to the literature. Indeed, a first essential insight is that even though all boards of directors need to have a minimum level of digital maturity, they do not all need to have the same level because companies have specific needs depending on their size, sector, etc. Secondly, another important highlight is that boards of directors need a complementary panel of profiles as their role is related to many different dimensions. Thirdly, as it has continuously been emphasised by the experts that boards of directors are non-executive, board members should keep a general, long-term helicopter view and should not get involved in the practical aspects of digital transformation. Besides, it is crucial for boards of directors to understand that digital transformation is not about making the organisation more digital but is about seizing the opportunities that digitalisation brings

along to preserve the long-term health of their companies. Finally, it should be realised that companies are financially driven and that without the financial incentives and means, having a digitally mature board of directors is not enough to make an organisation succeed in the digital era.

Besides these theoretical contributions, the main implication of this thesis is that practitioners now have a first practical tool that they can use to sensitise boards to digital, to measure where a board stands in the digital maturity model and to increase a board's digital maturity. This tool can also be used as a checklist when creating a board of directors.

Overall, there are also some limitations to the research that has been presented in this thesis. Firstly, the scope of the model, digital, is broad, which makes it subject to diversity of interpretation, more open to ambiguity and more difficult to use for boards of directors. Also, the model has been designed for international companies regardless of their sector, which makes it usable by many companies but not specific to one industry or sector. It is thereby less easy to use for a company operating in a certain sector than a model which would be completely tailored to that sector. Besides, the model has been confronted with only eight experts. Even though a fair number of sectors is represented, the opinions of experts with various relations to the subject are included and the model has been endorsed by all experts, the panel is too small to obtain completely rigorous conclusions. Lastly, the final model has not been tested on a board of directors and thereby lacks proof of concept.

These limitations open the path to further research on the digital maturity of boards of directors. Indeed, it would be interesting to gather insights from a larger panel of experts, to test the model on boards of directors of international companies and to create benchmarks for several sectors or types of companies to help firms compare themselves with their counterparts. Another possibility would be to develop sector-specific versions of the model.

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Appendices

Appendix 1: The proposed digital maturity model

Digital Maturity Model			Levels				
			Digital sceptics	Digital novices	Digital neutrals	Digital enablers	Digital savvies
			These boards have no digital maturity and are unable to carry out their digital-related role. They do not realise the importance of digital and understand it insufficiently to act.	These boards have limited digital maturity and have a very limited ability to carry out their digital-related role. They partly acknowledge the importance of digital but only take limited actions to cope with it.	These boards have average digital maturity and have the ability to carry out basic digital-related functions. They acknowledge the importance of digital and take several sporadic actions to cope with it.	These boards have strong digital maturity and have a good ability to carry out their digital-related role. They realise the potential of digital and have implemented many consistent actions to cope with it.	These boards have full digital maturity and have full ability to carry out their digital-related role. They fully realise the potential of digital and digital transformation is their priority.
Dimensions	Subdimensions						
Digital capital	The aggregation of the individual digital capabilities of the board members.				Some board members have no or basic understanding, some board members have an average understanding and some board members have a strong understanding of digital, its technologies and its potential. Some board members have experience in digital businesses.	All board members have at least an average understanding, some board members have a strong understanding and some board members have an outstanding understanding of digital, its technologies and its potential. Most board members have experience in digital businesses.	All board members have at least a strong understanding and some board members have an outstanding understanding of digital, its technologies and its potential. All board members have experience in digital businesses, some have mainly such experience.
		Digital knowledge: knowledge and understanding of digital technologies and solutions.	No board member has an understanding of digital, its technologies or its potential. No board member has experience in digital businesses.	Some board members have a basic understanding of digital, its technologies and its potential. No board member has experience in digital businesses.			
		Digital skills: digital proficiencies developed through training or hands-on experience, such as data analysis, social media expertise, mobile expertise, user experience design, online marketing, network and information security and programming.	No board member has digital skills. No board member has experience with digital technologies.	Some board members have basic digital skills. No board member has experience with digital technologies.	Some board members have no or basic digital skills, some board members have average digital skills and some board members have strong digital skills. Some board members have experience with digital technologies.	All board members have at least average digital skills, some board members have strong digital skills and some board members are digital experts. Most board members have experience with digital technologies.	All board members have at least a strong level of digital skills and some board members are digital experts. All board members have experience with digital technologies, some have mainly such experience.
		Digital abilities: innate traits or talents that enable the board to carry out digital-related tasks, such as intellectual curiosity, understanding human and customer nature, vision, passion and purpose.	No board member has significant digital-enabling abilities specifically enabling the board to lead on digital issues.	Some board members have a few digital-enabling abilities but these are not enough to enable leadership on digital issues.	Some board members have no significant digital-enabling abilities, some board members have average digital-enabling abilities and some board members have strong digital-enabling abilities.	All board members have at least average digital-enabling abilities, some board members have strong digital-enabling abilities and some board members have outstanding digital-enabling abilities allowing them to lead on digital issues.	All board members have at least strong digital-enabling abilities and some board members have outstanding digital-enabling abilities allowing them to lead on digital issues.
		Digital network: digital-related connections or contacts.	No board member has digital connections.	Some board members have a few digital connections.	Some board members have no digital connections, some board members have a few digital connections and some board members have many digital connections.	All board members have at least a few digital connections, some board members have many digital connections and some board members have extensive digital networks.	All board members have many digital connections and some board members have extensive digital networks.
Digital structure	Structures that enable the board to effectively carry out its digital-related role.	Digital director: one or more board members with a digital background and thereby a specific responsibility for digital.	There is no digital director. Responsibilities with regards to digital are not defined. There are no decision-making guidelines for digital-related issues.	There is no digital director. Responsibilities with regards to digital are informally allocated. There are no formal decision-making guidelines for digital-related issues.	There is no digital director. Responsibilities with regards to digital are formally defined. There are basic decision-making guidelines for digital-related issues.	There is one digital director. Responsibilities with regards to digital are formally defined. Decision-making guidelines for digital-related issues are formally defined.	There are one or more digital directors. Responsibilities with regards to digital are formally defined and well-known. Decision-making guidelines for digital-related issues are formally defined and well-known.
		Digital committee: a board committee with a specific focus on digital.	There is no digital committee.	There is no digital committee, but the board performs some sporadic tasks a digital committee would perform.	There is no digital committee, but the board performs most of the tasks the digital committee would perform.	There is a digital committee, but this digital committee has limited interaction with the rest of the board and other committees. It is not perceived as essential.	There is a digital committee which is continuously interacting with the rest of the board and other committees. It enhances decision-making on digital-related issues by communicating the right information at the right time to the board (potentially through the digital director). It is perceived as essential.
		Digital advisory board: an advisory board with a specific focus on digital.	There is no advisory board.	There is an advisory board but digital is not a specific dimension of its role.	There is an advisory board for which digital is a significant dimension of its role.	There is an advisory board for which digital is one of the core dimensions of its role.	There is a digital advisory board.

Processes	Processes that enable the board to effectively carry out its digital-related role.	Digital committee selection and composition process.	There is no digital committee selection/composition process.	There is a basic digital committee selection/composition process that does not formally take the digital capital needed into account and that is applied inconsistently.	There is a well-defined digital committee selection/composition process that formally takes the digital capital needed into account but that is applied inconsistently.	There is a well-defined digital committee selection/composition process that formally takes the digital capital needed into account and that is applied consistently.	There is a well-defined digital committee selection/composition process that formally takes the digital capital needed into account by using a tool to assess the digital capital gap. The process is applied consistently and is continuously assessed and improved.
		Digital director selection and development process.	There is no digital director selection/development process.	There is a basic digital director selection/development process that does not have formally defined criteria and that is applied inconsistently.	There is a well-defined digital director selection/development process that is based on formally defined selection/development criteria but that is applied inconsistently.	There is a well-defined digital director selection/development process that is based on formally defined selection/development criteria and that is applied consistently.	There is a well-defined digital director selection/development process that uses a specific tool to ensure the right set of digital skills is obtained. The process is applied consistently and is continuously assessed and improved.
		Director selection and development process.	Digital capital is not taken into account in the director selection/development process.	Digital capital is informally taken into account in the director selection/development process.	Digital capital is formally taken into account in the director selection/development process but its importance is limited.	Digital capital is formally taken into account in the director selection/development process through the use of a digital capabilities framework identifying the digital capital gap.	Digital capital is one of the key formulated director selection/development criteria. The process is applied consistently and both the process and the digital capabilities framework are continuously assessed and improved.
		Director digital induction and training process.	No digital-related induction/training is provided to directors.	Limited digital-related induction/training is provided to directors.	Frequent informal digital-related induction/training is provided to directors.	Frequent informal and formal digital-related induction/training is provided to directors as part of a training/induction programme.	There is an extensive, tailored and comprehensive digital induction/training framework and process on which the digital training/induction programme is based
		CEO selection and development process.	Digital capital is not taken into account in the CEO selection/development process.	Digital capital is informally taken into account in the CEO selection/development process.	Digital capital is formally taken into account in the CEO selection/development process but its importance is limited.	Digital capital is formally taken into account in the CEO selection/development process through the use of a digital capabilities framework.	Digital capital is formally taken into account in the CEO selection/development process through the use of a digital capabilities framework and is formulated as one of the key CEO selection/development criteria.
		Meeting practices of the board and its committees.	The board and its committees have only traditional meeting practices. These are based essentially on emails, calls and face-to-face meetings.	The board and its committees have mainly traditional meeting practices but also a few digital meeting practices. Digital meeting tools are difficult to use for most board members.	The board and its committees have several traditional meeting practices and several digital meeting practices. Some board members master digital meeting tools very well while others are still struggling.	The board and its committees have complementary traditional and digital meeting practices. Digital meeting tools are well mastered by all the board members.	The board and its committees have integrated traditional and digital meeting practices. They make use of digital meeting tools enabling practices such as pre- and post-meeting questionnaires (SurveyMonkey, Typeform, and Google Forms), virtual meetings (Skype, Hangouts, or Zoom), instant messaging (Yammer, Slack, and Flowdock), resource management (SharePoint, OneDrive, Google Drive, and Dropbox), documentation (PowerPoint and Google Slides) and project management (Trello, Basecamp, and JIRA).

Role	The board's accomplishment of its digital-related role.	Developing the digital vision and strategy.	The board is not involved in the development of a digital vision and strategy.	The board is not involved in the development of a digital vision and strategy but is aware of their existence and knows what these consist in.	The board assesses and validates the digital vision and strategy. The board verifies that the digital strategy is aligned with the purpose of the company, its value drivers and the expectations of its stakeholders.	The board is involved in the development of the digital vision and strategy and assesses and validates these. The board ensures that the digital strategy is aligned with the purpose of the company, its value drivers and the expectations of its stakeholders.	The board establishes the digital vision with the management and actively contributes to building the digital strategy. The board ensures that the digital strategy is aligned with the purpose of the company, its value drivers and the expectations of its stakeholders.
		Advising on digital.	The board does not sensitise or advise management on digital issues.	The board does not specifically sensitise or advise management on digital issues but performs its general advisory role.	The board occasionally specifically sensitises and advises management on digital issues.	The board frequently specifically sensitises and advises management on digital issues.	The board continuously sensitises and advises management on digital issues.
		Controlling and monitoring digital-related initiatives.	The board does not monitor digital-related initiatives and does not control their progress.	The board does not specifically monitor digital-related initiatives or control their progress but monitors and controls the organisation's initiatives in general.	The board occasionally monitors digital-related initiatives and controls their progress.	The board frequently monitors digital-related initiatives and controls their progress.	The board continuously monitors digital-related initiatives and controls their progress.
		Managing digital-related risks.	The board is not involved in the definition of a digital risk appetite or tolerance and is not aware of these.	The board is not involved in the definition of a digital risk appetite or tolerance but is aware of their existence and knows what they consist in.	The board assesses and validates the digital risk appetite and tolerance. The board verifies that the digital risk appetite and tolerance are aligned with the overall risk appetite and tolerance of the company.	The board is involved in the development of the digital risk appetite and tolerance and assesses and validates these. The board ensures that the digital risk appetite and tolerance are aligned with the overall risk appetite and tolerance of the company.	The board contributes to the development of the digital risk appetite and tolerance, assesses and validates these and monitors adherence on an ongoing basis. The board ensures that the digital risk appetite and tolerance are aligned with the overall risk appetite and tolerance of the company.
		Perception by management and board.	The board is not perceived by itself and by management as playing a role in digital.	The role of the board in digital is neither perceived as value-adding or important by management and board.	The role of the board in digital is perceived as value-adding but not important by management and board. Management and board are not aligned on what the role of the board in digital is.	The role of the board in digital is perceived as value-adding and important by management and board. Management and board are not completely aligned on what the role of the board in digital is.	The role of the board in digital is perceived as essential by management and board. Management and board are aligned on what the role of the board in digital is.
Culture and leadership	The board's approach to digitally driven innovation.	Openness of the board to digital.	Non-digital savviness makes the board reluctant of digital initiatives. The board sends signals against digital initiatives.	The board is tolerating digital initiatives but is not supporting them.	The board is favourable to digital initiatives and is supporting them.	The board is initiating and supporting digital initiatives. The board sends signals favouring digital initiatives.	The board is leading the development of digital initiatives. The board puts in place incentive structures stimulating digital initiatives.
		Openness of the board to transformation.	Old board cultures make the board reluctant of change of the status quo. The board sends signals favouring the status quo.	The board is tolerating transformation but is not supporting it.	The board is favourable to transformation and is supporting it.	The board is initiating and supporting transformation. The board sends signals favouring change.	The board is leading transformation. The board puts in place incentive structures stimulating transformation.

Appendix 2: The final digital maturity model

Digital Maturity Model			Levels				
			Digital sceptics	Digital novices	Digital neutrals	Digital enablers	Digital savvies
			These boards have no digital maturity and are unable to carry out their digital-related role. They do not realise the importance of digital and understand it insufficiently to act.	These boards have limited digital maturity and have a very limited ability to carry out their digital-related role. They partly acknowledge the importance of digital but only take limited actions to cope with it.	These boards have average digital maturity and have the ability to carry out basic digital-related functions. They acknowledge the importance of digital and take several sporadic actions to cope with it.	These boards have strong digital maturity and have a good ability to carry out their digital-related role. They realise the potential of digital and have implemented many consistent actions to cope with it.	These boards have full digital maturity and have full ability to carry out their digital-related role. They fully realise the potential of digital and digital transformation is their priority.
Dimensions		Subdimensions					
Digital capital	The aggregation of the individual digital capabilities of the board members.		No board member has an understanding of digital, its impacts and the risks and opportunities it creates. No board member has worked in a digital business or has experienced a digital transformation.	Some board members have a basic understanding of digital, its impacts and the risks and opportunities it creates. No board member has worked in a digital business or has experienced a digital transformation.	Some board members have no understanding, some board members have a basic understanding and some board members have a strong understanding of digital, its impacts and the risks and opportunities it creates. Some board members have worked in digital businesses or have experienced a digital transformation.	All board members have at least a basic understanding, some board members have a strong understanding and some board members have an outstanding understanding of digital, its impacts and the risks and opportunities it creates. Most board members have worked in digital businesses or have experienced a digital transformation.	All board members have at least a strong understanding and some board members have an outstanding understanding of digital, its impacts and the risks and opportunities it creates. All board members have worked in digital businesses or have experienced a digital transformation, some have mainly such experience.
		Digital knowledge: knowledge and understanding of digital, its impacts and the risks and opportunities it creates. Digital skills: digital proficiencies developed through training or hands-on experience, such as data analysis, social media expertise, mobile expertise, user experience design, online marketing, network and information security and programming.	No board member has digital skills. No board member has experience with digital technologies.	Some board members have basic digital skills. No board member has experience with digital technologies.	Some board members have no digital skills, some board members have basic digital skills and some board members have average digital skills. Some board members have experience with digital technologies.	All board members have at least basic digital skills, some board members have average digital skills and some board members have strong digital skills. Most board members have experience with digital technologies.	All board members have at least average digital skills, some board members have strong digital skills and some board members are digital experts. All board members have experience with digital technologies, some have mainly such experience.
		Digital abilities: innate traits or talents that enable the board to carry out digital-related tasks, such as intellectual curiosity, understanding human and customer nature, vision, passion and purpose.	No board member has significant digital-enabling abilities specifically enabling the board to guide on digital issues.	Some board members have a few digital-enabling abilities but these are not sufficient to enable leadership on digital issues.	Some board members have no significant digital-enabling abilities, some board members have basic digital-enabling abilities and some board members have strong digital-enabling abilities.	All board members have at least basic digital-enabling abilities, some board members have strong digital-enabling abilities and some board members have outstanding digital-enabling abilities allowing them to guide on digital issues.	All board members have at least strong digital-enabling abilities and some board members have outstanding digital-enabling abilities allowing them to guide on digital issues.
		Digital network: digital-related connections or contacts.	No board member has digital connections.	Some board members have a few digital connections.	Some board members have no digital connections, some board members have a few digital connections and some board members have many digital connections.	All board members have at least a few digital connections, some board members have many digital connections and some board members have extensive digital networks.	All board members have many digital connections and some board members have extensive digital networks.
		Digital director: one or more board members with a strong digital capital and thereby a specific responsibility for digital.	There is no digital director. Responsibilities with regards to digital are not defined.	There is no digital director. Responsibilities with regards to digital are informally allocated.	There is no digital director. Responsibilities with regards to digital are formally defined.	There is one digital director. Responsibilities with regards to digital are formally defined.	There are one or more digital directors. Responsibilities with regards to digital are formally defined and well-known.
Digital structure	Structures that enable the board to effectively carry out its digital-related role.						There is a digital committee which is continuously interacting with the rest of the board and other committees. It enhances decision-making on digital-related issues by communicating the right information at the right time to the board and the other committees.
		Digital committee: a board committee with a specific focus on digital.	There is no digital committee.	There is no digital committee, but the board performs some sporadic tasks a digital committee would perform.	There is no digital committee, but the board performs most of the tasks a digital committee would perform.	There is a digital committee, but this digital committee has limited interaction with the rest of the board and other committees.	

Processes	Processes that enable the board to effectively carry out its digital-related role.	Digital committee selection and composition process.	There is no digital committee selection/composition process.	There is a basic digital committee selection/composition process that does not formally take the digital capital needed into account and that is applied inconsistently.	There is a well-defined digital committee selection/composition process that formally takes the digital capital needed into account but that is applied inconsistently.	There is a well-defined digital committee selection/composition process that formally takes the digital capital needed into account and that is applied consistently.	There is a well-defined digital committee selection/composition process that formally takes the digital capital needed into account by using a tool to assess the digital capital gap. The process is applied consistently and is continuously assessed and improved.
		Digital director selection and development process.	There is no digital director selection/development process.	There is a basic digital director selection/development process that does not have formally defined criteria and that is applied inconsistently.	There is a well-defined digital director selection/development process that is based on formally defined selection/development criteria but that is applied inconsistently.	There is a well-defined digital director selection/development process that is based on formally defined selection/development criteria and that is applied consistently.	There is a well-defined digital director selection/development process that uses a specific tool to ensure the right set of digital skills is obtained. The process is applied consistently and is continuously assessed and improved.
		Director selection and development process.	Digital capital is not taken into account in the director selection/development process.	Digital capital is informally taken into account in the director selection/development process.	Digital capital is formally taken into account in the director selection/development process but its importance is limited.	Digital capital is formally taken into account in the director selection/development process through the use of a digital capabilities framework identifying the digital capital gap.	Digital capital is one of the key formulated director selection/development criteria. The process is applied consistently and both the process and the digital capabilities framework are continuously assessed and improved.
		Director digital induction and training process.	No digital-related induction/training is provided to directors.	Limited digital-related induction/training is provided to directors.	Frequent informal digital-related induction/training is provided to directors.	Frequent informal and formal digital-related induction/training is provided to directors as part of a training/induction programme.	There is an extensive, tailored and comprehensive digital induction/training framework and process on which the digital-related training/induction programme is based.
		CEO selection and development process.	Digital capital is not taken into account in the CEO selection/development process.	Digital capital is informally taken into account in the CEO selection/development process.	Digital capital is formally taken into account in the CEO selection/development process but its importance is limited.	Digital capital is formally taken into account in the CEO selection/development process through the use of a digital capabilities framework.	Digital capital is formally taken into account in the CEO selection/development process through the use of a digital capabilities framework and is formulated as one of the key CEO selection/development criteria.
		Meeting practices of the board and its committees.	The board and its committees have only traditional meeting practices. These are based essentially on emails, calls and face-to-face meetings.	The board and its committees have mainly traditional meeting practices but also a few basic digital meeting practices. Digital meeting tools are difficult to use for most board members.	The board and its committees have several traditional meeting practices and several digital meeting practices. Some board members master digital meeting tools very well while others are still struggling.	The board and its committees have complementary traditional and digital meeting practices. Digital meeting tools are well mastered by all the board members. The board's environment and way of working is adapting to the digital era.	The board and its committees have integrated traditional and digital meeting practices. They make use of the latest digital meeting tools such as pre- and post-meeting questionnaires (SurveyMonkey, Typeform, and Google Forms), virtual meetings (Skype, Hangouts, or Zoom), instant messaging (Yammer, Slack, and Flowdock), resource management (SharePoint, OneDrive, Google Drive, and Dropbox), documentation (PowerPoint and Google Slides) and project management (Trello, Basecamp, and JIRA). The board's environment and way of working is adapted to the digital era.
		Self-assessment of the board and digital committee.	The board and the digital committee do not conduct a self-assessment.	The board and the digital committee conduct an informal self-assessment.	The board and the digital committee conduct a formalised self-assessment with digital-related criteria but not on a regular basis.	The board and the digital committee conduct a formalised periodic self-assessment with digital-related criteria.	The board and the digital committee conduct a formalised periodic self-assessment that focuses on digital.

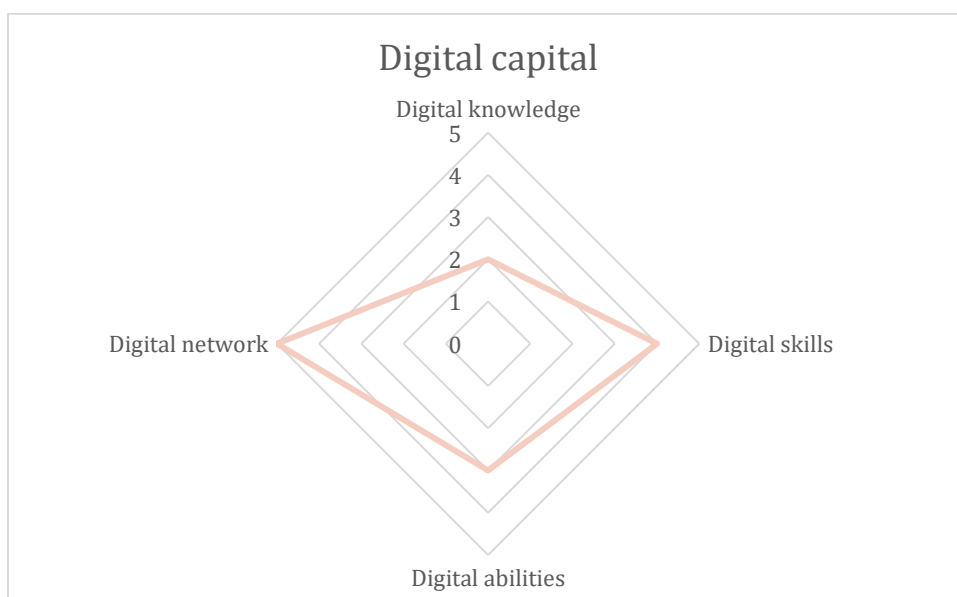
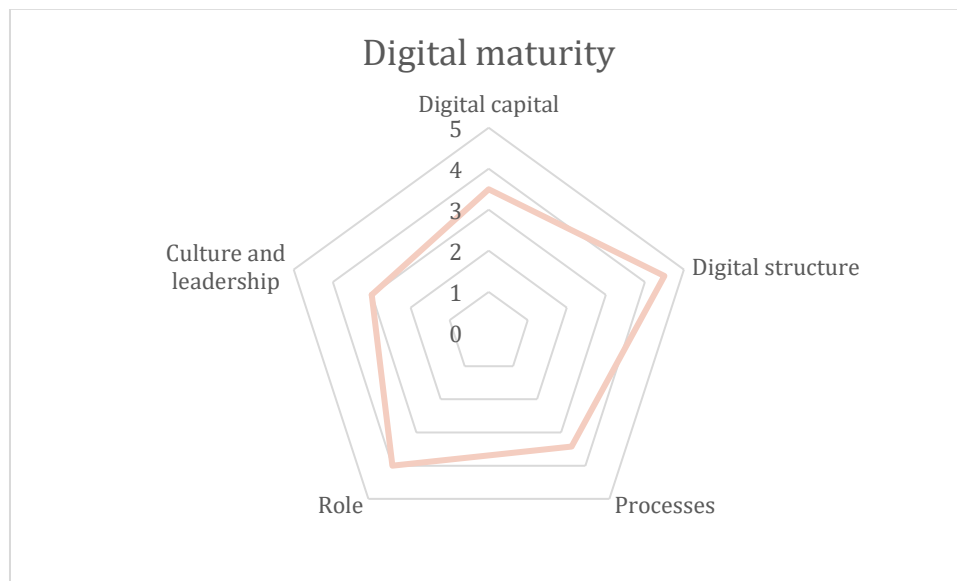
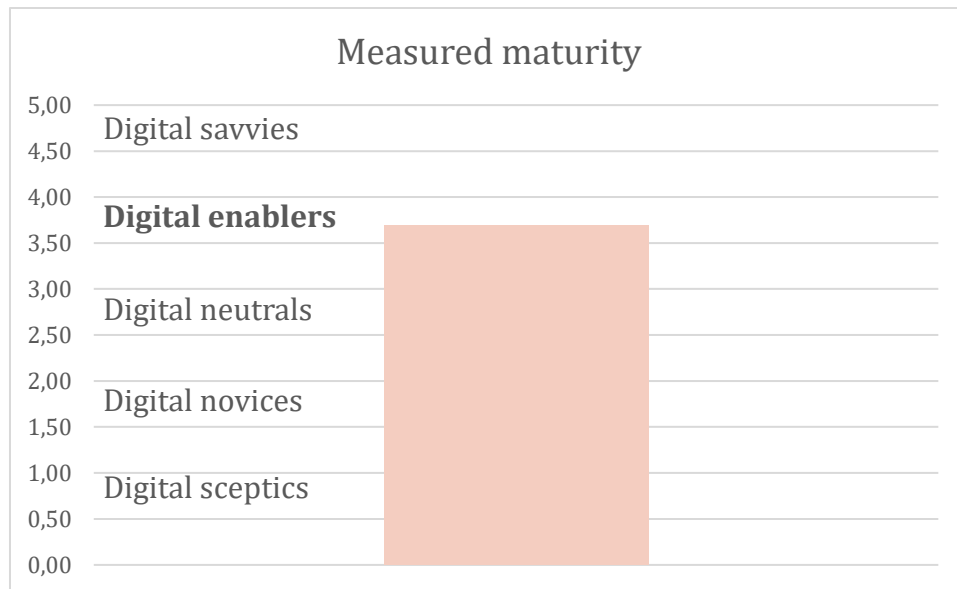
Role	The board's accomplishment of its digital-related role.	Developing the digital vision and guiding the digital strategy.	The board is not involved in the development of a digital vision and strategy.	The board does not contribute to the development of a digital vision and strategy, does not assess or validate these but is aware of their existence and knows what these consist in.	The board assesses and validates the digital vision and strategy. The board verifies that the digital strategy is aligned with the purpose of the company, its value drivers and the expectations of its stakeholders.	The board contributes to the development of the digital vision and assesses and validates the digital strategy. The board ensures that the digital strategy is aligned with the purpose of the company, its value drivers and the expectations of its stakeholders.	The board establishes the digital vision with the management and actively guides the management in building the digital strategy. The board ensures that the digital strategy is aligned with the purpose of the company, its value drivers and the expectations of its stakeholders.
		Guiding on digital.	The board does not sensitise, support or challenge management on important digital issues.	The board does not specifically sensitise, support or challenge management on important digital issues but performs a general guiding role.	The board occasionally specifically sensitises, supports and challenges management on important digital issues.	The board frequently specifically sensitises, supports and challenges management on important digital issues.	The board continuously specifically sensitises, supports and challenges management on important digital issues.
		Controlling and monitoring digital-related initiatives.	The board does not monitor important digital-related initiatives and does not control their progress.	The board does not specifically monitor important digital-related initiatives or control their progress but monitors and controls the organisation's initiatives in general.	The board occasionally monitors important digital-related initiatives and controls their progress.	The board frequently monitors important digital-related initiatives and controls their progress. The board frequently obtains related key performance indicators.	The board continuously monitors important digital-related initiatives and controls their progress. The board has access to continuously updated key performance indicators.
		Managing digital-related risks.	The board is not involved in the definition of a digital risk appetite or tolerance and is not aware of these.	The board is not involved in the definition of a digital risk appetite or tolerance but is aware of their existence and knows what they consist in.	The board assesses and validates the digital risk appetite and tolerance. The board verifies that the digital risk appetite and tolerance are aligned with the overall risk appetite and tolerance of the company.	The board contributes to the development of the digital risk appetite and tolerance, assesses and validates these and occasionally monitors adherence. The board ensures that the digital risk appetite and tolerance are aligned with the overall risk appetite and tolerance of the company.	The board contributes to the development of the digital risk appetite and tolerance, assesses and validates these and frequently monitors adherence. The board ensures that the digital risk appetite and tolerance are aligned with the overall risk appetite and tolerance of the company.
		Perception of the role of the board.	The board does not perceive that it has a role to play with regards to digital.	The board perceives that it has a role to play with regards to digital but is not aware of what that role consists in.	The board perceives that it has a role to play with regards to digital and has some insights on what that role consists in.	The board perfectly understands what its role with regards to digital is.	The board perfectly understands what its role with regards to digital is and is aligned on this with management.
Culture and leadership	The board's approach to digitally driven innovation.	Openness of the board to digital.	Non-digital savviness makes the board reluctant of digital initiatives. The board sends signals against digital initiatives.	The board is tolerating digital initiatives but is not supporting them.	The board is favourable to digital initiatives and is supporting them.	The board is initiating and supporting digital initiatives. The board sends signals favouring digital initiatives.	The board senses the urgency of implementing digital initiatives and is guiding management on key digital initiatives. The board puts in place incentive structures stimulating digital initiatives.
		Openness of the board to transformation.	Old board cultures make the board reluctant of change of the status quo. The board sends signals favouring the status quo.	The board is tolerating transformation but is not supporting it.	The board is favourable to transformation and is supporting it.	The board is initiating and supporting transformation. The board sends signals favouring change.	The board is guiding transformation. The board puts in place incentive structures stimulating transformation. The board is not afraid of the consequences implied by a digital transformation.

Appendix 3: The digital maturity measuring and visualisation tool

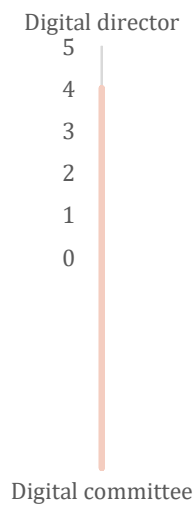
Digital maturity measuring tool								
Subdimensions		Results	Dimensions	Results	Weights	Measured maturity	Condition	Maturity level
Digital knowledge		0	Digital capital	0	1	0	Up to 1.5	Digital sceptics
Digital skills		0						
Digital abilities		0						
Digital network		0						
Digital director		0	Digital structure	0	1		From 1.5 to 2.5	Digital novices
Digital committee		0						
Digital committee selection and composition process		0						
Digital director selection and development process		0						
Director selection and development process		0	Processes	0	1		From 2.5 to 3.5	Digital neutrals
Director digital induction and training process		0						
CEO selection and development process		0						
Meeting practices of the board and its committees		0						
Self-assessment of the board and digital committee		0	Role	0	1		From 3.5 to 4.5	Digital enablers
Developing the digital vision and guiding the digital strategy		0						
Guiding on digital		0						
Controlling and monitoring digital-related initiatives		0						
Managing digital-related risks		0	Culture and leadership	0	1		From 4.5 to 5	Digital savvies
Perception of the role of the board		0						
Openness of the board to digital		0						
Openness of the board to transformation		0						

Example of measurement and visualisation of digital maturity

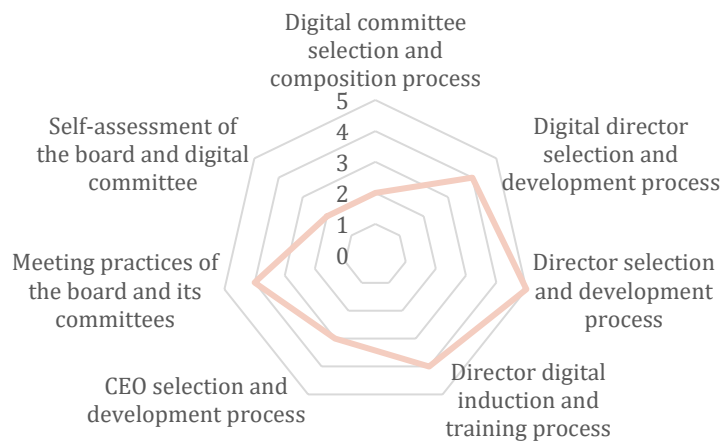
Digital maturity measuring tool								
Subdimensions		Results	Dimensions	Results	Weights	Measured maturity	Condition	Maturity level
Digital knowledge		2	Digital capital	3,5	1	3,69	Up to 1,5	Digital sceptics
Digital skills		4						
Digital abilities		3						
Digital network		5	Digital structure	4,5	1		From 1,5 to 2,5	Digital novices
Digital director		4						
Digital committee		5						
Digital committee selection and composition process		2	Processes	3,4	1		From 2,5 to 3,5	Digital neutrals
Digital director selection and development process		4						
Director selection and development process		5						
Director digital induction and training process		4						
CEO selection and development process		3						
Meeting practices of the board and its committees		4	Role	4	1	From 3,5 to 4,5	Digital enablers	
Self-assessment of the board and digital committee		2						
Developing the digital vision and guiding the digital strategy		3						
Guiding on digital		5						
Controlling and monitoring digital-related initiatives		3						
Managing digital-related risks		4	Culture and leadership	3	1	From 4,5 to 5	Digital savvies	
Perception of the role of the board		5						
Openness of the board to digital		4						
Openness of the board to transformation		2						



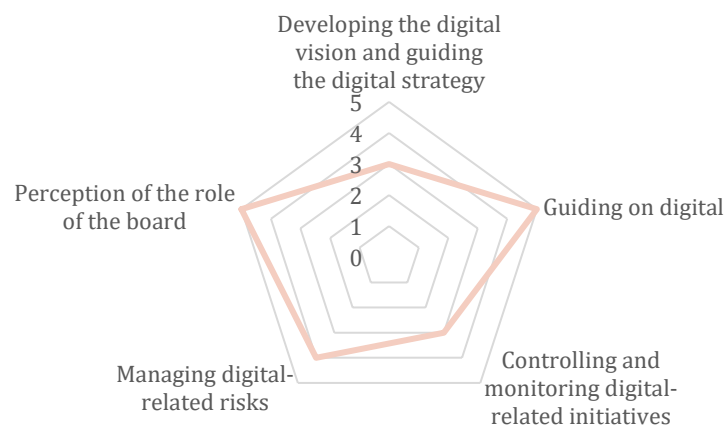
Digital structure



Processes



Role





Appendix 4: Code weight statistics

Code weight statistics				
Codes	Minimum weight	Average weight	Range	Standard deviation
Importance of digital for the company	5	5	0	0
Digital maturity model relevance	4	4.8	1	0.5
Strategizing	4	4.8	1	0.4
Advising	1	3.3	4	1.9
Controlling and monitoring digital initiatives	5	5	0	0
Managing digital-related risks	5	5	0	0
Digital knowledge	4	4.8	1	0.4
Digital skills	1	3.2	4	1.2
Digital abilities	5	5	0	0
Digital network	3	4.6	2	0.8
Digital director	3	4	2	0.5
Digital committee	1	3.5	4	1.8
Digital advisory board	1	2.4	2	0.9
Processes of the selection committee	5	5	0	0
Meeting practices	2	4	3	1.2
Role perception	5	5	0	0
Culture and leadership	5	5	0	0
Impact of culture and leadership on a company	3	4	2	0.7
Different maturity levels needed	1	3.5	4	1.8

Appendix 5: Interview guide

Part I: Introduction

- A. Introduction to the thesis
- B. Introduction to the expert
- C. Presentation of the company

Part II: Digital

- A. The importance of digital for the company
 - a) How important is digital for the company?
 - b) Are there digital initiatives going on in the company?
 - c) Is the company undergoing a digital transformation?
 - d) Is digital a key issue in the role of your CEO?
- B. Board of directors and digital
 - a) What is the role of the board of directors with regards to digital issues/digital transformation?
 - b) What enables the board of directors to conduct its role in digital effectively?
 - c) Should different companies have different levels of board digital maturity?

Part III: Digital maturity model

- A. Digital capital
 - a) Is knowledge of digital a key enabler of digitally mature boards of directors? What should be the level of digital knowledge?
 - b) Are digital skills a key enabler of digitally mature boards of directors? What should be the level of digital skills/expertise?
 - c) Are digital abilities a key enabler of digitally mature boards of directors? What abilities are essential for board members on digital?

- d) Is having a digital network a key enabler of digitally mature boards of directors? How to measure the digitality of the network?

B. Digital structure

- a) Is having one or more digital directors a key enabler of digitally mature boards of directors? How many digital directors should there be? What should be the role of the digital director?
- b) Is having a digital committee a key enabler of digitally mature boards of directors? What should be the role of this committee?
- c) Should a digitally mature board of directors have a digital advisory board?

C. Processes

- a) Do you believe these processes are key enablers of digitally mature boards of directors? What would make such process enablers of digital maturity?
- b) Do you believe meetings practices are a key enabler of digitally mature boards of directors? Which meeting practices are essential for you in a digitally mature board?

D. Role

- a) What is the role of the board of directors with regards to the digital vision and strategy? To what extent should it be involved?
- b) What is the role of the board of directors with regards to advising on digital? To what extent should it be involved?
- c) What is the role of the board of directors with regards to controlling and monitoring digital-related initiatives? To what extent should it be involved?
- d) What is the role of the board of directors with regards to managing digital-related risks? To what extent should it be involved?
- e) Is the way the role of the board in digital is perceived by its members and by the CEO impacting the board in conducting its role in digital?

E. Culture and leadership

a) Is the approach of the board to digital impacting the way digital is approached by the company? What makes a board open to digital?

b) Is the approach of the board to transformation impacting the way transformation is approached by the company? What makes a board open to transformation?

F. Do you believe there are other dimensions that are not included in the model that could measure the digital maturity of the board of directors?

Appendix 6: Interview transcripts

1. Yvan De Cock: 08/04/2019

Part I: Introduction

Est-ce que vous pourriez vous introduire et expliquer votre carrière et expérience?

J'ai commencé comme avocat, car j'ai fait le droit et l'économie. J'ai donc travaillé dans un cabinet d'avocat pendant trois ans. Puis j'ai été conseiller juridique et puis j'ai été engagé à la Générale de Banque où j'ai eu une carrière pendant 33 ans, successivement chez Générale de Banque, Fortis et BNP Paribas Fortis. J'ai travaillé essentiellement avec des entreprises. Donc, dans les crédits à l'exportation, en corporate banking, corporate finance et project finance. J'ai eu aussi une époque où j'ai été plus impliqué dans le retail, notamment quand j'ai été CEO de notre filiale en Turquie. Là, on avait une banque universelle avec les entreprises comme le retail. Les dernières années, entre 2011 et 2018, j'ai été membre du comité exécutif et donc, responsable pour les entreprises en Belgique et les deux dernières années j'ai été conseiller du CEO. Entre temps, j'ai encore quelques mandats pour la banque: je suis président du conseil d'administration de BNP Paribas Fortis Factor en Belgique, je suis membre du conseil d'administration de notre filiale en Turquie (membre du comité d'audit et de compliance). Et je préside une société d'Asset Management à Luxembourg.

Part II: Digital

Quelle est l'importance du digital pour BNP Paribas Fortis?

Il y a un aspect externe, client, toutes les applications que vous connaissez, qu'on est en train de développer; c'est extrêmement important car le client le demande. Spécialement la jeune génération, mais également les générations plus âgées.

En deuxième lieu, cela permet dans un moment où la rentabilité des banques est sous pression d'alléger les coûts. On peut fermer des agences et remplacer par des applications digitales. Donc, il y a un aspect externe 'customer convenience' et un aspect interne 'améliorer les processus, le fonctionnement et réduire les coûts'.

Quel est le rôle du conseil d'administration par rapport au digital?

Les rôles classiques d'un conseil d'administration. Premièrement, c'est déterminer avec le management la stratégie de la banque. Bien évidemment dans la stratégie aujourd'hui

le digital est essentiel. Il faut donc, en tant que conseil d'administration, poser les bonnes questions. Le conseil d'administration doit s'assurer que le comité exécutif s'occupe bien du digital et challenger ce qu'il fait. Déterminer la stratégie digitale fait partie intégrante de la stratégie et donc, cela fait partie du rôle du conseil d'administration. Le conseil d'administration doit aussi prendre les décisions avec le management car les ressources sont limitées. Il faut choisir comment et où on va investir. Ils doivent donc faire les grands choix d'investissements. Les grands choix stratégiques doivent être présentés par le comité exécutif et validés par le conseil d'administration.

Le second rôle est de contrôler que l'exécution de ce qu'on a décidé est correctement faite. Aujourd'hui, ce qui est très important c'est la cybersécurité. Aujourd'hui, si une banque travaille avec des tierces parties, des Fintechs, etc., lance une application, est-ce que la cybersécurité est garantie? Les régulateurs font très attention à ce que les conseils d'administration s'occupent de ça. Voir si effectivement dans la banque la sécurité informatique est assurée. Le business pousse souvent pour aller vite mais d'un autre côté si un jour dans une banque il y a un hacking ce serait grave. C'est grave dans une société industrielle mais dans une banque c'est encore plus grave. C'est donc un vrai sujet dans les comités d'audit, de risques et plus généralement dans le conseil d'administration. Donc, là, c'est un dialogue entre le conseil d'administration et le management de s'assurer qu'il y a une bonne balance entre aller de l'avant et bien assurer la sécurité.

Qu'est-ce qui permet selon vous à un conseil d'administration de jouer son rôle dans la transformation digitale d'une entreprise?

Les membres du conseil d'administration doivent être intéressés par le digital. Cela veut également dire avoir une certaine connaissance. Il faut voir ce qui se passe dans le marché. Par exemple, je lis tous les jours les extraits de presse qui sont publiés par notre banque, ce que la concurrence fait, ce que nous faisons, etc. Il faut que les administrateurs s'y intéressent et puissent poser les bonnes questions au management.

Ensuite, il faut une transparence entre le management et le conseil d'administration. Il faut savoir donner les mauvaises nouvelles, les bonnes nouvelles c'est facile mais les mauvaises c'est plus difficile. Si on a un problème, par exemple, avec une avancée dans le digital il faut que le conseil, s'il s'agit de grands sujets, soit mis au courant au moins au niveau hélicoptère.

Est-ce que différentes entreprises doivent avoir des conseils d'administration avec des maturités digitales différentes?

Un conseil d'administration doit se composer de membres qui ont différentes compétences. Un conseil d'administration avec que des membres digitaux cela n'avance pas non plus. Je pense qu'aujourd'hui une grande partie des membres d'un conseil d'administration doit s'intéresser au digital dans une certaine mesure. Un administrateur aujourd'hui qui n'a aucune compétence digitale c'est dommage. Il y a un minimum à avoir. Mais ce serait encore mieux s'il y a un ou deux spécialistes qui ont une forte compétence digitale et qui s'y intéressent vraiment de plus près. C'est pour tout comme ça, il faut un mix de compétences et chacun doit quand même avoir des compétences générales dans beaucoup de matières. Tout le monde devrait s'intéresser au digital et avoir des connaissances de base mais un ou deux administrateurs devraient être à la pointe.

Que pensez-vous du concept de modèle de maturité digitale du conseil d'administration?

Ma réaction à chaud est que cela me semble assez logique.

Part III: Digital maturity model

A. Digital capital

Dans quelle mesure les connaissances digitales sont-elles importantes pour un conseil d'administration?

Le digital il est partout, dans le commercial, dans le back office, dans les ressources humaines, dans la finance, etc. Quelqu'un qui ne s'y intéresse pas, qui n'a pas un minimum de sens du digital il est dépassé.

Cela serait intéressant d'avoir des administrateurs avec des skills digitaux?

Je pense que cela serait pas mal, surtout dans des entreprises plus petites, par exemple, une PME qui n'est pas digitale : si dans le management il n'y a pas les compétences digitales il vaut mieux en avoir un dans le conseil d'administration. Je pense qu'aujourd'hui n'importe quelle société a besoin de personnes dans son management qui ont des compétences digitales. Compenser un manque au niveau du management par des compétences au niveau du management ce n'est pas une bonne idée.

Est-ce que cela peut aider à évaluer des coûts de projets, des timelines etc.?

Évidemment, surtout dans les grandes entreprises où un projet digital est souvent de l'ordre de dizaines de millions. Il faut parfois que quelqu'un demande quel est le business case concrètement dans le conseil d'administration. Pour pouvoir challenger là-dessus il faut avoir les compétences.

Dans quelle mesure les aptitudes digitales sont-elles importantes pour un conseil d'administration?

C'est ce que je veux dire. Si on s'intéresse, on va lire, on va s'informer et on se forme une compétence au fur et à mesure. Si la banque lance une application, je l'utilise. En termes de caractéristiques je dirais que c'est essentiellement l'intérêt de la personne. C'est avec tout comme ça. Si on ne s'intéresse pas à quelque chose on ne développe pas de compétences. C'est la base de tout.

Dans quelle mesure les contacts dans le monde digital sont-ils importants pour un conseil d'administration?

Normalement le management a suffisamment de contacts, peut-être dans une société plus petite cela peut être intéressant d'avoir un administrateur bien introduit dans le monde digital. Cela peut être utile. Parfois quand je fais partie d'un conseil en Turquie ou ailleurs et que je connais quelqu'un d'intéressant, que ce soit en digital ou autre chose, je propose de prendre contact avec cette personne-là. Après je pense que chez nous le chief digital officer a ce qu'il faut en termes de réseau digital.

B. Digital structure

Que pensez-vous de la présence de directeurs digitaux dans le conseil d'administration?

Un conseil d'administration n'a jamais quelqu'un qui est officiellement nommé directeur digital, directeur z, etc. On a tous des compétences et donc, il faut qu'on compose le conseil d'administration de personnes qui ont des compétences différentes mais il ne faut pas dire qui est spécialisé en quoi. Automatiquement, quelqu'un qui a plus de compétences dans un domaine posera plus de questions par rapport à cela. Cela se voit d'ailleurs en meeting.

Dans le choix des administrateurs, quand on prend le conseil d'administration au sérieux, on essaie d'avoir des administrateurs qui ont des compétences différentes.

Que pensez-vous de la création de comités digitaux dans les conseils d'administration?

Je pense qu'il y a suffisamment de comités, il y a dans les banques déjà cinq comités officiels. Donc, je pense qu'il y a suffisamment de comités. Cependant, je suis membre du comité d'audit en Turquie et j'ai cette semaine une formation sur la cybersécurité. Donc, c'est le comité d'audit mais c'est un sujet important qui est traité. Donc, on peut aussi bien avoir une session digitale. Un comité digital cela me paraît très opérationnel.

Que pensez-vous de la création de conseils composés de non-administrateurs pour soutenir les conseils d'administration sur les sujets digitaux?

Cela pourrait aider mais cela dépend de la situation particulière. Je préfère qu'on ait un board avec des compétences complémentaires et donc, en digital également que d'avoir un advisory board. Je trouve qu'un advisory board c'est un peu trop freewheeling. Si on veut vraiment prendre ça au sérieux alors on le met dans le conseil d'administration.

C. Processes

Est-ce que vous pensez que le digital doit être un critère dans ces processus?

On organise de plus en plus des sessions de training, que ce soit dans la banque en MIFID, en cybersécurité, en digital. C'est une façon d'augmenter la connaissance des administrateurs. Ce sont soit des externes qui donnent ces formations, soit ce sont des internes du département digital. C'est important d'avoir quelqu'un dans l'entreprise qui se concentre à 100% sur le digital comme un CDO. C'est lui, par exemple, qui va donner des formations ou au moins organiser cela. Ce qu'il y a aussi c'est que le digital touche à tout.

Il faut donc que le digital soit inclus dans les processus de sélection. Mais il faut surtout voir par rapport à ce qu'on a déjà comme compétences. Il faut s'assurer que chaque administrateur ait un minimum de connaissances en digital.

Cela peut être intéressant de mesurer les connaissances actuelles du conseil d'administration afin de voir ce dont on aura besoin?

Oui, en Turquie, par exemple, le régulateur a décidé il y a peu de temps qu'il faut que dans le conseil d'administration il y ait au moins une personne spécialisée en cybersécurité. Surtout dans une banque. On ne peut jamais oublier la cybersécurité dans le digital. Ils ont décidé en Turquie d'avoir quelqu'un qui est spécialisé en cybersécurité. Soit un membre actuel qu'on forme, soit on engage quelqu'un pour cela.

Est-ce que cela aurait une valeur ajoutée que ce soit un administrateur indépendant?

Il faut avoir une indépendance, des administrateurs indépendants qui ne sont pas liés aux intérêts du management, qui peuvent dire non, mettre la pédale de frein de temps en temps.

Dans quelle mesure pensez-vous que les pratiques digitales des conseils d'administration sont un indicateur de maturité digitale?

C'est important. Chez nous, par exemple, on envoie les documents pour les conseils d'administration dans un système sécurisé spécial.

On dit souvent que le digital c'est aussi changer la façon dont l'entreprise interagit. Est-ce que vous pensez que le conseil d'administration doit aussi s'adapter, par exemple, devenir agile?

Aujourd'hui un conseil d'administration est déjà agile car un conseil d'administration est par principe un organe qui travaille en cross-fonction car c'est un conseil qui travaille en consensus et en équipe.

Par ailleurs, le board chez nous a joué un rôle via le comité de sélection dans la nomination du chief digital officer.

Et les pratiques privées des administrateurs est-ce que c'est quelque chose d'intéressant à mesurer?

Je pense que ce n'est pas indispensable mais c'est intéressant de voir, par exemple, les produits de la banque. C'est mieux si les administrateurs utilisent, par exemple, les applications de la banque.

D. Role

Que pensez-vous des quatre rôles que j'ai développés?

Je pense que c'est ça. C'est absolument ça. Pour la stratégie, la stratégie digitale est faite ensemble avec les chefs de département et est intégrée avec la stratégie.

Est-il important que le conseil d'administration perçoive bien son rôle par rapport au digital?

Oui, tout à fait.

E. Culture and leadership

Comment peut-on mesurer l'ouverture du conseil d'administration par rapport au digital/transformation?

C'est avant tout une question personnelle. C'est l'intérêt comme je l'ai déjà dit. Il n'y a aucune société qui n'est pas touchée par le digital. Un administrateur qui dit qu'il n'est pas intéressé par le digital, qu'il ne veut pas en entendre parler, il faut le remplacer.

Il faut intégrer cette ouverture dans le modèle?

Évidemment.

Dans quelle mesure l'ouverture du conseil d'administration au digital et à la transformation est-elle un facteur déterminant de l'approche digitale générale de l'entreprise?

Si le conseil d'administration s'y intéresse, challenge le management, etc. Évidemment que ça donne un boost à l'entreprise.

2. Charles-Henri de Maleissye-Melun: 23/03/2019

Part I: Introduction

Est-ce que vous pourriez vous introduire et expliquer votre carrière et expérience?

Je suis le CEO de FNAC Belgium Vanden Borre, membre du comité exécutif du groupe. Dans la structure il y a un comité exécutif dans chaque pays. Chaque pays est membre d'un comité exécutif groupe car il y a 25 000 collaborateurs dans le groupe. Au-dessus du comité exécutif groupe il y a un conseil d'administration.

Dans le comité exécutif groupe il y a une dizaine de personnes: le directeur des ressources humaines, la directrice marketing groupe, etc., moi en tant que patron de la Belgique et aussi le patron de l'Espagne-Portugal.

J'ai fait toute ma carrière dans la distribution chez Darty, j'ai une formation en école de commerce en France et j'ai fait un master en administration d'entreprise plus tard à 36 ans. Je suis ensuite arrivé en Belgique en tant que directeur commercial en 2011 et en 2015 j'ai pris la direction en Belgique.

En 2016, Vanden Borre est racheté par FNAC et je me suis occupé de l'intégration des deux entreprises et j'ai après pris la direction des deux. On a un siège et deux marques. Les deux marques sont vraiment différentes, les magasins sont différents, les sites webs, les stratégies marketing, etc.

Est-ce que vous pourriez présenter FNAC Belgium Vanden Borre?

L'ensemble fait 560 millions d'euro de chiffre d'affaires en Belgique, 400 millions chez Vanden Borre et 160 millions chez FNAC. Vanden Borre c'est 73 magasins et un site marchand depuis 2002 qui fait de la vente en ligne (car dans la distribution le digital est très important, surtout avec l'émergence d'acteurs comme Amazon, etc. car les consommateurs comparent maintenant tout en ligne. Nous, on a pris le digital très vite et on l'a vu comme une opportunité. L'internet est une opportunité mais peut être une menace si on ne le prend pas bien. Le digital fait qu'on est beaucoup plus important. On l'a toujours intégré dans notre démarche commerciale en pensant comment on peut créer des sites internet qui renvoient vers les magasins et des magasins qui s'appuient sur l'internet pour vendre. C'est ce qu'on appelle une démarche omnicanale.

Vanden Borre c'est 1250 personnes et FNAC c'est 456 personnes avec 11 magasins. Chez FNAC le business est plus compliqué car les magasins sont plus grands et l'organisation

du travail n'est pas optimale. Les lignes de produits souffrent car les produits se dématérialisent. Entre Vanden Borre et FNAC le contexte est assez différent.

Chez nous les services sont très importants car c'est comme ça qu'on se différencie. Chez Vanden Borre, par exemple, c'est quelque chose de crucial, on est aligné au prix le moins cher mais on fournit en plus un système d'installation et d'après-vente par nos propres techniciens. Chez FNAC le service passe par la carte d'adhérent et l'accompagnement du client.

Est-ce que vous pourriez présenter le conseil d'administration du groupe?

Le conseil d'administration est là pour auditer les stratégies à long terme et identifier et valider les options prises par la direction générale et les directions des entreprises, de temps en temps orienter les choses, vérifier les comptes, vérifier un certain nombre d'audits avec des commissions d'audit, sur les salaires de la direction, sur la bonne gestion de l'entreprise, etc. Ils doivent être sensibles au digital mais ils ne doivent pas être dans la mise en place de l'exécution.

Part II: Digital

Quelle est l'importance du digital pour FNAC Belgium Vanden Borre?

Pour nous le digital est de plus en plus important. Dans l'interaction avec le client pour nous c'est capital. La première chose c'est le site internet car on est sur un site marchand et qu'aujourd'hui 20% de notre business se fait sur internet et plus de 70% des clients qui viennent en magasin ont d'abord été sur le site web pour se renseigner et 50% des clients qui achètent sur internet vont après retirer en magasin.

Le digital est très important mais on a encore énormément de travail à faire car c'est lourd et que ça prend énormément de temps à développer, il y a un problème de compétences car il y a une pénurie dans ces métiers en Belgique.

Que faites-vous aujourd'hui pour digitaliser? Quelles initiatives sont mises en place?

On aimerait aller beaucoup plus loin. Premièrement, nos techniciens quand ils vont chez le client ils ont une tablette avec la 4G et ils savent via cette tablette retrouver l'historique du client, les informations sur la machine à réparer, commander la pièce, donner des prix au client, etc. On développe la même chose pour le livreur car les clients veulent savoir où

est le livreur afin d'être là au bon moment. On veut aussi digitaliser le vendeur, on va donner aux vendeurs des phablettes afin de mieux pouvoir conseiller les clients. On a énormément de projets de digitalisation, d'omnicanal.

Est-ce qu'on peut dire que FNAC Belgium Vanden Borre vit une transformation digitale?

Elle est lancée depuis les années 2000 et elle s'accélère. Je pense que dans la distribution on est beaucoup en avance sur d'autres métiers. On a très vite été pris dedans. Aujourd'hui il y en a qui souffrent car ils ont raté le virage du digital.

En tant que CEO quelle est l'importance du digital dans votre rôle?

C'est très important car c'est à moi de donner l'impulsion. Le problème du digital c'est que ça part dans tous les sens et qu'il y a énormément de projets. La difficulté c'est de choisir les projets sur lesquels on va se concentrer. C'est là que le CEO doit faire les bons choix. Par ailleurs, il y a un manque de ressources humaines qui est assez contraignant. Les jeunes veulent avant tout aller dans les start-ups car ce sont des projets beaucoup plus excitants.

Quel est le rôle du conseil d'administration par rapport au digital?

Ils peuvent en avoir un dans le sens où on soumet des décisions au conseil d'administration qui va décider. Par exemple, on voudrait investir un montant tel dans un fond qui est axé sur l'innovation et donc le board va évaluer cela. Aujourd'hui il est difficile de développer des compétences digitales et donc souvent c'est plus simple d'acquérir des jeunes pousses et d'investir dedans. Par rapport à cela le board joue un rôle pour valider cela.

Est-ce que le conseil d'administration du groupe FNAC est impliqué dans les initiatives digitales de FNAC Belgium Vanden Borre?

Non pas spécialement.

Qu'est-ce qui permet à un conseil d'administration de jouer son rôle dans la transformation digitale d'une entreprise?

Premièrement, il faut avoir des membres du board qui viennent de ce monde-là. Il faut des membres qui viennent d'entreprises qui sont immergées dans le digital ou avoir des connaissances propres liées à des entreprises qui ont des activités dans le digital. La connaissance vient du cursus: de la formation digitale, de l'expérience digitale ou d'une confrontation au monde digital dans les activités.

Est-ce que différentes entreprises doivent avoir des conseils d'administration avec des maturités digitales différentes?

Ça va devenir crucial pour l'ensemble des entreprises et ce sont des compétences difficiles à trouver. Évidemment, il doit y en avoir partout car le digital est au cœur de toutes les activités. Cependant, les membres du board doivent donner de grandes orientations, ils ne doivent donc pas spécialement avoir des compétences digitales au sens technique du terme mais plutôt un vernis, une vision digitale. Un membre de board aujourd'hui doit savoir comparer le business modèle d'Amazon et de Darty et demander au management de présenter des stratégies par rapport à cela. Le board doit évaluer si les personnes qui gèrent l'entreprises sont compétentes et mettent ce qu'il faut en place. Plus que les connaissances ils doivent avoir une bonne compréhension. C'est important que dans les boards il y ait des personnes qui soient sensibles au digital, c'est clair.

Part III: Digital maturity model

Que pensez-vous du concept de modèle de maturité digitale du conseil d'administration?

Ce sont des bonnes questions que tu soulignes par ce modèle car aujourd'hui il y en a plein qui se les posent mais qui ne savent pas le mesurer. C'est important de mesurer ce que les administrateurs pensent qu'aura pour importance le digital dans le futur car si quelqu'un te dit que le digital n'est pas important pour l'entreprise dans le futur tu es fort probablement confronté à une digital sceptique. Il y a 10 ans quand je suis arrivé en Belgique des gens me disaient que le belge n'achètera pas sur internet car il aime trop son magasin. Aujourd'hui, ces gens ne sont plus là, ou presque.

A. Digital capital

Dans quelle mesure les connaissances digitales sont-elles importantes pour un conseil d'administration?

Un membre de board doit savoir quelle est l'importance du digital pour l'entreprise et surtout comment l'entreprise peut utiliser le digital. Le conseil d'administration doit connaître les leviers et ce que permet de faire le digital par rapport au métier de l'entreprise de façon hélicoptère.

Dans quelle mesure les skills digitaux sont-ils importants pour un conseil d'administration?

Ça peut permettre de savoir s'il y a des vraies compétences dans le conseil d'administration. Cependant, il ne faut pas avoir été développeur pour comprendre les usages. Ce qui est important c'est plus le "quoi, ce que le digital peut permettre de faire" que le "comment" pour le conseil d'administration.

Dans quelle mesure les aptitudes digitales sont-elles importantes pour un conseil d'administration?

C'est très important, si tous les membres ont des caractères plutôt sceptiques et donc digitaux-sceptiques, c'est un problème. L'entreprise a besoin d'avoir une vision sur le digital car c'est le 21^{ème} siècle. Les boards doivent avoir des membres qui ont des appétences, des intérêts pour le digital pour voir plus loin comment le métier de l'entreprise va être transformé par le digital à travers l'usage des clients.

Donc oui, c'est un point essentiel.

Dans quelle mesure les contacts dans le monde digital sont-ils importants pour un conseil d'administration?

Le réseau c'est aussi ce qui permet aux membres de s'informer et de progresser dans leur métier qui se transforme à cause du digital. L'intérêt d'un conseil d'administration pour une entreprise c'est d'avoir des gens qui sont d'univers différents. Car le CEO est trop la tête dans le guidon et il y a certaines choses qu'il ne peut pas voir. Dans un conseil d'administration il faut quelqu'un qui a de vraies compétences financières mais aussi des administrateurs qui ont de vraies compétences digitales. Donc oui, c'est important d'avoir

un réseau car ça permet aux administrateurs de discuter avec leurs réseaux et d'identifier des opportunités pour leurs entreprises.

B. Digital structure

Que pensez-vous de la présence de directeurs digitaux dans le conseil d'administration?

Les postes sur des aspects précis comme le digital je ne sais pas si ça se justifie comme cela, il faut qu'il y ait des gens qui aient tous un vernis digital, il peut bien sûr il y avoir une personne qui est beaucoup plus du monde digital, c'est important de mesurer cela. Je pense que cela doit plus irriguer tout le monde. S'il n'y a qu'une personne qui porte le digital c'est compliqué.

Avoir un directeur digital cela peut bien sûr aider mais cela ne suffit pas, il faut que le digital fasse partie de la culture des membres d'un conseil d'administration s'ils veulent que leur entreprise ait une vision suffisamment à long terme et rapide au vu des évolutions de leur métier.

Que pensez-vous de la création de comités digitaux dans les conseils d'administration?

Je ne sais pas si c'est quelque chose qui se fait mais ça peut être une idée aujourd'hui que les conseils d'administration aient des comités digitaux.

Que pensez-vous de la création de conseils composés de non-administrateurs pour soutenir les conseils d'administration sur les sujets digitaux?

Je pense que c'est des questions qui peuvent se poser lors de revues de stratégie mais je ne sais pas si un conseil spécial est nécessaire. Le digital c'est quelque chose qui doit faire partie de l'ensemble des départements de l'entreprise, c'est quelque chose qui est important pour tout le monde et qui ne doit pas spécifiquement être considéré comme un sujet à part. Là où c'est intéressant, c'est dans des entreprises où personne n'est digital qu'il y ait quelqu'un qui porte le sujet.

C. Processes

Est-ce que vous pensez que le digital doit être un critère dans ces processus?

Oui, il faut qu'ils se posent la question de savoir si la personne a une sensibilité et une connaissance digitale. Si on veut des administrateurs visionnaires, il faut qu'ils aient une maturité digitale.

Pensez-vous qu'il est important que le processus de recrutement du CEO tienne compte du digital?

C'est très important de recruter un CEO au goût du jour, qui connaisse les nouvelles technologies, etc.

Pensez-vous qu'il est important qu'il y ait des pratiques digitales au sein même des conseils d'administration?

C'est très important mais pas seulement pour les meetings, également leur vie privée, quelle utilisation ils ont du digital, quelles interactions ils ont, la sensibilité qu'ils ont par rapport à cela, etc.

D. Role

Dans quelle mesure le conseil d'administration doit-il développer la vision et la stratégie digitale?

Le conseil d'administration doit aider à développer la vision digitale et la stratégie digitale. Il doit le demander au management et il doit guider le management dans le développement de cela. C'est le plus important.

Dans quelle mesure le conseil d'administration doit-il conseiller le CEO sur le digital?

Le board doit surtout challenger, sauf s'il y a un spécialiste dans le digital. Il doit surtout avoir une vision et pouvoir challenger sur les bons sujets. Il doit challenger sur l'importance que cela a, le niveau d'investissement qui y est consacré et les implications que cela va avoir sur le métier dans 10 ans, 20 ans.

Dans quelle mesure le conseil d'administration doit-il contrôler et monitorer les initiatives importantes liées au digital?

Ici le board a un rôle à jouer car il doit contrôler vers où les initiatives guident l'entreprise.

Dans quelle mesure le conseil d'administration doit-il gérer les risques liés au digital?

Ils doivent regarder le niveau de risque pour préserver la bonne santé et protéger la vie à long terme de l'entreprise.

Est-il important que le conseil d'administration perçoive bien son rôle par rapport au digital?

Il faut que le board se rende compte que le digital fait partie de ses attributions et qu'il doit le gérer.

E. Culture and leadership

Dans quelle mesure l'ouverture du conseil d'administration au digital et à la transformation de l'entreprise est-elle un facteur déterminant la maturité digitale du conseil d'administration?

Ici ce qui est aussi intéressant c'est de voir si les administrateurs sont eux-mêmes aussi des utilisateurs du digital dans leur vie privée. Est-ce qu'ils ont un compte Facebook, Twitter, Instagram, etc. Cela permet aussi de mettre en rapport avec leur comportement digital/ouverture digitale.

C'est capital et de plus en plus. C'est bien que tu poses ce genre de questions car ça peut en réveiller quelques-uns...

Dans pas mal d'industries les gens sont très loin du digital. Puis il y a certaines entreprises qui sont très avancées. Par exemple, Cola, une entreprise qui fait du bitume, même si on peut dire que mettre du goudron sur la route ce n'est pas très digital ils se posent la question de comment on peut utiliser le digital pour voir la qualité des revêtements, etc.

Dans quelle mesure l'ouverture du conseil d'administration au digital et à la transformation est-elle un facteur déterminant de l'approche digitale générale de l'entreprise?

Je pense que c'est capital qu'il y ait cette ouverture au sein des conseils d'administration, d'abord parce que si le CEO soumet des investissements importants, le digital nécessite des investissements importants et des focus forts, il faut que le board sache de quoi on lui parle et se rende compte des implications que cela a. C'est donc capital que cela fasse partie de la culture du conseil d'administration et que les membres d'un conseil y soient ouverts. C'est essentiel. Soit pour pouvoir valider des décisions, soit pour pouvoir challenger des organisations qui ne sont pas à la pointe sur le sujet. C'est donc un des points les plus importants pour pouvoir préparer les entreprises aux défis de demain.

Un conseil ça permet à l'entreprise d'être performante demain en développant la vision, en challengeant, etc. Qu'est-ce qui fait qu'une entreprise est performante demain? Son innovation, son business modèle. Et donc, cela passe par le digital. Les plus fortes créations de valeur sont dans des sociétés digitales. C'est donc capital que ce soit dans la culture de l'entreprise.

Pensez-vous qu'il existe d'autres dimensions non incluses dans le modèle qui pourraient mesurer la maturité digitale du conseil d'administration?

C'est intéressant de voir l'usage qu'ils ont eux-mêmes du digital. Qu'est-ce qu'ils en connaissent concrètement.

De plus, le board doit être dans l'impulsion et le contrôle mais pas dans l'exécution. Ça peut être bien d'avoir un spécialiste du digital.

Cependant, le digital c'est bien mais ce n'est pas tout. Le digital c'est un moyen et pas un objectif. Il faut que le digital crée de la valeur.

3. Benoît de Ruffray: 31/03/2019

Part I: Introduction

Est-ce que vous pourriez vous introduire et expliquer votre carrière et expérience?

J'ai fait des études d'ingénieur à l'École polytechnique. En sortant j'ai choisi, comme je voulais faire du BTP, l'école des Ponts et Chaussées. J'ai fait un échange qui m'a permis de faire un master à l'Imperial College à Londres. Entre temps, j'avais déjà fait quelques stages sur des chantiers. J'ai ensuite commencé ma carrière dans le BTP où j'ai travaillé comme patron technique puis patron de production puis patron de chantier. Cela m'a amené dans le grand nord canadien et à Hong Kong et puis au Liban où j'ai été patron d'un grand chantier de travaux maritimes. Après ça j'ai commencé à faire du montage de projets sur des projets en concession. Donc, plus l'aspect amont et commerce et financement de projet. Puis je suis parti comme responsable de zone en Amérique latine pour développer la partie amont, montage, aspect commerce jusqu'à la signature des projets et supervision sur les chantiers. Je suis ensuite parti en Asie où j'ai été patron de filiale à Hong Kong sur le périmètre de l'Asie en commençant à toucher plusieurs métiers. En 2007 j'ai rejoint le siège afin de devenir délégué à la gestion journalière de la partie bâtiment à l'international qui œuvrait dans beaucoup de pays à travers le monde. En 2014 j'ai quitté Bouygues et j'ai repris la direction générale d'une holding qui reprenait tous les métiers de spécialité des travaux publics du groupe Vinci. J'y suis resté moins d'un an car j'ai rejoint le groupe Eiffage en tant que président et directeur général du groupe.

Est-ce que vous pourriez brièvement présenter Eiffage?

Le groupe Eiffage c'est 70.000 collaborateurs. On est présent sur l'ensemble des métiers du BTP et des concessions. Du côté BTP il y a l'aménagement immobilier, la promotion immobilière et le bâtiment. Après, il y a les métiers du génie civil, de la construction métallique et de la route. Et ensuite, il y a les métiers qui ont attiré aux énergies et systèmes. Ce sont les réseaux électriques, tout ce qui est service à la ville, climatisation, chauffage, services aux industries et l'exploitation et maintenance de tous ces services. Ce sont des métiers en constante évolution qui sont très nombreux et qui agissent à la fois dans le domaine de l'industrie, des grands réseaux et de l'infrastructure mais aussi des services aux collectivités et du bâtiment. En parallèle, Eiffage est concessionnaire sur des autoroutes où on a les droits d'exploitation et on est responsable de la maintenance et de

la perception des péages de réseaux autoroutiers. Nous avons cela aussi pour des lignes ferroviaires ou des bâtiments parfois.

Part II: Digital

Quelle est l'importance du digital pour Eiffage? Que faites-vous aujourd'hui pour digitaliser? Quelles initiatives sont mises en place?

Pour moi le digital impacte à trois niveaux:

Le premier c'est ce qui transforme toute la partie fonction support de l'entreprise. Que ce soit la consolidation financière, la gestion des ressources humaines, la gestion des compétences et toute une sorte de services qui sont restés très proches du terrain dans le BTP. On dit que le BTP est resté très forain, chaque chantier est différent et donc pendant tout un temps les fonctions de support sont restées sur le terrain. Le digital nous permet de créer des centres de services partagés qui nous permettent de numériser des processus qui ont attrait aux fonctions de support.

Le deuxième impact c'est l'émergence d'outils et de technologies qui nous permettent de faire évoluer l'acte de construire. On est capable d'apporter de l'assistance aux compagnons au plus près du terrain avec des outils qu'on n'avait pas avant. On est capable d'amener le bureau sur le chantier, de plus en plus on voit émerger des outils qui changent la manière de construire de nos compagnons et qui nous permettent d'offrir de l'assistance au plus près. Cela évolue très vite et le champ du possible est vaste. Il faut savoir que le BTP n'a pas du tout traversé ce qui s'est passé dans l'industrie automobile ou aéronautique où l'industrialisation de l'acte de construire et l'automatisation ont eu lieu. Dans le BTP on imagine qu'on va de plus en plus procéder par solutions que tout faire sur le terrain. Les nouvelles technologies vont par rapport à cela nous permettre d'améliorer les processus et du coup de remonter dans la chaîne de valeur et d'industrialiser de façon plus importante le secteur du BTP.

Le dernier thème c'est que pour une industrie B2B comme la nôtre, les nouvelles technologies permettent à un acteur comme nous d'interagir de plus en plus avec le client final (même si on est en contact avec une organisation publique). Cela ouvre beaucoup d'opportunités: cela nous permet d'offrir des solutions plus pertinentes pour le client final même si notre client est toujours, par exemple, une entité publique.

Par exemple, un projet immobilier va être présenté à la mairie: avant, le maire ne prenait pas en compte spécialement l'avis des parties prenantes tandis qu'aujourd'hui le maire

doit faire des réunions avec les parties prenantes afin de voir comment le projet s'intègre, comment on peut l'améliorer. Aujourd'hui les nouvelles technologies nous permettent d'interpeller directement les parties prenantes. On est donc capable d'aller chercher comment le projet est perçu, un peu comme si on était en B2C alors qu'on est resté en B2B. Un autre exemple, pour les concessions autoroutières: les clients aujourd'hui sont des organismes publics mais pour autant ceux qui sont vraiment nos clients ce sont ceux qui prennent l'autoroute et qui paient le péage. Grâce aux nouvelles technologies on est capable de comprendre ce que nos clients veulent de manière beaucoup plus puissante. Même si on reste en B2B on est déjà au moins B2B2C ou B2C.

Quel est pour vous le rôle du conseil d'administration par rapport au digital?

Je ne pense pas que le conseil d'administration a un rôle par rapport au digital qui soit différent de son rôle général. Cependant, ton propos est intéressant dans le sens que le digital peut amener des perturbations importantes dans l'équilibre économique et dans la chaîne de valeur. Puisque le rôle du conseil d'administration est de s'assurer de la cohérence et de la vision de l'entreprise sur le long terme il est vrai que ces sujets-là, qui peuvent impacter en son cœur la manière dont l'entreprise est en train d'imaginer ce que sera son marché dans 5 à 10 ans mais aussi quels seront ses concurrents (de nouveaux acteurs émergent), sont importants pour le conseil d'administration. Du coup dans l'écosystème général il paraît difficile que le conseil d'administration ne s'interroge pas sur comment cela impacte l'entreprise. Mais ce n'est pas le digital en soi. C'est ses conséquences qui perturbent l'écosystème et du coup le positionnement et la chaîne de valeur de l'entreprise.

Qu'est-ce qui permet selon vous à un conseil d'administration de jouer son rôle par rapport à cela?

Le conseil d'administration il a un certain nombre d'administrateurs et certains administrateurs qui vont être délégués dans des comités spécifiques. Dans mon groupe il y a trois comités. Le premier est le comité d'audit, qui s'occupe des problématiques de gouvernance, de conformité, d'analyse des comptes, de dialogue avec les commissaires aux comptes, etc. Le deuxième est le comité des nominations et rémunérations. Il nomme les administrateurs en identifiant s'il faut un administrateur de plus, ou quelles complémentarités il manque. Il va conseiller le conseil sur quel administrateur on

pourrait ajouter et recommander un administrateur. Ensuite, c'est le conseil d'administration et l'assemblée générale qui cooptent et ratifient respectivement l'administrateur. Finalement, ce comité va nommer le directeur général et le président. Ce comité va aussi interroger le directeur général pour s'assurer que les choses sont faites en termes de plans de successions, de forces vives, etc. plutôt que directement faire ces choses. Le troisième comité, le comité stratégique et de RSE. Les administrateurs de ce comité vont avoir pour rôle d'interroger la direction générale ou les directions d'entités. Cela peut être de choisir telle entité ou telle autre et de l'interroger sur un certain nombre de choses.

Par rapport au digital il y a deux comités qui peuvent être interpellés. De la façon la plus importante le comité stratégique et RSE va interroger la direction générale mais aussi les directions d'entités sur comment ils s'y préparent, comment ils se voient évoluer et comment ils voient leurs écosystèmes changer. Il va donc y avoir un dialogue entre cette partie de l'entreprise qui va élaborer une réponse et va être interpellé par le comité stratégique qui va la challenger sur sa pertinence et éventuellement demander de creuser plus ou poser d'autres questions. Par exemple, les opportunités digitales ont permis à de nouveaux concurrents d'émerger rapidement et c'est un sujet sur lequel tout le monde doit se préparer. Ensuite, le comité de nomination et de rémunération est touché par le digital. Effectivement, concrètement on a de plus en plus de sujets liés à des attaques de nos systèmes d'information et donc, il serait judicieux de se demander s'il ne faudrait pas avoir un administrateur qui a plus d'expérience dans la cybersécurité ou dans les systèmes d'information car son vécu et son expérience personnelle peuvent apporter de l'expérience et de la connaissance à l'ensemble du conseil d'administration. C'est le genre de questions qu'un comité de nomination peut se poser. Après la réponse n'est pas forcément de chercher un administrateur, elle peut être aussi: "on en est conscient, sur ces sujets là on n'a pas toujours la pertinence en tant qu'administrateur" et alors le conseil peut s'appuyer sur des services d'experts.

Part III: Digital maturity model

Que pensez-vous du concept de modèle de maturité digitale du conseil d'administration?

Je comprends l'idée. Pour moi le fonctionnement et le développement est innervé à l'entreprise, c'est comme le développement durable (beaucoup d'entreprises ont finis par

en faire un sanctuaire dans un coin alors que le vrai impact on l'a quand on l'intègre dans le quotidien, quand ce n'est plus une fonction à part). La maturité digitale doit donc mûrir inévitablement. Dans le cadre du groupe Eiffage j'ai parlé des trois sujets et il faut que l'entreprise les saisisse. Cela étant, le conseil d'administration n'est pas là pour se substituer au management de l'entreprise. Ce que tu dis par rapport à la maturité (que finalement ils ne voient pas ça comme des gros mots et qu'ils soient capables d'interpeller sur un certain nombre de ces mouvements et de s'assurer que le management lève suffisamment la tête par rapport à cela) tu as raison, c'est clair. Cependant, ce n'est pas une ligne de business. Même l'émergence de concurrents qui vont s'intercaler dans la chaîne de valeur c'est le management et pas le conseil qui est en charge de ça. Et il faut faire très attention quand on est dans ces éléments-là, un conseil qui finit par vouloir faire du management ce n'est pas bon du tout.

Par rapport à ce que vous dites ce serait intéressant de commencer par parler du rôle. Je propose quatre rôles qui sont de contribuer au développement de la vision et la stratégie digitale, de conseiller le CEO sur le digital, de contrôler et monitorer les initiatives importantes liées au digital et de gérer les risques liés au digital.

Les quatre rôles me vont bien. Là où il faut faire attention c'est que pour moi le digital ne se substitue pas à la stratégie de l'entreprise. Ce qui est sous-jacent derrière le digital ce sont les évolutions technologiques qui perturbent les écosystèmes et qui doivent être intégrés dans les quatre rôles que tu proposes au niveau de la stratégie en général. Mais ce n'est pas un pilier à part. Pour moi l'élément c'est que si on parle d'uberisation, qui vont être acteurs de la ville et qui vont se mettre en point d'entrée par rapport au maire? Aujourd'hui c'est ce qu'on fait, on a tous les métiers pour créer ce genre de plateformes. Mais nous on a des compagnons et on va jusqu'à changer l'ampoule. Verticalement on aura toujours des compagnons et donc notre enjeu est de rester au premier échelon et donc de ne pas devenir un sous-traitant de Google ou autre. La question est donc si nous sommes capables d'être intégrateurs de nouvelles solutions pour qu'on propose des services intégrés qui interpellent. Mais donc ces nouvelles technologies elles existent, force à nous d'être capables de les intégrer. Par rapport à cela, l'interrogation que doit avoir un conseil c'est de se dire "Vous êtes sur ce marché là, vous avez l'habitude faire ci et ça. Il y a d'autres acteurs qui sont en train de se positionner. Est-ce que vous êtes en train de suffisamment intégrer les nouvelles solutions pour rendre votre offre au bon niveau et vous assurer que

vous n'allez pas vous faire doubler par un concurrent ou un nouvel acteur qui va s'intégrer dans la chaîne de valeur ?" et c'est ça qui est fondamental. Quelque part le rôle par rapport à cela des administrateurs c'est de se nourrir de ce qu'ils entendent, de leur expérience, de voir dans d'autres secteurs quels sont les mouvements qui sont en train de se faire, pour pouvoir dans l'entreprise dans laquelle ils sont membres du conseil interpellier le management pour s'assurer qu'on ne regarde pas, en termes de concurrents, les concurrents traditionnels mais aussi ceux qui peuvent émerger demain si on laisse une faille dans la chaîne de valeur. En conclusion, le digital n'est pas dissociable des autres éléments, c'est un perturbateur, ça crée des opportunités pour de nouveaux acteurs et c'est le rôle des sociétés qui n'ont pas le digital comme principale dimension de se demander quel est leur écosystème, quels sont leurs clients finaux, quelles sont leurs compétences et comment ils peuvent intégrer les nouvelles possibilités.

Pour moi ce qui est en train de se passer au niveau du digital (par rapport à mes deux derniers points) c'est qu'il y a un écosystème qui est en train d'être complètement perturbé. Le pire pour l'entreprise c'est qu'elle perde son positionnement et le mieux c'est qu'elle se positionne sur un nouveau positionnement.

Revenons sur une autre dimension, le capital digital. Est-ce que vous pensez que c'est important que le conseil d'administration ait des bonnes connaissances en son sein du digital?

Je pense que ce qui est le plus important ce n'est pas la connaissance technique mais l'intérêt porté, la culture générale des grandes évolutions (car on a des exemples déjà) et donc la sensibilité à ce possible et donc savoir aussi garder du recul. Quand le sujet devient technique l'entreprise trouvera toujours. Le conseil il est plus dans l'orientation à long terme et la vision. Dans la vision c'est plutôt l'évolution des besoins qui est importante. Dans une entreprise qui serait très B2B ce serait intéressant car un des premiers impacts du digital c'est que des entreprises B2B deviennent de plus en plus B2C pour mon secteur. Donc, c'est plutôt aller chercher de l'expérience de personnes qui ont vécues des transformations de chaînes de valeur, d'écosystèmes plutôt que de l'expérience intrinsèque technique. Pour moi on va chercher la solution la plus ergonomique et donc, pour moi l'ergonomie et la sensibilité à l'ergonomie deviennent fondamentaux. Quand on voit les applications, les seules qu'on télécharge sont celles qui ont réussi à tuer les

dizaines de milliers d'autres. L'ergonomie est devenue cruciale car on veut le système le plus efficace. Le deuxième point est que les écosystèmes bougent très vite. La meilleure manière est de se projeter sur le client final et son besoin.

Est-ce que vous pensez que cela a une valeur ajoutée que les administrateurs aient des réseaux dans des milieux digitaux?

Oui je pense parce qu'ils viennent des entreprises qui sont les plus soumises au stress permanent de la nouvelle solution, etc. et qui sont dans des écosystèmes qui vont plus vite en fait. Et donc, il y a une remise en cause des positions établies le plus vite possible. Et donc, si on a été trempé dans ces éléments là on sait la vitesse à laquelle les certitudes sont remises en cause. Les secteurs qui ont le plus subis des changements sont effectivement ceux au cœur du digital.

Que pensez-vous de la présence de directeurs digitaux dans le conseil d'administration?

Ce n'est évidemment pas négatif. Ce n'est pas une fin en soi. Si je dois résumer, le digital n'est pas un truc parmi d'autres mais innerve la chaîne de valeur. Il faut définir les grandes caractéristiques de l'impact amené par ces technologies (là je retrouverai l'ergonomie, la vitesse d'évolution des chaînes de valeurs, l'émergence de nouveaux acteurs, la proximité au client, l'ergonomie, le retour d'expérience, la puissance de la marque, les réseaux sociaux) et c'est plutôt dans ces grands thèmes que je décrirais ce qu'est l'impact du digital sur l'économie, j'en tirerais les grandes caractéristiques. Une fois qu'on a ces thèmes, puisque les impacts du digital sont compris dedans, il y a un vrai intérêt de s'assurer que le conseil d'administration a des sensibilités sur ces grands thèmes et du coup qu'il va être capable de challenger le management sur non pas la technologie in fine mais sur ses impacts.

Il faudrait donc inclure cela dans la sélection et nomination des administrateurs?

Cela aurait de l'intérêt. Cela correspond à ce que tu amenais, je ne le décris pas par le digital mais plutôt par les impacts directement du digital. Cela revient à ce que tu dis mais cela permet de puiser dans des expériences d'administrateurs qui ne sont pas forcément des personnes qui sont allées dans des sociétés purement technologiques.

C'est important que les administrateurs aient une ouverture par rapport au digital et à la transformation de l'entreprise?

Oui, je pense, absolument. À partir du moment où on est convaincu que ce sont des éléments qui perturbent les écosystèmes et la chaîne de valeur, c'est au cœur de ce que peut être durablement l'entreprise dans sa chaîne de valeur. On ne peut donc pas parler de vision sans parler de tout ça.

Est-ce que différentes entreprises doivent avoir des conseils d'administration avec des maturités digitales différentes?

Revisité comme je t'ai dit, j'en suis convaincu et, après, il faut mixer. Je pense cependant que c'est difficile aujourd'hui de dire qu'une entreprise peut ne pas s'interpeller sur ces problématiques. Et finalement, en termes d'attractivité et de fidélisation, c'est également essentiel. Par exemple, 50% des personnes qui suivent la page d'une entreprise sont ses collaborateurs. Il y a besoin des deux pour aller ni trop loin ni trop vite mais bon aujourd'hui le risque n'est pas vraiment d'aller trop loin parce que les conseils d'administration sont, aujourd'hui, composés d'administrateurs assez âgés et donc ce que tu mets en avant avec le digital est un vrai sujet.

Les administrateurs indépendants peuvent-ils apporter ce qu'il faut au conseil par rapport au digital?

Je pense que le fait qu'ils soient indépendants ou pas ne change pas le sujet. C'est très juridique la définition d'administrateur indépendant ou dépendant. Ce qu'apportent les administrateurs indépendants c'est du recul car ils viennent d'autres secteurs, etc. Donc, c'est logique que cela touche les administrateurs indépendants plus vite que les dépendants mais l'un n'empêche pas l'autre.

4. Anne Fievez: 27/03/2019

Part I: Introduction

Est-ce que vous pourriez vous introduire et expliquer votre carrière et expérience?

J'ai fait des études d'ingénieur civil à la Faculté Polytechnique de Mons. J'ai commencé ma carrière à la banque Morgan et Euroclear dans le département informatique. J'ai, après, été six mois chez ArcelorMittal. Puis, la banque Nagelmackers m'a contactée et m'a proposé un poste en sécurité informatique. Je suis restée un an ou deux dépendante du directeur de la sécurité informatique, ensuite, dans le déploiement de l'informatique, puis, j'ai repris le département informatique. J'ai donc fait 20 ans chez eux dont 15 ans en direction informatique. J'ai alors vécu l'avènement des ordinateurs portables et des softwares. J'ai eu, à ce moment-là, des expériences de devoir expliquer au comité exécutif et au conseil d'administration ces choses car ils étaient tout à fait perdus. Quand j'ai quitté, j'ai créé ma société: Newanda. J'ai, ensuite, été contactée par la banque Puilaetco qui m'a demandé de faire un état des lieux de leur informatique et j'ai, alors, repris l'informatique de la banque. Ensuite, j'ai été à la banque Degroof en tant qu'indépendante pendant plus de 10 ans jusqu'à la fusion avec Petercam. Après Degroof je suis entrée au Crelan afin de prendre les premières mesures d'urgences à la suite d'une fraude informatique par quelqu'un du back office. J'ai, ensuite, repris la direction informatique de BeoBank pendant la réalisation d'un très gros projet informatique.

Au cours de votre carrière vous avez eu des contacts avec les conseils d'administration?

Oui, tout à fait. Banque Nagelmackers au début c'était familial et donc oui, Puilaetco pareil et Degroof oui car j'ai dû défendre des projets importants, donc, les actionnaires et le comité d'audit s'intéressent à ces projets.

Part III: Digital maturity model

Quel est le rôle du conseil d'administration par rapport au digital?

Le conseil d'administration, il a son rôle, comme dans toute transformation, qui est de comprendre les investissements à faire, d'accorder sa confiance au comité exécutif et de le superviser. Effectivement, en matière de digital, ils doivent avoir des connaissances pour pouvoir le faire.

Cependant, on ne cherche pas du digital pour le digital, il faut d'abord que la stratégie de l'entreprise soit claire et après on voit comment on utilise les outils digitaux. Le digital c'est une évolution indispensable mais pas un but en soi.

Est-ce que différentes entreprises doivent avoir des conseils d'administration avec des maturités digitales différentes?

Oui, ça dépend du stade de développement. Si c'est au niveau du conseil d'administration et que c'est pour choisir des plans d'investissement à long terme c'est important qu'ils aient quand même un minimum de connaissances afin de pouvoir comprendre et de critiquer les plans proposés par le comité de direction.

A. Digital capital

Ils interviennent tous dans le calcul de la maturité mais, les skills, c'est peut-être trop exigeant et moins nécessaire.

Dans quelle mesure les connaissances digitales sont-elles importantes pour un conseil d'administration?

Ils doivent comprendre ce qu'on peut faire avec le digital, ce que cela induit, ils ne doivent pas savoir comment on va mettre en œuvre une solution technique mais ils doivent comprendre les enjeux, le temps d'adaptation, les coûts qu'il y a derrière, les risques, etc.

Dans quelle mesure les skills digitaux sont-ils importants pour un conseil d'administration?

Cela me paraît moins important mais s'il y a une personne dans le conseil d'administration qui fait des projets ça n'est que mieux évidemment. Mais s'il y a déjà une bonne compréhension dans l'ensemble du conseil d'administration: savoir identifier les risques, pouvoir juger d'un budget ou délai, etc. c'est déjà pas mal.

Dans quelle mesure les aptitudes digitales sont-elles importantes pour un conseil d'administration?

Ça c'est sans doute le premier niveau. J'ai connu des expériences assez incroyables par rapport à cela. Parfois cela prend énormément de temps de convaincre les gens. Au-delà d'une ouverture d'esprit ou d'une autre habilité parfois c'est simplement qu'on a

également un problème social et alors on ne fait pas le changement. Ils doivent être convaincus qu'il faut le faire et qu'il faut bien le faire. Même s'il faut être réaliste il faut être réactif par rapport à ces nouvelles technologies.

Dans quelle mesure les contacts dans le monde digital sont-ils importants pour un conseil d'administration?

C'est intéressant mais maintenant si le comité exécutif a ce réseau cela est bien aussi. C'est intéressant, cela prouve d'ailleurs qu'ils ont des aptitudes s'ils ont eux-mêmes investi dans des start-ups et qu'ils ont développé un réseau. Ça intervient clairement dans le calcul de la maturité.

B. Digital structure

Que pensez-vous de la présence de directeurs digitaux dans le conseil d'administration?

C'est bien mais c'est mieux un comité, un groupe de personnes. Le directeur digital pourrait être le président du comité digital. L'avantage du comité c'est qu'on a cet effet de groupe qui est vraiment enrichissant. Quand la décision repose sur une seule personne ou qu'une seule personne se sent responsable cela limite le débat.

Que pensez-vous de la création de comités digitaux dans les conseils d'administration?

Je pense qu'un comité digital cela a tout son sens parce qu'on prend certaines personnes du conseil d'administration mais pas toutes ce qui fait qu'on ne demande peut-être pas la même maturité digitale à tout le monde. Cependant, il n'y a pas juste une personne qui peut réagir mais un vrai comité composé de plusieurs personnes. Un comité digital cela me paraît être la bonne solution.

Que pensez-vous de la création de conseils composés de non-administrateurs pour soutenir les conseils d'administration sur les sujets digitaux?

S'il n'y a pas uniquement des membres du conseil d'administration dans ce comité mais également des externes car on n'a pas suffisamment de maturité à l'intérieur du conseil d'administration alors on peut l'appeler un advisory board. Un advisory board cela peut être une structure temporaire lorsqu'on doit définir justement cette vision et stratégie

digitale. Après cela peut devenir de l'ordre d'une réunion par an afin de superviser ce qui est fait et d'éventuellement changer certaines choses.

C. Processes

Est-ce que vous pensez que le digital doit être un critère dans ces processus?

Oui, c'est important, dans les processus de sélection c'est important d'ajouter les éléments du capital digital. C'est important de mesurer cela dans le processus. Cela doit être un des éléments dans la sélection. Cela s'applique à tous les processus: comité, CEO, administrateurs, ... En outre, la bonne compréhension de l'informatique par le CEO est vraiment cruciale. Il faut un débat entre le directeur informatique et le CEO mais aussi avec le conseil d'administration, surtout quand il y a une lacune au niveau du comité de direction. Il faut qu'il y ait aussi une discussion au niveau du conseil d'administration, qu'il y ait un débat. Mais encore plus important si cela n'a pas lieu dans le comité exécutif c'est vraiment grave. Je pense qu'il n'y a pas une industrie qui ne doit pas revoir ces processus à cause du digital.

Pensez-vous qu'il est important que le processus de recrutement du CEO spécifiquement tienne compte du digital?

C'est crucial car un CEO qui n'est pas impliqué là-dedans c'est vraiment un problème. Et il y en a énormément.

Pensez-vous qu'il est important qu'il y ait des pratiques digitales au sein même des conseils d'administration?

Je pense que c'est un minimum d'utiliser ces outils dans le conseil d'administration mais ça ne suffit pas. Cela permet également la flexibilité du travail. Déjà, si on a une aversion à travailler avec ces outils-là, c'est mauvais signe. Cependant, il faut continuer à se voir en face to face car dans l'extrême cela peut être néfaste de se voir uniquement digitalement. Être ouvert à ces outils ne suffit pas pour dire qu'on est ouvert au digital mais c'est un premier point. De plus, il est vrai que pour avoir une stratégie digitale, le premier point est d'être digital en interne, dans les pratiques.

D. Role

De façon générale, plus le conseil d'administration est engagé dans son rôle mieux c'est. Il faut faire au moins une session sur le digital chaque année afin de monitorer les initiatives en cours, d'évaluer de nouvelles initiatives, etc.

Dans quelle mesure le conseil d'administration doit-il développer la vision et la stratégie digitale?

Il faut d'abord que le conseil d'administration connaisse la stratégie métier et qu'il la fasse évoluer en fonction du digital.

Dans quelle mesure le conseil d'administration doit-il conseiller le CEO sur le digital?

Ceci dépend de s'il y a les compétences autour de la table. Mais je ne pense pas que ce soit le premier rôle du conseil d'administration. Ou alors en stratégie, ce qui rejoint le point précédent.

Dans quelle mesure le conseil d'administration doit-il contrôler et monitorer les initiatives importantes liées au digital?

Contrôler et monitorer des budgets et des initiatives, c'est très important.

Dans quelle mesure le conseil d'administration doit-il gérer les risques liés au digital?

Ceci aussi est très important. Quand on digitalise, il faut quand même gérer les risques.

Est-il important que le conseil d'administration perçoive bien son rôle par rapport au digital?

Oui c'est important, c'est peut-être la première chose à mesurer, s'ils sont conscients qu'ils ont un rôle à jouer dans la transformation digitale.

E. Culture and leadership

Dans quelle mesure l'ouverture du conseil d'administration au digital et à la transformation de l'entreprise est-elle un facteur déterminant la maturité digitale du conseil d'administration?

C'est important, une des premières choses. Ce qui est important ici aussi c'est l'ouverture à la transformation car être ouvert au digital c'est être ouvert à de gros changements dans les processus.

Dans quelle mesure l'ouverture du conseil d'administration au digital et à la transformation est-elle un facteur déterminant de l'approche digitale générale de l'entreprise?

Cela dépend du rôle du conseil d'administration et de s'il est actif ou pas, etc.

Qu'est-ce qui fait que le conseil d'administration est ouvert?

L'âge a un impact mais ça ne détermine pas. Il faut de la créativité, de l'imagination et une volonté d'évoluer. Car le digital c'est potentiellement des problèmes sociaux, comme on l'a vu chez Proximus.

Pensez-vous qu'il existe d'autres dimensions non incluses dans le modèle qui pourraient mesurer la maturité digitale du conseil d'administration?

Non cela me paraît complet.

5. Francis Heymans: 27/03/2019

Part I: Introduction**Est-ce que vous pourriez vous introduire et expliquer votre carrière et expérience?**

J'ai commencé ma carrière après les études dans la vente d'espaces publicitaires, par après, j'ai rejoint le groupe Petercam. J'y ai été dans le sell side, le brokerage, donc, vendre des actions belges et hollandaises aux USA. J'ai été donc basé là-bas. J'y étais en contact avec les institutions qui achetaient des actions belges. En revenant en Belgique, j'ai géré une société qui s'appelle Camrail, c'était des bureaux de change. On était grossiste et on faisait du retail de monnaie. J'ai, également, ajouté dans les services qu'on offrait "Western Union", le transfert d'argent pour les non-bancarisés. J'ai introduit cela sur le marché belge à travers nos propres agences et d'autres réseaux. Après, je me suis mis à marketer le savoir-faire de Petercam dans la gestion de fond, donc, la gestion institutionnelle. J'ai donc développé tout ce qui est de la gestion institutionnelle. J'étais l'associé responsable de la gestion institutionnelle au niveau du business développement. J'ai fait ça jusqu'à la fusion avec Degroof. Je me suis alors reconverti, j'ai rejoint un groupe industriel belge qui m'a demandé de restructurer une société en France. Une société qui fabriquait des céréales pour petit-déjeuner. J'ai quitté cette société il y a deux semaines.

J'ai l'intention de prendre des rôles d'administrateur indépendant dans des sociétés financières. Potentiellement, je pourrais m'engager dans un projet entrepreneurial.

Quelle est votre expérience par rapport au rôle de directeur/administrateur?

Chez Camrail, j'étais directeur général et administrateur au conseil d'administration. Chez Petercam, j'ai toujours été un directeur. J'ai eu des rôles d'administrateur chez Petercam Belgique et Luxembourg dans des fonds. J'étais, également, président du conseil. Chez Dailycer, j'ai été, également, président du conseil de la holding et directeur général de l'entité en France.

Quelle est votre expérience avec le digital?

Chez Petercam, on a changé tout le système ERP et ça a été compliqué. J'ai été très impliqué dans tout ce qui était automatisation et autres dans la société elle-même, liés à mes activités (la gestion institutionnelle) avec l'interconnexion sur plein de choses, CRM, administration des fonds, etc.

Chez Dailycer, je suis arrivé au moment où on devait implémenter un nouvel ERP et où on parlait d'automatisation.

Part II: digital

Quel est le rôle du conseil d'administration par rapport au digital?

Je crois qu'un conseil d'administration doit avoir des administrateurs complémentaires. Dans le sens où, un conseil d'administration devrait avoir au moins un administrateur qui apporte un savoir-faire au niveau du digital ou tout au moins une vision digitale. Potentiellement, il y a un risque et donc, c'est le rôle des actionnaires à travers le conseil d'administration de donner une vision à long terme sur la digitalisation. Cela, pour pouvoir bien opérer aujourd'hui mais surtout, pour pouvoir bien opérer demain. Et donc, pour donner un espoir de survie à la société sur le long terme. Un comité de direction est beaucoup plus court-termiste qu'un conseil d'administration et donc, c'est clairement le conseil qui joue un rôle par rapport au digital. Donc oui, c'est clair que le conseil d'administration a comme rôle important de s'y atteler.

Qu'est-ce qui permet à un conseil d'administration de jouer son rôle dans la transformation digitale d'une entreprise?

Il y a plusieurs comités dans un conseil d'administration (audit, rémunération, stratégie). La question est de savoir si on discute le digital au comité stratégique ou s'il faut carrément créer un comité digital. À mes yeux, selon le type de société et le type de secteur, il se peut qu'on crée carrément un comité digital qui apporte une vision sur le long terme en ce qui concerne la digitalisation, les risques et opportunités que ça apporte, etc. Mais ça dépend du secteur. Je crois qu'un Degroof Petercam aujourd'hui est supposé avoir un comité digital. La digitalisation, la blockchain, etc. feront évoluer le métier de la gestion de patrimoine et je crois que c'est vraiment nécessaire, dès lors, d'avoir un comité qui invite aussi systématiquement des externes pour avoir des insights sur les différentes technologies qui pourraient être implémentées mais aussi des challenges business. Quand on parle digitalisation on parle de perdre des gens et de reformer des gens. Les business vont complètement changer. Mais cela crée aussi des opportunités. La digitalisation ne va pas que faire disparaître des métiers mais au contraire pour chaque métier qui va disparaître trois autres seront créés.

Part III: Digital maturity model

Que pensez-vous du concept de modèle de maturité digitale du conseil d'administration?

En lisant ton modèle je pense qu'il y a de nombreux secteurs dans lesquels si on n'a pas une vision à long terme, la digitalisation va être très difficile et disruptive sur leur business model avec des conséquences énormes. Dans un conseil d'administration on parle aujourd'hui des trois « P »: People, Planet et Profit. Je crois que si on ne s'outille pas, on peut tout simplement disparaître.

A. Digital capital

Dans quelle mesure les connaissances digitales sont-elles importantes pour un conseil d'administration?

Les administrateurs doivent être complémentaires, on ne peut pas tous avoir le même niveau de savoir-faire, de connaissances, de compétences ni de réseau. Tout dépend bien sûr de quel type de société on est. Chaque société a ses défis digitaux mais pas pour toutes les sociétés, c'est aussi important.

Je crois que le capital digital c'est un critère très important. Il faut avoir aujourd'hui une vision pour anticiper ce que sera demain.

Dans quelle mesure les skills digitaux sont-ils importants pour un conseil d'administration?

Un conseil d'administration peut avoir des gens très âgés dans son conseil, des gens qui ont beaucoup d'expérience.

Les jeunes sont beaucoup plus entreprenants en général. Donc, il est clair que ce que je vois c'est que des jeunes entrent dans des conseils d'administration. Pour te dire que j'entendais ça au niveau de l'association des conseils d'administration, Guberna, qui veut intégrer des jeunes dans son conseil car ce sont les jeunes qui sont en train de préparer l'avenir. Donc oui, la compétence est très importante mais on ne la trouve pas dans les conseils d'administration aujourd'hui et donc, il faut se préparer à cela. Par exemple, en engageant des administrateurs au conseil d'administration, plus jeunes ou en ajoutant des jeunes gens à venir exposer leur vision, leur sentiment et autres. Je ne pense pas que des multinationales puissent engager des jeunes dans leurs conseils d'administration mais

cependant avoir des groupes de travail avec eux c'est intéressant. On a besoin avant tout de complémentarité.

Dans quelle mesure les aptitudes digitales sont-elles importantes pour un conseil d'administration?

C'est important. Tous les administrateurs n'ont pas le même niveau de compétences et donc, il faut que tous les administrateurs arrivent à un certain niveau. Pour cela il faut inviter les administrateurs à des workshops pour qu'ils soient sensibilisés aux défis de demain. Donc oui, ça se fait.

J'ai connu des associés administrateurs qui étaient vieux-jeux, de la vieille garde et qui n'étaient plus du tout intéressés. Et ça tue des sociétés. C'est pour ça qu'il faut mettre tout le monde à niveau. C'est un travail du président du conseil. Il est supposé mettre les gens à niveau. Le président du conseil doit faire participer tous les administrateurs pour qu'on puisse voter unanimement et pour cela, il faut avoir tout le conseil aligné et donc à niveau. En plus d'avoir un comité digital ou administrateur digital, il faut que tous les administrateurs s'y intéressent. Sinon ça peut bloquer des énormes investissements. Des administrateurs qui ne voient pas l'importance peuvent être vraiment contre-productifs. Le président doit absolument s'assurer que tout le monde est à niveau.

Dans quelle mesure les contacts dans le monde digital sont-ils importants pour un conseil d'administration?

Quand un administrateur a été attiré spécifiquement pour son caractère digital il apporte automatiquement son réseau au comité de direction ou au COO/CDO. Un administrateur n'est normalement pas impliqué dans l'opérationnel mais peut apporter son réseau.

B. Digital structure

Que pensez-vous de la présence de directeurs digitaux et/ou de comités digitaux dans le conseil d'administration et de conseils composés de non-administrateurs qui soutiennent les conseils d'administration?

Comment dire selon le niveau de maturité dans la société au niveau de leurs connaissances et leur sensibilité à tout ce qui est digital et les effets disruptifs que cela peut avoir sur leur business modèle, on passe d'un conseil vers un comité ou un

administrateur dédié au digital. Il y a plusieurs niveaux. Ton modèle est là pour dire dans quelle situation suis-je avec tel conseil d'administration.

Est-ce qu'on peut avoir en même temps un directeur digital et un comité digital?

Bien sûr.

C. Processus

Est-ce que vous pensez que le digital doit être un critère dans ces processus?

Tout commence par le conseil d'administration et les actionnaires. Le processus doit, je crois, être top down. Cela veut dire que cela commence par les actionnaires et le conseil d'administration qui doivent être conscientisés et de nouveau, le président joue un rôle très important parce que c'est lors de l'auto-évaluation de son conseil d'administration qu'il se rend compte qu'il a, ou pas, la bonne personne qui peut accompagner le conseil d'administration dans le digital. Même si le comité de direction vient avec des idées et initiatives, si le conseil d'administration n'est pas préparé, il ne peut pas voter ces investissements. Donc, tout commence par le conseil d'administration.

Concrètement, c'est le rôle du président de mettre le digital à l'agenda et au fur et à mesure que cela est pris au sérieux, viennent des comités digitaux, directeurs digitaux, etc. De façon générale, les conseils d'administration qui ne discutent pas de digital doivent aujourd'hui vraiment se poser des questions. Parfois, il faut engager un administrateur indépendant qui apporte son savoir-faire par rapport au digital.

Pensez-vous qu'il est important que le processus de recrutement du CEO tienne compte du digital?

Si le président et les administrateurs décident d'avoir un comité cela veut dire que ce comité prépare des choses, met les autres administrateurs au même niveau etc. Logiquement, les exécutifs seront aussi impliqués dans ces comités. Le CEO et si pas le COO ou CDO doivent être impliqués. Si le CEO n'est pas réceptif, qu'il n'est pas ouvert là-dessus, il se peut que ce ne soit pas le bon CEO. Si un conseil d'administration commence à travailler sur un modèle disruptif et qu'on sent qu'il n'est pas le bon gars pour la société de demain alors il faut changer de CEO.

Ces processus doivent-ils être formalisés?

Oui, très clairement.

Pensez-vous qu'il est important qu'il y ait des pratiques digitales au sein même des conseils d'administration?

Je pense que cela ne montre pas spécialement la maturité digitale du conseil d'administration. Tu as peut-être raison mais je ne crois pas que tu ne peux pas juger uniquement sur cet aspect. Un administrateur qui n'est pas à jour il peut toujours être formé sur cela.

Pensez-vous qu'il est relevant d'inclure les pratiques digitales privées au sein même des conseils d'administration?

Oui, c'est clairement important. Mais on ne pourra jamais obliger les administrateurs à se mettre sur les médias sociaux et à utiliser les aspects de la digitalisation etc. C'est cependant très important que l'administrateur s'intéresse à la façon dont la société participe au monde digital. Par exemple, une société de marketing. Le marketing digital est aujourd'hui un axe tellement important que je ne peux imaginer qu'un administrateur de tel type de société ne soit pas sur les médias sociaux. Cependant, un administrateur d'une société industrielle qui vend en B2B n'a pas la même application du digital (plutôt l'automatisation des processus) et il ne faut donc pas demander la même chose de ces administrateurs en termes d'utilisation privée du digital. Donc, tout dépend du secteur.

D. Role

Dans quelle mesure le conseil d'administration doit-il développer la vision et la stratégie digitale, conseiller le CEO sur le digital, contrôler et monitorer les initiatives importantes liées au digital et gérer les risques liés au digital?

Tout commence par ce point-ci. En fait c'est presque un processus. Une fois que tu crées un comité, il aura comme rôle de passer par ces différentes étapes. Il faut identifier et gérer les risques entre autres mais aussi les opportunités ce qui permet d'aller vers la vision et la stratégie digitale, que le conseil d'administration implémente à travers le CEO et qu'ensuite, le conseil d'administration contrôle. Ensuite, il faut recommencer, c'est une boucle.

Ce qui est important aussi, c'est l'auto-évaluation du conseil d'administration ou du comité. Une fois qu'on a mis tout ça en place, est-ce que cela a son effet sur la société? Est-ce qu'on a les bonnes personnes? Est-ce qu'on travaille bien ensemble? Est-ce qu'on a pu apporter quelque chose d'important à la société?

Il y a beaucoup de sociétés qui ratent le coche hein, par exemple BlackBerry. Il faut croire qu'eux au niveau du comité digital ils n'ont pas bien travaillé. Donc, l'auto-évaluation est très importante.

Est-il important que le conseil d'administration perçoive bien son rôle par rapport au digital?

Un comité dans un conseil d'administration c'est parce que pas tout le conseil d'administration est capable de donner son avis et donc, le président du conseil d'administration délègue le travail à ce comité. Donc, le conseil d'administration, quand il est d'accord qu'un comité soit créé, est normalement supposé accepter tous les conseils donnés par ce comité. Tous les administrateurs devraient être d'accord avec ce que le comité dit. Si ce n'est pas le cas, le président doit intervenir. Cela veut dire qu'il y a des choses qui ne fonctionnent pas, qu'on n'a peut-être pas les bonnes personnes.

E. Culture and leadership

Dans quelle mesure l'ouverture du conseil d'administration au digital et à la transformation de l'entreprise est-elle un facteur déterminant la maturité digitale du conseil d'administration? Comment peuvent-ils être ouverts?

Comme je l'ai déjà dit c'est capital. Pour que le conseil soit ouvert, le président est crucial et vu que l'actionnaire propose le président c'est à la limite lui qui sera le plus important dans tout cela. Le CEO peut également apporter des sujets auxquels le président ne pensait pas.

Pensez-vous qu'il existe d'autres dimensions non incluses dans le modèle qui pourraient mesurer la maturité digitale du conseil d'administration?

Je crois qu'une dimension importante est le profit. Pour pouvoir investir dans le digital il faut avoir les revenus nécessaires pour investir là-dedans. C'est du réalisme. S'il n'y a pas assez de profits on ne peut pas investir. Les deux vont ensemble.

6. Geert Kelchtermans: 05/04/2019

Part I: Introduction

Can you introduce yourself (career, experience, role)?

I have been leading the digital transformation of Proximus for five years now. I have different heads, meaning that I am leading the transformation (which is more the strategy, the positioning and so on) and, next to that, I am leading the digital studio activities (all the front-end activities we develop: websites, applications) and, thirdly, I also manage the sales house (the advertisement sales, where we have targeted advertising, TV advertising and new projects coming up). As an underlying layer I also manage the CRM and other tools for the Proximus group. As transformation head I report directly to the CEO but hierarchically I am under what we call the consumer division. So, my hierarchical chief is Guillaume Boutin, who is Chief Consumer Market Officer. My functional chief for the part of transformation is Dominique Leroy, the CEO. I studied economics, I have two master's degrees.

Part II: Digital

How important is digital for Proximus?

It is very important, it is at the heart of the strategy that we defined already a few years ago. It was one of the building blocks of the strategy, but now with our shift to digital strategy it has really become the cornerstone of our strategy. We want everything to become digital with also consequences on resources, like announced in the press a few months ago. But we truly believe that it is a trend we cannot stop and we do not want to stop it neither. We feel it as a customer. We need to engage in that with our customers.

Is digital a key issue in the role of your CEO?

Yes, we defined several critical enablers to execute our strategy "shift to digital": customer experience (through customer journeys), fibre (roll out project which is a massive investment in terms of capital), simplification and digital. And the four people leading those tracks respond directly to the CEO on these topics. So, it is very important to her as well.

What is the role of a board of directors with regards to digital?

I think it should be leading a part of that. The aim of the board is not to sit there and wait for return on investments. The board should be guiding the strategy and engaging on discussion on a three to then year evolution of the company. At Proximus we are atypical as the main shareholder is the state. It does not mean that digital is not part of our board's concerns, but it is not their main concern. I think they see it as a means to get somewhere more than a topic as such. Though, our executive board sees it as a transformation part. I think the board is there to support the executive team in how to get to the financial results of the company and sustain the growth. It is not the board that will say that you have to do a digital transformation, though the board is supporting the strategic plans of the executive teams to do the digital transformation.

What enables a board of directors to conduct its role in digital effectively?

It is mainly on a mandate level towards the executive team, you cannot expect from the board to provide concrete things you have to do. They do not know the company enough for that, they are not owning the company, they know more about Telecom. Their role is mainly in the support, in giving mandate to the executive team, that knows the company, knows the market, to identify what is best to do. And to accept from time to time difficult decisions, for instance, the restructuring of Proximus. A board needs to endorse that. The enablement is there, to trust the management team, at least for Proximus, to say that it is an important topic and that they engage into that.

Part III: Digital maturity model

What do you think of the concept of a digital maturity model for boards of directors?

You must make a distinction between two types of companies. First, companies that are family-owned, where the board is mainly composed of family members. Secondly, public or private equity owned companies. I think the dynamics are different. It is a nuance between both domains. I think in a family business the board will be much more involved and will be driving the strategy (digital or not). The risk of a not family-owned company is that you look more at it from a cost benefit perspective and thereby you have a different way of looking at the company. Though, I think that digital should be at the cornerstone of every company today, knowing that in a family-owned business it might be much more driven by the board whereas in a shareholder structure it might be much more driven by

the executive team. It is a perspective, I am not sure it is completely rational. But digital is everywhere, if a board is not concerned about digital disruption or transformation, there is a problem. I know for sure that at Proximus they had topics on digital, they had someone talking about it, the chairman goes to Silicon Valley, sees what happens. There is a kind of emergency that the world is changing but I think it is more the executives saying to the board “hey guys look what is happening out there” than the other way around. There are a few technical people in our board, but there are also a few political people, which is typical for Proximus. Again, it might be that in other companies it is different, that they put different people in boards to have another mix.

Should different companies have different levels of board digital maturity?

For sure. I think the strategic need of a company is different depending of the domain in which it is operating. For instance, a start-up only working in digital might gain more from a board which is acquainted in corporate governance and knows how to put a brand in the market, how to build a long-term strategy than from having a digital savvy guy in the board giving digital advice as they probably all know about digital. I think it depends on which type of company you are and what you need for your growth.

What is your first view on the model?

At first sight, the model looks complete to me. You have the basis, the structure around and, then, how the structure interacts with the basis. These are typically the three things you would need. The dimensions seem pretty logic to me.

A. Digital capital

Something the other people I interviewed often said is that boards do not need digital skills but that digital knowledge is enough. Do you agree with that?

I tend to agree with that. Is it mandatory that you have someone who knows how to code? Not sure. The question is, “how far does a board have to go in the strategy?”, and that is different for each company, though, digital is moving so fast. Typically, now there is the entire ecosystem work (Google is expanding, Salesforce is expanding, ...). Having the hands in it you understand much more what is happening and the risks that are there. So, I am going to correct what I just said as I think it might be that for certain domains having someone that has the hands in might bring an added value because you cannot understand

the full extent of what is happening if you do not understand the ecosystem. Understanding the ecosystem and its relationships is not easy. Typically, Google and Salesforce offer a lot of tools but you can imagine doing much with Google means sharing a lot of data with them and you are never too sure what they do with it. So, there are fundamental discussions on how far you want to engage in those ecosystems and, therefore, you need to have someone hands on.

B. Digital structure

If you hire a digital officer today you are five years too late. As I see it, digital is becoming the new normal and a chief digital often now becomes a chief business or chief technology officer. It becomes the norm to be digital, it should be integrated. It would be strange that a company would have a digital committee at board level because it means that you are not mature at all and that you really need to focus on digital.

C. Processes

Do you believe meeting practices of the board and its committees are enablers of digitally mature boards of directors? Which meeting practices are essential for you in a digitally mature board?

It is walking the talk, I agree on that. There you touch to the way of working. For instance, the boardroom here is not very inspiring, it is formal. For me if you want to engage into digital, you need to breathe digital and, so, the way of working and the environment need to evolve. For instance, here, at Proximus, we do not have personal offices anymore, the environment is more and more open. I think you can think on how you manage the board. Why is everybody sitting? Why can you not have stand ups? Which is a completely different way of looking at things. Digital is not only about computers, it is also about how you interact and so on.

I think it is a fair question, how do they engage with digital as a board, how do they lead by example on digital.

D. Role

Digital can disrupt a company on different parts. It is good to have a digital vision but you can have it on experience and on business models. For instance, Uber disrupts on business models, it is not a technology disruptor. It is important to add that nuance somewhere

when you talk about digital vision and strategy, that it can be technical or business models. It is two different things. The technical ones are the easy ones, the business model disruptions are the dangerous ones.

Do you agree with the four roles I defined?

I think another role as well is that they need to spread the word; if you want to be perceived by the market as a digital frontrunner, you need to spread the word. That is part of their role as well. You have the traditional roles: vision & strategy, advice, controlling, managing risks. There is also the communication part, to carry out digital as one of the cornerstones.

E. Culture and leadership

To what extent are the openness of the board of directors to digital and to transformation determining the general digital approach of the company?

I think it absolutely impacts. Though, for a company like Proximus, the board is really far away and what is driving the company is the executive team. It might be different in a family-owned company, there you might have the board that is much more shaping the culture of the company as directors are much more involved in the day to day business.

Do you believe there are other dimensions that are not included in the model that could measure the digital maturity of the board of directors?

For me there is one thing, the way of working. I think digital requires new and other ways of workings, which is mainly linked to the digital structure and the processes: design thinking, agile. At board level it might be interesting to have someone who has a clear vision on how an organisational structure needs to evolve in a digital transformation context. I am not seeing that in the model. This is missing because digital always comes with a new way of working, which structurally and fundamentally impacts a company.

It is something I could include in the digital capital?

Yes, why not.

7. Fabrice Massin: 27/03/2019

Part I: Introduction

Est-ce que vous pourriez vous introduire et expliquer votre carrière et expérience?

Je suis le Chief Transformation & Digital Officer de RTL Belgium et Luxembourg. J'ai auparavant travaillé à la RTBF en tant que Interactive Media Executive Director. J'ai aussi travaillé chez Belgacom.

Part III: Digital maturity model

Est-ce que différentes entreprises doivent avoir des conseils d'administration avec des maturités digitales différentes?

Oui, bien sûr.

Que pensez-vous du concept de modèle de maturité digitale du conseil d'administration?

Je pense que les conseils d'administration n'ont pas un réel impact. Après, il faut faire une distinction entre une entreprise privée et une entreprise publique. Dans le cas de l'entreprise publique c'est un peu différent mais ce n'est jamais un conseil d'administration qui donne la stratégie. Je pense que votre modèle peut les aider à comprendre et à décoder certaines choses et peut-être à soutenir les décisions d'un CEO mais pas à driver l'entreprise.

A. Digital capital

Dans quelle mesure les connaissances digitales sont-elles importantes pour un conseil d'administration?

Dans un conseil d'administration ce qui est important c'est la connaissance car lorsqu'ils sont confrontés à un plan de transformation dans lequel on dit du jour au lendemain qu'on doit virer 20% des gens parce que le digital nous force à nous réinventer, il faut qu'ils comprennent le secteur dans lequel ils sont, comment les concurrents agissent, pourquoi le secteur bouge et quel est le lien avec le digital. Souvent le digital a bon dos. Souvent on veut réduire les coûts et du coup on dit que c'est à cause du digital. C'est donc crucial que le conseil d'administration comprenne et pour cela il doit avoir de bonnes connaissances.

Dans quelle mesure les skills digitaux sont-ils importants pour un conseil d'administration?

Les skills ne sont pas une nécessité, d'ailleurs la plupart n'en ont pas. Mais comme toujours, quand on est dans une position d'observation comme un conseil d'administration, il faut comprendre la stratégie que vient nous présenter un CEO, il faut comprendre les raisons de cette stratégie et l'impact sur la société. Et il ne faut pas avoir spécifiquement des compétences digitales (comme savoir coder un site internet) quand on est dans un board. Il faut avant tout comprendre et connaître.

Dans quelle mesure les aptitudes digitales sont-elles importantes pour un conseil d'administration?

C'est important mais le problème est que les personnes qui ont ce genre d'aptitudes sont vraiment rares, surtout en Belgique. En plus il faut voir au niveau des conseils d'administration. Les gens invités dans des conseils d'administration sont souvent dans des autres business ou sont des parachutés du niveau politique ou autre et ils ne maîtrisent pas tout cela. Après, c'est bien d'avoir ce genre de capacités, c'est juste difficile à obtenir et ce n'est pas toujours présent dans les conseils d'administration.

Dans quelle mesure les contacts dans le monde digital sont-ils importants pour un conseil d'administration?

J'aurai tendance à dire que c'est important mais dans 99% des cas ils n'auront pas ce genre de contacts. Dans des sociétés comme Carrefour, Colruyt ou ING, par exemple, il y a peu de chances qu'ils aient des contacts avec des gens dans des sociétés comme Google ou Apple. Mais c'est vrai que ce serait un plus.

B. Digital structure

Que pensez-vous de la présence de directeurs digitaux et/ou de comités digitaux dans le conseil d'administration et de conseils composés de non-administrateurs qui soutiennent les conseils d'administration?

Je pense que les deux derniers points ne sont pas spécialement nécessaires. Le but d'un conseil est de pouvoir conseiller, éventuellement de donner des avis. Si eux-mêmes doivent se faire aider par d'autres c'est qu'ils ne sont peut-être pas à leur place.

Cependant, avoir une personne qui vient du monde digital dans le conseil d'administration c'est vraiment bien car cette personne apportera une vision digitale et aura un regard différent. Mais je considère que faire un comité digital dans un comité ce n'est plus au goût du jour; aujourd'hui, tout le monde doit avoir une connaissance du digital car c'est un des grands enjeux. Un comité avec certaines personnes qui parlent du digital ça sous-entend que les autres administrateurs ne sont pas assez compétents pour parler des sujets digitaux. C'est faire du digital en silos. Maintenant, tout le monde est contraint par le digital et donc cela doit être imprimé dans l'ADN.

C. Processes

Est-ce que vous pensez que le digital doit être un critère dans ces processus?

Oui, je pense que les compétences digitales doivent entrer en jeu. Malheureusement, les administrateurs dans les entreprises publiques ne sont souvent pas choisis sur base de leurs compétences. Dans les entreprises privées c'est souvent le CEO lui-même qui essaie d'avoir des profils différents dans son board.

Le problème c'est qu'à ce niveau-là c'est n'est pas un engagement, les personnes ne sont pas payées à temps plein par la boîte. Il ne s'agit pas de mettre des processus en œuvre.

Si vous prenez la RTBF, il va y avoir des élections et la proportion des votes aux élections pour les partis va être reflétée dans le conseil d'administration de la RTBF car c'est une entreprise publique. Ce n'est pas une bonne chose mais c'est le propre d'une entreprise publique et c'est comme ça dans la plupart des pays. Ce qui fait qu'on a des administrateurs qui n'en touchent pas une dans le secteur concerné et qui ne connaissent rien de tout cela.

Pensez-vous qu'il est important qu'il y ait des pratiques digitales au sein même des conseils d'administration?

J'ai déjà tout vu... De nos jours ces pratiques ce n'est même plus du digital pour moi, c'est la base. Si on ne fait pas ça aujourd'hui, ce n'est pas normal... Quand on est dans un board il faut savoir utiliser ces outils modernes.

D. Role

Dans quelle mesure le conseil d'administration doit-il développer la vision et la stratégie digitale?

Le conseil d'administration doit toujours se poser la question inverse, s'il n'y a pas de stratégie digitale dans la boîte c'est qu'il n'y a pas les compétences dans la boîte et que le CEO n'est peut-être pas compétent. À ce moment-là, le rôle du conseil d'administration est d'assurer les objectifs à long terme de la boîte, d'assurer que les revenus augmentent, que les gens soient bien formés, etc. Si un board n'entend pas parler d'une stratégie digitale de façon régulière ou qu'il n'y en a pas, alors le board doit envoyer un signal qu'il y a un problème. Le conseil d'administration ne fait pas la stratégie mais doit se dire que s'il n'y en a pas ce n'est pas normal.

Dans quelle mesure le conseil d'administration doit-il conseiller le CEO sur le digital?

C'est clair que si le conseil d'administration voit que le CEO n'est pas au fait alors il peut essayer de l'aider, de voir comment il peut être coaché mais de nos jours quand on a un CEO qui n'est pas bon on ne l'engage pas ou on le change. C'est possible qu'un CEO soit très bon dans tout le reste que le digital et alors on l'aide avec un autre CEO qui se spécialise sur le digital.

Dans quelle mesure le conseil d'administration doit-il contrôler et monitorer les initiatives importantes liées au digital?

Le board doit contrôler les gros investissements et il doit aller plus loin, il doit demander des éléments de mesure, il ne doit pas les définir lui-même afin de pouvoir contrôler. C'est essentiel et le board doit être capable de vérifier ces indicateurs de mesure et pour cela de les comprendre.

Dans quelle mesure le conseil d'administration doit-il gérer les risques liés au digital?

Même opinion que pour le rôle de contrôle et de monitoring. Par exemple, Elon Musk, patron de Tesla et SpaceX et membre du board. Il y a quelques mois il a dit qu'il voulait retirer Tesla de la bourse. En tant que CEO il n'a pas le droit de dire ça. Le conseil d'administration a alors décidé que le CEO ne pourrait plus communiquer sur les aspects

financiers de la boîte. C'est un exemple d'un conseil d'administration qui agit pour empêcher un CEO de mettre la boîte en danger.

E. Culture and leadership

Dans quelle mesure l'ouverture du conseil d'administration au digital et à la transformation de l'entreprise est-elle un facteur déterminant la maturité digitale du conseil d'administration?

De nos jours cette ouverture est essentielle. La plupart des administrateurs de sociétés privées sont des CEOs d'autres sociétés. C'est essentiel qu'ils comprennent car quand on veut opérer une migration digitale dans une entreprise c'est que les valeurs digitales, la culture digitale imprègnent l'entreprise. C'est souvent ça le facteur clé de l'échec ou de la réussite.

Dans quelle mesure l'ouverture du conseil d'administration au digital et à la transformation est-elle un facteur déterminant de l'approche digitale générale de l'entreprise?

Dans le digital on est généralement dans la promotion de l'individu qui prend des responsabilités et qui n'est plus dirigé par un chef comme avant. La structure digitale est orientée autour du partage de connaissances et donc, quand on veut assurer une transformation digitale, on doit revoir la structure et aussi les valeurs et la culture de l'entreprise. C'est souvent ça qui fait que ça marche ou pas.

Les administrateurs doivent être au fait de ça, ils doivent pouvoir voir comment ça fonctionne dans l'entreprise pour laquelle ils sont administrateurs.

Pensez-vous qu'il existe d'autres dimensions non incluses dans le modèle qui pourraient mesurer la maturité digitale du conseil d'administration?

Souvent une dimension qui empêche et qui fait qu'on va plus vite dans la transformation digitale c'est l'élément des revenus, de l'EBITDA. Dans une entreprise cotée tout est drivé en fonction de ce qui revient à l'actionnaire in fine. Souvent on ne va pas mettre en place une stratégie digitale car elle coûte trop d'argent ou n'en rapportera pas assez vite. Quand on fait une transformation digitale on n'a pas toujours les revenus espérés.

8. Saskia Van Uffelen: 05/04/2019

Part I: Introduction

Can you introduce yourself (career, experience, role)?

I am digital champion of Belgium, trying to sensitize companies to evolve to digital and thereby to transform as soon as possible. I am also independent non-executive board member in companies in Belgium. So, I am working both on theoretical and practical sides of your topic.

Part II: Digital

I make a big difference between digital that is used for automation, which is the extension of the IT 3.0, and the aspect of digital disruption, which is about what I am going to do today to perform tomorrow, really thinking the value adding of the organisation, which is related to technology but also thinking about how to recreate the organisation. It is important to specify on which aspect you work.

I would say my thesis is more focused on the disruption in the sense that in my view boards of directors are looking at what will happen tomorrow.

They should be, that is going to be one of my next remarks.

What is the role of a board of directors with regards to digital?

The governance has changed on non-executive board members as they should also challenge the operational managers, going forward. The role has changed fundamentally as has the responsibility of the board.

What enables a board of directors to conduct its role in digital effectively?

Do we have the right competencies at the moment in the boards? The answer is clearly no. Boards are still restricting the old business of the organisation so they will challenge them on financial efficiency. But their role should also be to challenge on what the executives are going to do tomorrow if they are disrupted by new competitors that didn't exist before. And that is not present at all in 80% of the boards.

Should different companies have different levels of board digital maturity?

I am not sure. I think all sectors will be disrupted like hell. We are at the end of pulling everything of the former way of working and disruption is looking behind the corner for every single company. So, I am not sure that we need to make differences. The content of disruption will maybe be different, but I do not think that your model should be different.

Part III: Digital maturity model

What do you think of the concept of a digital maturity model for boards of directors?

Certainly, we need to put some measurable aspects to make it clear to boards that they are not there yet. They are convinced that everything is fine. We need to create a reference frame they can use to compare themselves with others. I think it is a very good idea to build such a model.

I had a look at the model and I think it is valid. I tried to do it the last months with thirty CEOs and presidents of boards. If I may just make one recommendation is to really clarify what you mean by digital. For 80% of the boards it is still IT 4.0. and they say that they have all the competencies and that they are doing very well but it is not the case at all. It is interesting that they work on digital in the sense of IT 4.0. but there is nothing disruptive in it.

A. Digital capital

What do you think of these four subdimensions?

I think it is complete, it is covering most of the aspects. It will just be, maybe, a little bit difficult, for them, to differentiate between knowledge and skills. Maybe it should be clarified. For instance, what is the difference between expertise and knowledge. For me, for instance, when I am talking about digital skills it also takes into account the knowledge.

What do you think should be the level of skills or knowledge of a board of directors?

Mmmmh, it depends a little bit. I need people in a board to be complementary in competencies. I need finance people, sector-related people and people that can be more disruptive and strategic. It is acceptable that not everybody has the same level of digital competencies. For instance, the people that are in a digital committee should have more developed digital competencies than others. They should all have at least a basic level, which is not the case today. They should all know the basics of VR., AR., AI., etc.

What do you think should be the level of abilities or network of a board of directors?

One of the roles of the board is to have a network. If you want to think out of the box, you need to have a network. I think it is maybe valid in all specifics. If you need to have the best in finance, you also need a network in finance.

B. Digital structure

Is having one or more digital directors a key enabler of digitally mature boards of directors?

Yes

How many digital directors should there be?

It depends a little bit on the size of the organisation. They should not over skill. If they can at least have one, it is already something. If you have a board in financial markets, in the risk committee it is already mandatory to have someone with digital knowledge.

What should be the digital director's role?

At least to bring value and being a person looking always for complementarity. It is a competence that should always be present in a board.

Do you think the digital director should be independent?

Everybody should be professional, independent or dependent. It is easier to challenge the strategy going forward as an independent, I think.

Is having a digital committee a key enabler of digitally mature boards of directors?

What should be the role of this committee?

Should it be a digital committee? Some call it a strategic committee. It is in the word. I think the digital committee can be integrated these days. Time is over that it is a separate world. Naming it digital points out the importance of the digital aspects in the strategy. Because lots of strategic committees are still improving a little bit what they were doing yesterday and are not looking at the disruptive levels. Changing the name could change the focus of the attention.

To what extent could a digital advisory board help the board of directors conduct its role with regards to digital?

Either you have committees, either you have advisory boards. It is sometimes linked with the size of the organisation.

C. Processes

These are normally all the responsibility of the remuneration committee or corporate governance committee. The roles and responsibilities of that committee should integrate a selection of these criteria. This committee defines the selection, the development, the induction, the training and the CEO selection processes. It is just an additional dimension that should be added to the existing selection committees. All those governance processes need to be reviewed to include the digital dimension.

Do you believe meeting practices of the board and its committees are enablers of digitally mature boards of directors?

I am twisted on that one. Some boards do it digitally and some do it on paper, but it is not necessarily true that they are more or less digital because of that. It is also not always more efficient. If you cannot find a hybrid version between digital and paper it is sometimes less efficient. For example, the way of finding documents or comments that you have made at a certain moment in time, with digital it is not developed enough. They are just doing what they were doing yesterday but on digital platforms. But there is no search facility easily done, there is no data analytics, there is no clustering on specific subjects. The current platforms are not well enough developed to see if the boards are more digital or not through these platforms. These are still at the version 1.0.

Do you think a digitally mature board of directors should adapt its way of working to the digital ways of working such as agile, etc.?

Yes, but they would also need the tools and at the moment there are not yet such tools. There should be tools specifically for boards of directors.

D. Role

Do you agree with the four roles I defined?

I think the four roles make sense. One that is also essential is monitoring the competencies of the organisation going forward. Everybody is talking about the war of talents. You can define a strategy, but if you do not have a plan to have the right competencies at the right time, your strategy will not work and that is why companies are firing people because they do not have the right competencies and expect to find people with the right competencies. There should be a plan on how to retrain the entire organisation to get the competencies needed to execute the strategy. That is a very critical one.

If you go digital then you work with data. There should be something about security and ethics related to data, and that is much more than GDPR.

Do you think the board of directors also has a communication role?

Is that really the role of the board? For instance, the board makes an annual report but that is already part of today's governance and it talks about the challenges of the company and how the company wants to go forward. The results of all the committees should be reflected.

Do you think it is important that the board has a good perception and understanding of its role?

If you put a focus on it in the selection and remuneration committee, then, you are putting a focus on it. The answer is yes but you need to make it more concrete. And your maturity level is a way, integrated in the processes is another, your tools is another and I think everything together should help.

Should boards be asked how they perceive their role?

Yes, that is exactly what I did on a small scale. Two are busy doing it and know how to do it, three say that life changes slowly, that it is a hype and the rest says: "I know that we need to do something but I have no clue what it is". The last ones are the ones you can help with your maturity model. In 2019 we are far from where we should be.

E. Culture and leadership

What do you think makes a board open to digital or transformation?

I think the main aspect is the sense of urgency. They do not realise the sense of urgency, they do not realise that the old models... You can improve your quarterly results by cutting the costs (firing people) and that is what most do, but they do not sense enough the urgency of going digital.

By the way, nobody talks about the financial markets. As long as they evaluate companies on quarterly results you will not change the way the board works in a fast way. The day the financial markets evaluate companies on what they will do for the next ten years, there will be a drastic change in behaviour in the boards.

To what extent does the openness of the board to digital and to transformation impact the company in general?

For me it is the major shift they should make urgently because the old financial models will not work anymore and they will be disrupted by small, agile organisations, not coming out of the sector, they will not have the competencies they need and it will be a catastrophe going forward. I do not want to be negative, I am a little bit frustrated that it does not go faster. They would certainly have an impact if they would change their mindsets. But do not forget the financial analysts. Some board members tell me, yes, you're right, but we are not going to do that this quarter. If you do not give them an incentive in the organisation to do so, the question is: "What is the goal of the company?". To give value to shareholders and if they only want short-term results, then, everybody looks at you and says "maybe, but not now".

Do you think it is important to include this openness in the model?

Yes, with the additional remark on the financial aspect.

