The Board and CIO: The IT Alignment Challenge

Jacques Coertze
Nelson Mandela Metropolitan University
jacques.coertze@gmail.com

Rossouw von Solms
Nelson Mandela Metropolitan University
rossouw.vonsolms@nmmu.ac.za

Abstract

As the dependence on information and its supporting IT infrastructure has grown in the modern-day organisation, so too has the need materialised for closer business and IT alignment. Hence, this remains one of the primary aims and challenges of IT governance. Unfortunately, although such alignment may be seemingly trivial, it has remained a troublesome prospect for organisations worldwide throughout the last decade. Whilst knowledge of this alignment challenge has emerged, less attention has been devoted to understanding the collective role of the board and the chief information officer (CIO). Furthermore, the nature of the interplay between these roles within an organisation in successfully contributing to the resolution of this alignment issue remains unclear. This paper contributes to the above-mentioned concern by arguing towards a conceptual IT alignment continuum that elucidates the role of the board and the CIO and their interplay in relation to the IT alignment challenge, as they represent the core of IT and the business.

1. Introduction

In the corporate environment, dependence on information and its supporting IT infrastructure has seen tremendous growth in the past decade [25:13]. This has led to some believing that IT has become a mere commodity [5]. Although this may ultimately be true, IT is nowadays playing an essential role in facilitating competitive and strategic advantages for organisations worldwide [12,29:7].

Unfortunately, many organisations have realised that IT cannot in itself offer these advantages, but it is rather through its proper use and management, in alignment with the business's objectives, that corporate value can be obtained [15:6,25].

Hence, for any enterprise to achieve long-term sustainable success it is essential that all elements that comprise the enterprise, in particular IT, fully understand the corporate objectives and work together in a duly controlled and coordinated way to ensure that those objectives are met [27:5].

This alignment challenge remains one of the primary aims and challenges of IT governance [52,58:6] – "the framework that supports effective and efficient management of IT resources to facilitate the achievement of an organisation's strategic objectives" [23:103].

Unfortunately, although such alignment may be seemingly trivial, it has remained a troublesome prospect for organisations worldwide throughout the last decade [60], with some suggesting that it is the biggest challenge they face in successfully utilising IT [34].

The question that remains unanswered is whether this challenge is a consequence of a lack of clarity or involvement from the board or because of IT's inability to interpret and translate what the board wants in business terms into applicable actions for the IT functions; more specifically is it as a result of the board's lack of closeness to IT or IT not being closely involved with the business [27:6].

This is one of the reasons why alignment is so important [16]. Accordingly, in order for alignment to be achieved, there needs to be commonality of understanding between IT and the business [27:7].

Whilst knowledge of this commonality requirement and its importance has emerged [15:6–18,25:18,27], less attention has been devoted to understanding how it can be addressed with specific reference to the collective role of the board, which is ultimately accountable for the wellbeing of the organisation [23], and the chief information officer (CIO), who acts as a bridge between the business and the IT functions [10:6]. Furthermore, whether or not the interplay between these two roles in an organisation successfully contributes to the resolution of the alignment issue remains unclear [53].

This paper contributes to this concern by providing theoretical insight into these two roles and their interplay, in addition to any supporting mechanisms, as they relate to the IT alignment challenge.

This will be provided by investigating three questions of interest:

1. How should the board be composed in terms of IT-related skills?

2. How should the board communicate with IT; by means of business- or IT-oriented directives?

3. Where should the CIO be located in the managerial hierarchy and what skills should he/she possess with regard to their IT responsibilities?

The layout of the paper will be dictated by the above-mentioned research objective and three questions.

Firstly, the IT alignment challenge is briefly introduced. As will be discussed, few organisations can function effectively today unless sound IT governance principles are in place. In addition, the IT alignment challenge as it relates to IT governance will be detailed by focusing specifically on why it exists, how it can be mitigated and what the current barriers are that organisations are facing when attempting to address this challenge successfully.

Secondly, the role of the board of directors will be introduced and specific reference will be made to what the nature of its contribution should be in addressing the IT alignment challenge.

Thirdly, the role of the CIO will be made apparent and, similarly, the nature of its contribution to the IT alignment challenge will be highlighted.

Fourthly, a discussion will ensue to offer theoretical insight into the interplay that should take place between these two entities and conceivable answers to the three questions will be sought by means of a conceptual IT alignment continuum.

Finally, a conclusion will follow as an epilogue to the paper.

2. The IT alignment challenge

The IT alignment challenge is closely related to the significance of information and IT in our modern-day organisations [25:13,38]. The modern-day organisation simply cannot exist without information [57:iv]. Today, information is embedded in nearly all business processes [28:5] and, as such, has been identified as a basic commodity, similar to water and electricity [11:1]. Furthermore, this basic commodity is primarily driven and enabled by IT [57:iv].

IT has, accordingly, become pervasive in most organisations, and is fundamental to supporting, sustaining and growing the organisation [24:16]. Not only is IT a support mechanism, but it is also an important strategic asset that can create opportunities and allow an organisation to gain competitive advantages [23:52].

Tremendous advantages have been gained from the emergence and evolution of the internet, e-commerce, online trading and electronic communication [24:15].

Organisations thus continue to make significant investments in IT [33].

Unfortunately, many organisations have realised to their dismay that investment in IT cannot in itself offer these advantages, but it is rather through IT's proper use and management, in alignment with the business's objectives, that corporate value can be obtained [38,58:6].

As Feld and Staddord [13:74] state: "just because a builder can acquire a handsome set of hammers, nails, and planks doesn't mean he can erect a quality house at reasonable cost".

Hence, for IT investments to materialise any significant returns necessitate that close commonality of understanding should exist between IT and the business [27:7].

As a result, aligning IT with strategic business objectives and maintaining that alignment over time has become a central issue for IT management and governance [43].

Unfortunately, some authors argue that organisations are no closer today to IT alignment than they were 20 years ago [16,27:9,42], the reason being, that IT alignment is a complex challenge that cannot be successfully addressed by mere accident, but rather requires a concerted effort from all parties involved in an organisation [27:7]. Added to this, business objectives are constantly changing, which means that true IT alignment can never be completely achieved [14:54].

Regrettably, this has allowed the IT alignment challenge to go largely unopposed, which has led to many adverse business issues [27:9]. Examples of these issues include, among others, the inability of the business to reach its full potential, incorrect and ineffective focusing of IT-related resources and erosion of stakeholder value over time.

These business issues have contributed to many instances of substantial monetary losses within the corporate environment, for example [48]:

- Disney lost US$878 million in the shutdown of its Go.com website, which had not met business and customer expectations.
- Kmart wrote off US$130 million since its IT failed to meet business expectations.
- Gateway lost £143 million when it scrapped IT projects that did not support the corporate strategy.
- Nike lost US$400 million as a result of bad investments in software.

These shocking, costly and totally unnecessary losses coupled with the tough financial times and the difficult operating environment in which modern organisations trade have led to many questions being asked about the origin of these cases, for example:

- Did the board not apply proper IT oversight?
- Did the board give directives in IT terms, but not provide sufficient oversight thereafter?
- Did the board provide business directives, which were subsequently interpreted as IT objectives, but not provide adequate IT oversight or ensure proper execution?

These cases, and many more, point toward the fact that low business and IT alignment still persist today in spite of many calls being made for closer alignment over the past decade [17,27:10,41].

This paper argues that IT alignment remains elusive not because of a lack of understanding of the requirement or challenge, but rather because of a lack of clarity as to who should be held responsible, which parties should contribute and what mechanisms should be employed. In particular, it is argued that the collective role of the board and the chief information officer (CIO), and the interplay between these two parties in an organisation remain vague.

Hence, to successfully address the IT alignment challenge, it is vital that an understanding of these two roles and their interplay, as they represent the core of IT and the business, is attained.

3. The role players in IT alignment

IT alignment is a complex issue that requires a concerted effort from all the parties involved in an organisation, from the board of directors all the way down to the skilled employees [27:7]. That said, since IT alignment aims to ensure that IT and the business strive for a common set of goals or objectives, leadership and commitment from the highest levels of the enterprise are required [42,47]. Thus, the proactive engagement of both the CIO and the board becomes essential [25:15,27:16–17,36,53].

Hence, it becomes necessary to investigate and understand the role of the board, which is ultimately accountable for the wellbeing of the business [23], and the CIO, which often represents the IT function and acts as a bridge between the business and IT [10:6].

3.1. The role of the board

Both the role of the board of directors and governance have received renewed interest since the turn of the century with the major scandals and subsequent collapses of global icons like Enron, WorldCom, Tyco and many more [1].

Furthermore, the globalisation and liberalisation of financial markets and stronger demands for accountability and transparency have placed the duties and functioning of boards of directors at the centre of the corporate governance debate [18,22].

There has thus been a call for the increased involvement of the board [42,47], but this has also raised the question of what the appropriate role of the board should be [30,59].

3.1.1. Governance and the board. Shailer defines the role of the board, as it relates to governance, as "decision making in the exercise of authority for direction and control" [55:1]. This definition implies four interrelated principles for the board of directors [45]: first, directors know the strategic direction the company is pursuing; second, they act, or make decisions; third, directors have ultimate authority for the affairs of the organisation; and finally, directors' duty of care centres on oversight and control.

Directors need to exercise wisdom and foresight in discharging their duty of care [56]. If boards fail in these duties through incompetence, civil penalties, and/or dishonesty together with criminal consequences, will most likely ensue [44].

Although the traditional fiduciary duty of the board has not centred on IT and its proper oversight, IT is becoming an ever-present critical driver for business success [23:12]. Added to this, although IT can create significant benefits and wealth, it can just as easily destroy it [45]. This has resulted in best practices and legislation placing the requirement for IT governance, and more specifically IT alignment, squarely on the shoulders of the board [23:70,25].

As articulated in the *Board Briefing for IT Governance* publication by the IT Governance Institute [26:16–17], this requires the board to take responsibility for

- ensuring that IT strategy is aligned with business strategy
- ensuring that IT delivers against the strategy
- directing IT strategy to balance investments appropriately among systems that support the enterprise as it is, transform the enterprise or grow the enterprise
- making informed decisions about the focus and priority for the use of IT resources, and
- ensuring that appropriate IT and related business resources are available to enable IT to deliver on its expectations.

From these responsibilities it becomes apparent that the board plays a pivotal role in the IT alignment challenge [32,42]. As Bacik [2:13] suggests, in order to successfully address this challenge, one requires a clear "tone from the top" regarding what the business wants to achieve and subsequently how IT can contribute to it. Von Solms and Von Solms [57:11] argue that the board is in a prime position to afford such guidance.

While this may ultimately be true, some argue that a debate ensues as to what the strategic role of the

board should entail with regard to IT oversight and involvement [7,51]. Theories, such as agency theory, resource dependency theory and stewardship theory, have ascribed different responsibilities to boards with regard to IT alignment [51]. While studies suggest that board members are becoming more aware of their strategic role in IT [42,47], scholars have regularly highlighted disagreement in the empirical research [9]. Thus, Zahra and Pearce's observation that "there is controversy over the nature of directors' strategic role" [46:328] still seems to be topical after many years of research.

What however is agreed to, is that once the board is involved strategically in IT, there are many ways in which they can exert direction and control [8:3,47,57:76].

3.1.2. Board-level IT involvement. Von Solms and Von Solms [57:76] specifically advocate the use of board directives, which allows the board to share its strategy, vision and business objectives clearly and concisely with the rest of the organisation, not only for successful business operations, but also for IT. In this way board directives reflect the expectations of the board for IT and other business operations.

These authors continue by mentioning that these directives may appear in many forms and formats. However, they stress that irrespective of the form they take, these directives must show that the board realises the importance of the organisation's information and information technologies. This is essential to ensure that a programme for IT alignment will subsequently be initiated.

This notion of the board setting high-level objectives, or directives, is also supported by *COBIT 5* [25:18]. *COBIT 5* specifically emphasise the fact that the board should, as part of its duty towards IT alignment, identify and decide upon the business goals strived for by the organisation's stakeholders, which can then be interpreted or translated into IT goals.

It is, however, important to note that the board will probably never become true IT experts. Many authors [8:3,20] suggest that an IT confidence or attention deficit exists within modern-day boards, as directors often acknowledge the importance of IT and would like to get involved and provide stronger IT oversight and/or direction, but do not know where to begin or how to proceed. Moreover, IT expertise is seldom found to reside at the board level [42,50:93–100].

Hence, authors such as Posthumus and Von Solms [48] and Nolan and McFarlan [42] suggest that it may be beneficial for the board to establish supporting board committees to address IT on its behalf. A board committee of this nature that has received considerable attention is that of the IT oversight committee [23:75].

In summary, from the discussion above it can be discerned that the role of the board is to clearly indicate their expectations for IT as it relates to the business objectives and to put measures in place to express and ensure that these expectations are met [57:76].

Nevertheless, the question remains as to what form these measures will take, in addition to what the ideal composition and/or expertise of the board may be from an IT viewpoint. In other words, how much IT expertise or how many personnel knowledgeable in IT should reside on the board? Furthermore, will the board, who might have little IT expertise, establish directives in IT terms or will it rather establish business-oriented directives, which must be subsequently translated into IT objectives?

Irrespective of the approach followed by the board, in order for the board's IT expectations to become reality and to be successfully implemented, it becomes essential that a CIO interpret them so as to provide detailed guidance for the IT functions within the organisation [10:10,21]. Unfortunately this is no easy task, especially in view of the fact that the CIO role is often not sufficiently understood or properly fulfilled [37].

3.2. The role of the CIO

Crucial to the alignment debate are the role and responsibilities of the IT director or CIO [27:16].

The nature of IT has evolved from a back office, or support centre, to an innovative business partner [54]. Consequently, many organisations have realised that they need a new breed of manager, an individual who can bridge the gap between IT and the business [21]. This new management position has become known as the CIO or the IT director [10].

COBIT 5 [25:76] defines the CIO role, as it relates to IT, as "the most senior official of the organisation that is responsible for aligning IT and business strategies and accountable for planning, resourcing and managing the delivery of IT services and solutions to support business objectives".

The role of the CIO, although a relatively new one in the corporate environment, has intensified and evolved tremendously over the past few years in relation to the increased dependence on IT [35].

3.2.1. The duty of the CIO role. The CIO has of late acted as a translator or link between the business and IT – understanding the business strategy as set out by the board, essentially by means of board directives, and identifying what is possible from an IT perspective [10:6]. Hence, the CIO today removes the

technicalities of IT and presents it to the board as a tool for achieving its strategic business objectives.

The CIO can thus be seen as being central to the concept of IT alignment, as he or she is seen as being able to align IT with the business strategy [27:16]. As Melymuka [39] suggests, "the board knows how to make the business work, and the technologists understand the potential in a new technology. The CIO's duty is to get these two spheres to overlap".

Consequently, modern-day literature recommends that the CIO role should be present in most organisations and should be active in the IT governance and management domain by addressing the IT alignment issue [23:72,25:15].

3.2.2. CIO IT involvement. Although the importance and/or necessity for the CIO role and its proper positioning have been well defined, it is however important to note that there are differences in the ways CIOs interpret and execute their roles that impact on the way they interact with board members [36].

Marchand [36] states that the involvement of the CIO can be classified into either a traditional view or a business player view.

In the *traditional view* the CIOs tend to be technology-centred individuals who think about the IT function primarily as a technical and engineering activity. Accordingly, the CIO's involvement is seen as aligning IT *with* the business strategy and to plan, budget and manage IT resources and people. Thus, in terms of this view of involvement, CIOs focus on developing IT competencies, and let the board concern itself with how information, knowledge and IT are used.

In contrast, in the *business player view* CIOs engage the board in setting business priorities for information and IT projects, solutions and capabilities. The CIOs become board members, positioning the use of information, IT and knowledge as critical resources in the strategy and business model for growth and innovation. Hence, CIOs and board members start to share a common mind-set and concern about using, not just deploying, information, processes, systems and infrastructure effectively.

Although this might suggest that a two-sided perspective of CIO involvement exists, Marchand [36] suggests that it may not be so straightforward. The author contends that other factors such as IT dependence and the board's involvement in IT matters and/or perception may lead to additional perspectives of CIO involvement.

In summary, the overall premise for the author's argument is that the perceived roles and responsibilities of boards and CIOs will affect the way information resources, IT and knowledge are managed in an organisation, which in turn will influence the CIO's involvement in the IT alignment challenge.

Whilst Marchand's [36] argument and premise cannot be denied, this paper argues that although the perceived roles and responsibilities of boards and CIOs are important and could afford differing CIO involvement, the same could be said of organisational IT dependence. It is thus contended that the perspectives of CIO involvement could just as easily be attributed to the differing levels of dependence that organisations place on IT. For example, if the organisation utilises IT in a defensive stance and merely sees it as a support mechanism, then the CIO's involvement, according to Marchand [36], may be bound to the *traditional view* perspective.

This paper therefore argues that a mapping could be established between the work of Nolan and McFarlan [42] and Marchand [36], thus allowing for the interplay between the board and the CIO to be investigated, with the overarching variable being that of the mode of IT or the organisational IT dependence.

To conclude, IT is nowadays playing an essential role in facilitating competitive and strategic advantages for organisations worldwide [12,29:7]. This has resulted in the "perfect storm" of pressure on CIOs to work closely with boards to ensure better IT alignment [58]. The CIO can be seen as being central to the IT alignment challenge as he or she acts as a translator or link between the business and IT – understanding the business strategy as set out by the board, essentially by means of board directives, and identifying what is possible from an IT perspective [10:6]. The CIO role is thus a tremendous resource for boards looking to draw a bead on the current state of IT and its correspondence with the business' objectives [6:23], and consequently the vast majority of corporate organisational charts today feature a CIO or IT director in either a board- or management-level position [49].

However, the question remains as to whether the CIO should be in a management-level position, translating the board's business-oriented directives into IT objectives, or whether he or she should be in a board-level position, assisting the board to draft proper IT-oriented directives. Furthermore, the skill set required for either of these two positions remains unclear.

From the discussion above it becomes apparent that whilst knowledge of the board of directors and the CIO and their importance in addressing the IT alignment challenge is certainly comprehensive and well understood, much debate today still exists as to when and how these two entities, in addition to any supporting mechanisms, should interact within the organisational sphere.

Three questions form part of this debate, which were highlighted in the preceding discussion and mentioned at the outset of this paper:

1. How should the board be composed in terms of IT-related skills?
2. How should the board communicate with IT; by means of business- or IT-oriented directives?
3. Where should the CIO be located in the managerial hierarchy and what skills should he/she possess with regard to their IT responsibilities?

It is argued that, in mapping the work of Nolan and McFarlan [42], Marchand [36] and others [8,31], a conceptual IT alignment continuum, based on the mode of IT or organisational IT dependence, could be established to provide theoretical insight to these questions.

4. The IT alignment continuum

Using the works [8,31,36,42] and factual information detailed in the preceding sections, an IT alignment continuum, based on the mode of IT or organisational IT dependence has been established.

The IT alignment continuum, depicted in Figure 1, applies the organisational IT dependency as an offensive or defensive nature, to detail contrasting, yet potentially balancing, perspectives on the IT alignment challenge.

Using IT in a defensive stance within an organisation implies that IT is viewed purely as supporting the business operations or merely as a cost centre. Hence, as the dependency on IT in this instance is minimal, it is argued that the board's composition should mainly include directors with substantial business expertise residing in the business management, financial, accounting or legal backgrounds. IT expertise, however, could mainly remain elusive, given that the board may view IT as merely a cost of doing business. Not surprisingly, many authors [3,42] have noted, similar to the composition of the board, that no dedicated IT oversight committee may be discernible. More commonly the audit or risk management committees will be delegated to consider IT matters, which may offer only limited IT oversight [48].

It is thus argued, given that limited IT expertise will reside in the board and that no dedicated IT oversight committee will be discernible, that it is most likely that board IT-related communications will take the form of business-oriented directives.

In turn, the role of the CIO should become one of translating the established business-oriented directives into IT objectives and strategies for use by the IT functions of the organisation. This then correlates closely with the *traditional view* of the CIO as stated by Marchand [36]. The CIO should thus generally have substantial IT skills, given that it would focus quite heavily on keeping IT operational and come from a technical background. However, in order for the CIO to perform its translation duties it would be advised to have some, if only limited, business knowledge as well. Furthermore, it is often found that the CIO given this dependence on IT resides in a management-level position to offer closer interaction with the IT functions of the organisation.

In contrast, IT may transition to being used in an offensive stance within an organisation. Accordingly,

Contrasting IT alignment (board/CIO interaction) approaches

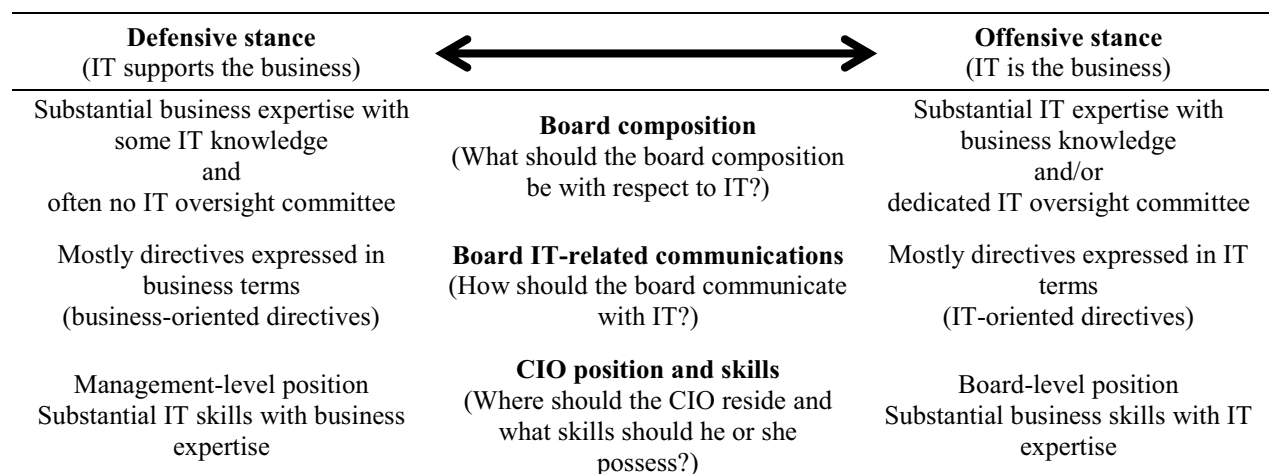| Defensive stance (IT supports the business)		Offensive stance (IT is the business)
Substantial business expertise with some IT knowledge and often no IT oversight committee	**Board composition** (What should the board composition be with respect to IT?)	Substantial IT expertise with business knowledge and/or dedicated IT oversight committee
Mostly directives expressed in business terms (business-oriented directives)	**Board IT-related communications** (How should the board communicate with IT?)	Mostly directives expressed in IT terms (IT-oriented directives)
Management-level position Substantial IT skills with business expertise	**CIO position and skills** (Where should the CIO reside and what skills should he or she possess?)	Board-level position Substantial business skills with IT expertise

Figure 1. The IT alignment continuum

IT becomes the business itself or IT evolves from being a support mechanism to a strategic business asset. Hence, as the dependency on IT in this instance grows more substantial, it is argued that the board's composition should at least include a director(s) with both considerable business and IT expertise, given that IT starts to play a critical role in the wellbeing of the organisation [4]. Many authors [42,48] have argued that, similar to the composition of the board, it would also be advisable for a dedicated IT oversight committee to be established to consider IT matters to enhance the IT oversight already given by the board.

Should the board, however, have only limited IT expertise in its composition, it is argued that this dedicated IT oversight committee may become the central entity that must offer essential IT oversight. Hence, the importance of having such a dedicated committee can be seen as being considerably imperative in such situations.

It is thus argued, given that a higher level of IT expertise will reside in the board and/or that a dedicated IT oversight committee will be discernible, that it is most likely that board IT-related communications will start to take the form of IT-oriented directives.

In turn, the role of the CIO, due to its vast IT knowledge-base, should then become one of guiding and supporting the board in the process of establishing IT-oriented directives in order to become aligned with the business vision and strategies of the organisation. This then correlates closely with the *business player view* of the CIO as stated by Marchand [36]. The CIO should thus in addition to its IT skills also then be required to have a sound business understanding and skill set, given that it would become its duty to ensure that IT both supports and sustains the competitive advantages of the organisation. In order for the CIO to perform this duty, however, it would be advisable for him or her to start by residing in a board-level position so as to offer interaction and knowledge sharing with his or her colleagues in the boardroom.

The continuum thus suggests that as the dependence on IT within an organisation transitions from IT being used as a supportive mechanism to becoming of strategic importance, so too do the composition of the board, the skills and position of the CIO and the necessity for an IT oversight committee change. Furthermore, it is proposed that the types of directive drafted by the board to communicate with IT will also transform.

It is contended that the board, perhaps having little preliminary IT expertise [53], may initially offer purely business-oriented directives and may have ad hoc interaction with the CIO to translate these into IT objectives, but as the dependence on IT increases the board will need to seek additional IT expertise [4] and may be forced to start offering specific IT-oriented directives with the assistance of a board-appointed CIO. It may also need to be more closely involved in IT affairs.

Furthermore, the need for an IT oversight committee may initially be negligible when IT is viewed merely as a support mechanism, but again as the dependence on IT increases, the necessity and duties of such a committee may intensify as the possible divide between the IT wishes of the board and interpretation and actions of the CIO could distort.

Finally, the CIO may start in a management-level position having substantial IT skills, but as the level of dependence on IT increases within the organisation the role may transition to a board-level position to exert more influence on IT matters. He or she will subsequently require considerably more business expertise to fulfil the required duties.

It can therefore be argued that this continuum provides theoretical insight and conceivable answers to the three questions posed by this paper, since it delineates the composition of the board and the forms in which board IT-related communications could take place. It further outlines where the CIO might be positioned in the managerial hierarchy and what skills the incumbent needs to possess in relation to the dependency that an organisation may have on IT.

5. Limitations and future research

A noticeable absence in this paper is the validation of the IT alignment continuum.

Some might argue that there is little usefulness in presenting a model without adequate real-world validation. Although this is certainly acknowledged as holding validity, the aim of this research was and continues to be to initiate discussion on the role of the board, the CIO and whether or not the interplay between these two roles in an organisation successfully contributes to the resolution of the IT alignment issue, since this remains a vague and seemingly unexplored concern.

As such, it should be noted that the presented IT alignment continuum merely represents a conceptual and/or theoretical argument in this context, which at the time of writing still requires validation and further research.

Since the IT alignment continuum forms part of a larger design science [19] research project, it is envisaged that the validation will be performed and reported upon in future publications.

This validation process could take the form of elite interviews [40] with experts in the IT governance and IT alignment domain and/or a multiple case study [61],

performed in an industry setting, by evaluating the board and CIO's role and interplay within several organisations.

6. Conclusion

IT is a business asset and has become vital to the successful existence of nearly all businesses [25:13]. This has led to some believing that IT has become a mere commodity [5]. Although this may ultimately be true, IT is nowadays playing an essential role in facilitating competitive and strategic advantages for organisations worldwide [12,29:7].

Unfortunately, many organisations have realised that because of failures and losses these advantages can only be acquired if IT is properly aligned with the business objectives as set forth by the board [15,25]. Hence, for any enterprise to achieve long-term sustainable success it is essential that all elements that comprise the enterprise, in particular IT, fully understand the corporate objectives and work together in a duly controlled and coordinated way to ensure that those objectives are met [27:5].

Unfortunately, although such alignment may be seemingly trivial, it has remained a troublesome prospect for organisations worldwide throughout the last decade [60]. This paper argued that IT alignment remains elusive not because of a lack of understanding of the requirement or challenge, but rather a lack of clarity as to who should be held responsible, which parties should contribute and what mechanisms must be employed. In particular, it was argued that the collective role of the board and the CIO and the interplay between these two entities in an organisation remains vague.

To contribute, this paper provided theoretical insight into these two roles and their interplay, in addition to any supporting mechanisms, as they relate to the IT alignment challenge.

This was provided by investigating three questions of interest:

1. How should the board be composed in terms of IT-related skills?
2. How should the board communicate with IT; by means of business- or IT-oriented directives?
3. Where should the CIO be located in the managerial hierarchy and what skills should he/she possess with regard to their IT responsibilities?

To offer insight and conceivable answers to these questions, this paper argued towards a conceptual IT alignment continuum that elucidates the role of the board and the CIO and their interplay in relation to the IT alignment challenge, as they represent the core of IT and the business.

In particular, the IT alignment continuum delineates the composition of the board and the forms in which board IT-related communications could take place. It further outlines where the CIO might be positioned in the managerial hierarchy and what skills the incumbent needs to possess in relation to the dependency that an organisation may have on IT.

It is envisaged that the newly established IT alignment continuum will prove highly beneficial to organisations, boards and CIOs, as it offers insight into the collective role of the board and the CIO and the interplay that should exist between these two entities whilst addressing the IT alignment challenge.

It must, however, be noted that the presented IT alignment continuum merely represents a conceptual and/or theoretical argument, which at the time of writing still requires validation and further research.

It is, however, contended, given that IT alignment remains elusive, that researchers should remain vigilant in their efforts to further expand on the understanding of the IT alignment challenge, the organisational entities, such as the board and the CIO, which form part thereof, and this newly established IT alignment continuum.

7. Acknowledgements

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