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Publication date:
2019

Document Version
Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

Citation for published version (APA):

Nielsen, H., Persson, J. S., & Nielsen, P. A. (2019). *Signs of Value in an IS Business Case*. 1-13. Paper presented at Pre-ICIS workshop on Pragmatist IS research, Munich, Germany.

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Signs of Value in an IS Business Case

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Abstract

A business case is a formal investment document with a structured overview of relevant information that provides a rationale and justification of an investment. Business cases have become popular as part of managing value creation in information systems (IS) projects. Nevertheless, business cases are often poorly communicating the rationale and justification of the value to be gained from IS investments. Against this backdrop, we investigate how an IS business case can communicate well when seen through the lens of semiotics. Semiotics is the study of how meaning is generated and interpreted through signs. In this paper, we use semiotics to analyze an IS business case on the digitization of diplomas at a Danish University. Our analysis shows that its (1) addresser and addressee should be explicitly and implicitly identifiable; (2) self-referentiality helps set the context and allow uncertainties in the message; (3) a template instigates the medium and codes for value. We discuss the contribution of our findings to research on IS business cases.

Keywords: IS value, Business Cases, Semiotics, Communication.

1 Introduction

When it comes to being able to communicate the value of information systems (IS) with success, some form of shared understanding is key (Tallon, 2014; Rose et al., 2015a, 2015b). However, successful communication is a complex undertaking that does not become less complex when adding more voices and viewpoints to the conversation. The business case document is widely used as a sign of IS value (Nielsen & Persson, 2017). The quality and usefulness of business cases is a key problem for IS management in public organizations (Nielsen & Persson, 2016, 2017) and they have been shown to misinform IS investment decisions (Berghout & Tan, 2013). A business case is shaped, read, and used by many different stakeholders of an IS investment. Communicating the value of an IS investment, formally begins with the business case. However, though recognized as a central and most important document for IS success, there is still limited research on what constitutes a well communicated business case (Maes et al., 2014). This leaves stakeholders with no clear guidelines to help them signify IS value within a business case.

Maes et al. (2014) have organized the scattered knowledge of IS business cases by the use of their Business Case Research Framework and structured the field of study into

six dimensions. One of the dimensions is the content of business cases, as they discovered many views on what a business case may consist of. According to Ward & Daniel (2006), a business case is a central element when trying to explain value creation and make decisions, both within public and private organizations. Nielsen & Persson (2017) studied in collaboration with Danish municipalities how to improve the usefulness of business cases for IS value creation. Their results also point in the direction that it is of great importance what stakeholders chose as content for the business case, and this needs to be addressed in order to improve IS business cases and value creation. This paper reports on how semiotics is useful for investigating IS business cases and how stakeholders can improve their communication with business cases.

Semiotics is the study of how meaning is generated and interpreted through signs. Semiotic mediation is central to the pragmatist understanding of organizations (Lorino, 2018) and explaining their communication (Beynon-Davies, 2018). Mingers & Willcocks (2017) argue that semiotics can help IS researchers understand the processes of communication that are central to advanced information technologies. Mingers & Willcocks (2017) explain that to add some form of structure in the use of semiotics, they invoked Roman Jakobson's communication model, which includes both a structure for communication and the possible functions that each element within the system may perform (Mingers & Willcocks, 2017). Thorlacius (2002) have taken this model of Jakobson as departure and created a visual communication model, which can be used as a theoretical guideline to analyze also the visual and aesthetic aspects of all media products (Thorlacius, 2002). As Thorlacius (2002), we will take departure in Jakobson's communication model and functions and, furthermore, explore how Thorlacius more contemporary take on the model can contribute to the understanding of IS business cases. We use this lens of semiotics to address the research question:

How can an IS business case communicate well when seen through the lens of semiotics?

The paper takes the following form. First, we introduce the theoretical background on IS business cases. Secondly, we introduce the semiotic analysis approach and model for our study. Thirdly, we present our discoveries as the result of the semiotic analysis and compare this to literature's view on what constitutes a useful business case. The paper ends with a final discussion and conclusion.

2 Background

2.1 IS business cases

Maes et al. (2014) systematically reviewed the literature of business cases, gathering the much-scattered knowledge about business cases, what they are, how they are developed, and how they are used. Based on their extensive review, they define a business case as:

a formal investment document with a structured overview of relevant information that provides a rationale and justification of an investment with the intent to enable well-founded investment decision-making.

(Maes et al., 2014, p. 55)

Ward et al. (2008) have through their research of 100 IS business cases established some of the do's and don'ts when it comes to building business cases, and an overview of what they think should be content of a business case. These includes recognizing non-financial benefits, measuring benefits quantitatively or qualitatively, finding evidence for the size of benefits, and establishing ownership for each benefit. Ward et al. (2008) finally emphasize linking benefits to the business changes that are required to deliver them, which align their view on IS business cases with the research on benefits realization management (Doherty et al, 2012; Einhorn et al, 2019; Nielsen et al, 2012). Nielsen & Persson (2017) elaborated on the approach in (Ward et al 2008) in collaboration with Danish municipalities on making business cases more usefulness for IS value creation. Their results point to importance choosing content for the IS business case.

Maes et al. (2014) found that most researchers and professionals writing about business cases agree that a business case should contain information about: (1) the vision and objectives of the investment, (2) the required changes to realize the scope, (3) anticipated benefits and costs, and (4) associated risks. Furthermore, they found that some also include information on (5) project management, such as (5a) investment planning, (5b) roadmap for implementation scheduling, and (5c) other actions to be undertaken in parallel. Assigning responsibilities and accountabilities by name is also mentioned as essential in order to increase the commitment of individuals. Finally, it is suggested that one could include information about: best practices, intangible and qualitative benefits (and not only the more easily measured financial and quantitative benefits), and that it is not enough to merely enumerate objectives and expected benefits (Maes et al., 2014). Ward et al. (2008) discovered that many organizations are struggling with lack of evidence for the benefits or even if they are possible to realize. Furthermore, they point to the importance of ordering the presented content the way that management first should understand the expected benefits, before they decide on how much is to be spent on a project.

2.2 Semiotics

Several sources, e.g. Maes et al. (2014) and Nielsen & Persson (2017), point to the importance of the business case being the medium of communication. One way of studying communication is to use semiotics, which Lorino (2018) argues that from a pragmatist perspective is at the heart of organizing. The theory of semiotic mediation:

(mediation through signs) plays a leading role in pragmatism in different forms (Pierce's "thirdness" and "triadic sign", Mead's "significant symbols", James' "symbolic mediation", Dewey's "signs and symbols")

(Lorino, 2018, p. 27).

Semiotics, in attending to signs as anything interpreted, is a cornerstone in the pragmatist critique of representationalism and a key theoretical tool to deconstruct it (Lorino 2018). The pragmatists' strong distrust of dualisms (Farjoun et al, 2015) or reality/representation dichotomies (Lorino, 2018) in studying organizations is prudent for studying business cases given their performative function for IS value. Mingers & Willcocks (2014) propose using semiotics as the theoretical foundation for IS research, as they argue that:

the process of semiosis has immense bearing on processes of communication central to the advanced information and communications technologies studied by IS scholars.

(Mingers & Willcocks, 2017, p. 17).

They suggest using a broader framework for conducting semiotic research in IS. As a first step, Mingers & Willcocks (2017) suggest identifying the specific message and explain the following:

- The reason for choosing this message
- The producer of the message and their purposes
- The intended – and actual – audience
- The general context in which the message is produced

Mingers & Willcocks (2017) also suggest using Jakobson’s communication model. Figure 1 shows the factors and language functions developed by Jakobson as presented by Thorlacius (2002).

Jakobson’s (1960) model of communication consists of six factors that all are connected to each their own function of language. We draw on both Jakobson’s model of communication and the more contemporary version for visual communication, developed by Thorlacius (2002), in order to include both linguistic and visual aspects of the business case.

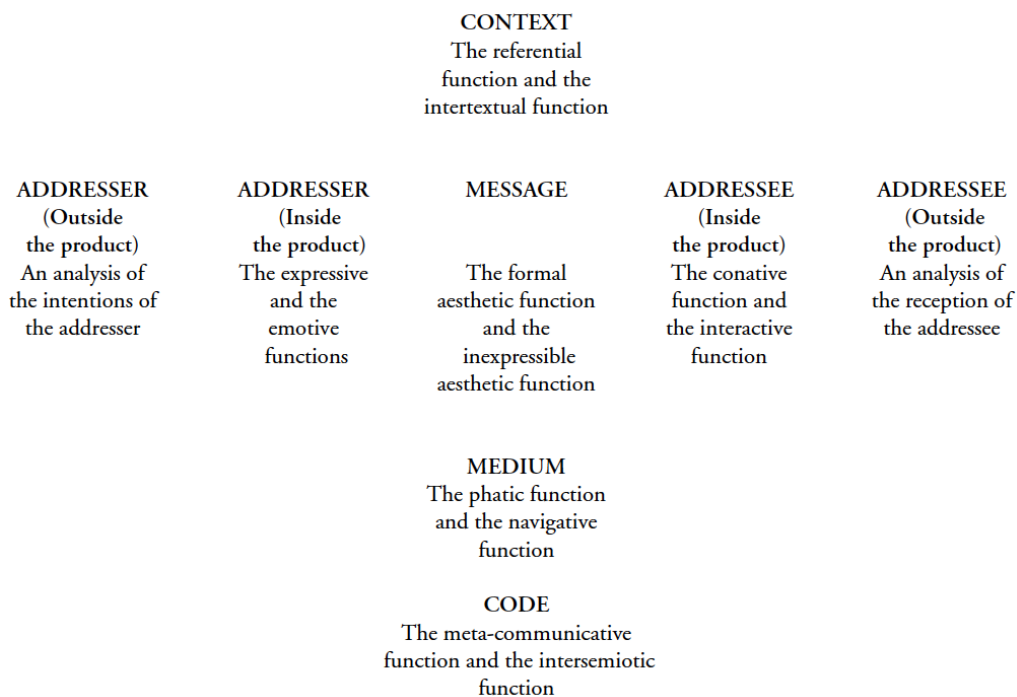


Figure 1. Thorlacius’ communication model (Thorlacius, 2002, p. 87)

Thorlacius have added functions in her model for analyzing the visual aspects of the communication situation. Her model also ties the functions with theories of rhetoric and Peirce’s theory of signs (Thorlacius, 2002). According to Peirce (1955), a sign

consists of representamen ‘what we see,’ the object ‘what representamen represents,’ and the interpretant ‘the effect that representamen has on the interpreter.’ What the interpreter see as the object of the sign is what determines the sign being it a symbol, an icon, or an index. Thorlaciuss (2002) more specifically uses the theory of signs to elaborate on the referential function that relates to the context. Thorlaciuss agrees with Jakobson (1960) that all messages consist of more than one function, but also that one function may be more dominant than other functions. We employ the functions in the following analysis that relate to the visual aspects as an addition to Jakobson’s (1960) more linguistic focused functions. As shown in figure 1, Thorlaciuss (2002) has furthermore extended Jakobson’s (1960) model by two factors. These are the addresser and the addressee that are outside of the product. However, the focus of this paper is IS business cases as a workable communication tool on its own, with no need of further translation. Thus, we focus on analyzing the factors and functions within the product itself, the business case. One function often dominates the message, however, it is still important to consider the degree of participation by the other functions. What could be interesting is if there are connections to be found in the minor presence of certain functions and what Maes et al. (2014) have found to be content of importance. Though taking departure in Jakobson’s (1960) model, we embrace the contemporary terminology of Thorlaciuss’ communication model in our presentation of the results, for the sake of simplicity.

3 Research Design

A semiotic analysis of a business case document is the chosen methodology of this paper. Using documents as a data source in qualitative research is generally appropriate and “the document can be thought of as an actor in its own right” (Myers., 2013, p. 151). The unique document we are using in this study is a business case that has been developed at a university, has been approved by the university’s strategic digitalization committee, and has formal status as funds has been allocated for the project by that committee.

Semiotics is a way of analyzing qualitative data where the focus is on signs, symbols and their meaning (Myers., 2013, pp. 197-203). We apply a semiotic analysis, to understand what Lorino (2018) label an organizational mediating device (the university’s business case), which we see as central to organizing IS development and to its valuation. We base the semiotic analysis on the underlying research procedure advocated by Mingers & Willcocks (2017). First, we identified our chosen message as suggested by Mingers & Willcocks (2017). Based on a long-lasting interest in how business cases can help with value creation in public organizations (Nielsen & Persson, 2010, 2012, 2016, 2017), we chose an IS business case from a university, an organization the authors are very familiar with. Thus, our semiotic analysis to understand the business case is a highly attached form of scholarship (Nielsen & Persson, 2016). We as interpretants of the business case engage in semiosis involving both experiences from within the organization and from previous research on IS business cases. For the sake of transparency, our semiotic analysis thus includes references to IS business case research, in particular (Maes et al., 2014) and (Nielsen & Persson, 2017).

The producers of the business case are staff at the university, and more specifically the staff involved in the initial analysis that has led to the development of the business case.

The intended audience is the council that are to approve or reject the continuation of the project and the staff working on the project. The general context of the business case is a university that recently established a new digitization strategy and with that a strategic digitization council that are to help forward the university becoming a digitized learning institution.

The details of the approach to qualitative analysis follows the concepts and semiotic functions laid out in Figure 1. That is, for example, the concepts of ‘addresser’ and ‘addressee’ will be used to identify what these concepts cover in the business case; and further, for example, what the conative function is and how that can get the receiver of the document to understand the message, and entice to actions of consequence.

4 Analysis

No order is recommended by either Jakobson or Thorlacius when their models are put into use, but we choose to bring forward what we experience as noticeable when looking at the IS business case as a tool for communication. In the following analysis we attend to the elements in Figure 1, first the addresser and addressee inside the business case, second the context and message, and third the medium and code.

4.1 Addresser and Addressee

The addresser and addressee can be divided into two; the actual and the implicit that are to be found in the product (Thorlacius, 2002). Our focus is on what is communicated through the document and thus on the implicit addresser and addressee. As Maes et al. (2014) have established, several sources address the importance of assigning responsibilities in the business case document. This assignment of responsibilities is to ensure that the individuals that are a part of the project also feel a commitment to the project, by having their names tied to specific tasks and areas of responsibility.

The most evident presence of an addresser is established by the university logo on the front page of the document that is a part of the template styling of the document. The logo symbolizes the university as an institution and signals the addresser, who else that might be, as having an official relation with the university. It is in fact not possible to determine an addresser in the document, whether that be an individual person or department. There are instead various examples of named individuals and departments being mentioned as having done initial work or having an interest in the project, e.g.:

“...a needs screening carried out by [first and last name removed]. As a supplement to the needs screening, Study Service at [first and last name removed] has contacted...”

(BUSINESS CASE Digital Diplomas, 2018, p. 3)

and

“The technical analysis was carried out by ITS architect [first and last name removed].”

(BUSINESS CASE Digital Diplomas, 2018, p. 3)

But soon after these statements, when it comes to the recommendation and what strategy is suggested to follow, it is not clear who is actually stating these recommendations.

“This contributes to an increased uncertainty in the project, which emphasizes the need for further analysis and clarification.”

(BUSINESS CASE Digital Diplomas, 2018, p. 3)

and

”The result of the technical analysis is a recommendation to establish a safe track project due to uncertainty about establishment of automatic journaling in WorkZone.”

(BUSINESS CASE Digital Diplomas, 2018, p. 3)

The employees doing the different parts of analysis may have contributed to the recommendation, but the way it is written makes it impossible to determine with certainty who is behind this recommendation. This lack of clarity means that the rhetorical power of the recommendation comes from presenting the initial analysis work done by named employees of the university and not because one individual or department takes on the responsibility and accountability for it. By not naming the addresser behind the recommendations, it contributes to a lack of transparency when it comes to assigning roles, responsibility and accountability within the project just as Maes et al. (2014) and Nielsen & Persson (2017) identified as being a general problem in the use of business cases.

The conative function can help identify the addressee and comes to play when the addressee is approached, e.g. by the use of imperative sentences; ‘Do this!’, which there are no examples of in the document. Instead, we experience what can be considered a very discrete approach towards the addressee. We know from our own initial research of the context that the ones supposed to be the actual addressee is what is called the Strategic Digitization Council. However, as the following examples shows, though the council is never directly addressed in the document, some statements seem oriented towards the council:

“If the Strategic Digitization Council decides to launch the project, the Council cf. terms of reference, is responsible to secure the necessary resources for the project, by agreement with the line management.” (BUSINESS CASE Digital Diplomas, 2018, p. 7)

The addresser, whoever that might be, is implying that their bit is done, they have come as far as they can, but now the ball is in the council’s court. The council needs to approve the project, for the project to move on. It is repeatedly stated throughout the document that the lack of information and answers in several sections is because the work has yet to be done and it will be done in the next phase of the project, after a possible approval.

“Additional organizational deliveries must be clarified in the project’s initiation and detail analysis phase.” (BUSINESS CASE Digital Diplomas, 2018, p. 4)

This statement, similarly shows, that many of the uncertainties of the project needs to be taken care of, if the council are to approve the continuation of the project.

In general, regarding the addresser and addressee, the business case focusses on what has been done, what needs to be done, and what is recommended. However, neither the addresser nor addressee is clearly identifiable in the message, which ties with the lack of commitment that both Maes et al. (2014) and Nielsen & Persson (2017) have established being a problem in the use of business cases.

4.2 Context and Message

The focus of the business case, what has been done, what needs to be done, and what is recommended, also pertains to a specific context and message. Two functions relate to the context; the referential function and the intertextual function (Thorlacijs, 2002). The referential function dominates when focus is on the content of the message, content which we can elaborate on by attending to signs. The way a sign is interpreted depends on the relation between a sign's representamen and object. Given the limited research and established understanding of IS business cases, we found it interesting to dive deeper into the meaning of the sign '*business case*'. We bring forward the following combination of signs:

"This business case is based on the following solution hypothesis"

(BUSINESS CASE Digital Diplomas, 2018, p. 3)

The object of '*business case*' is the document and therefore "*business case*" becomes a symbol, because there is no direct resemblance to the object. For "*business case*" to be understood by the actual addressee some form of shared understanding is needed. While Maes et al. (2014) suggest there is limited shared understanding of what a business case is and consists of, this business case, by referring to itself as a "*business case*", establish the understanding of "business case" in this context. A business case may simply be a document that describes itself as a business case. However, there is the risk that the content of the document does not align with what the actual addressee beforehand defined as a business case, which could leave the actual addressee with the impression of a flawed business case.

Two kinds of aesthetic functions relate to the message, and these functions appeal to our senses, the intellect being one of them (Thorlacijs, 2002). The formal aesthetic function is identifiable and possible to express in classifiable terms, whereas the inexpressible aesthetic function originates in the senses and feelings, which cannot be classified (Thorlacijs, 2002). Maes et al. (2014, p. 57) point to the fact that key stakeholders' impact on business case usage could be explored from new angles. One way they affect the business case is the choice of content and the way that this content is presented. The addresser helps the actual addressee to establish the genre of the document, by the choice of words and how they are used. An example of the formal aesthetic function is the use of 'solution hypothesis'. It communicates the uncertainty of the business case; however, the use of the word "hypothesis" appeals to the professional context and intellect of the addressee, more than writing flat out "this may or may not work". The formality of the language helps the document to express the seriousness of the message and establish the document as being professional. The uncertainty, however, reappears throughout the document. A linguistic example could be e.g. a statement like '*It is assumed that these have been completed.*' (2018, p. 4).

In summary, some form of shared understanding is needed when a message contains symbolic signs, however this business case refers to itself as a "business case" which

ensures the needed shared understanding in this exact context. While Maes et al. (2014) and Nielsen & Persson (2017) problematize the general incoherent understanding and use of IS business cases, in this example of a business case it is a document that simply claims to be so. Furthermore, the choice and use of both linguistic and visual signs communicate a clear amount of uncertainty, but also capture and express the sense of professionalism in the document. Thus, the business case signifies professionalism in managing the inevitable uncertainty regarding the planned IS investment and its value.

4.3 Medium and Code

The medium has a phatic function that helps to continue the contact, between addresser and addressee, without really communicating actual information (Thorlacius, 2002). The layout of the document originates from a template provided by the university and is an example of the phatic function. The template helps in sustaining the contact but also dictates how the actual addresser orders the content, by numbering the subheadings:

“Purpose of the project”

(BUSINESS CASE Digital Diplomas, 2018, p. 3)

The addresser is to follow the template. What an addressee might notice is that there initially is a strong emphasis on information related to costs, which shows in either the subheading or the text body. Sections that deal with costs follow the order: ‘5 Deliveries’ (includes estimates of needed working hours related to each part delivery), followed by ‘6 Direct project costs’, ‘8 Increased operating costs after “date”’ and ‘14 Resource needs’. In total, the business case consists of 18 different subheadings and what is noticeable is that the logic of the investment case is cost-first. The costs are understood and then sufficient benefits to justify the cost are identified. This sequence is a rather too literal interpretation of the term “cost benefit analysis” contrary to the “benefit cost analysis” approach proposed in (Ward et al., 2008, p. 17). This portrays in the business case document as the benefits are placed as number 15 out of 18 subheadings.

Furthermore, there is an imbalanced presentation of the benefits. This relates to the code of the message and how e.g. different kinds of code, that being words, numbers and visualizations, can help the addressee in the interpretation of the signs and increase the likelihood of the addressee understanding the message. The addresser initially emphasizes the qualitative information regarding benefits:

“Currently, significant improvement of service to the students is identified, and the opportunity to live up to the expectations of students.”

(BUSINESS CASE Digital Diplomas, 2018, p. 10)

The benefits section is hereafter continued by a subsection ‘15.1 Examples of benefit areas’ that presents three tables that are the results of a previously made cost analysis. The university may or may not save 2.455 EUR on reissuing of diplomas, 23.820 EUR on postage and paper and 13.395 EUR on journaling. Considering the substantial size of the organization with more than 3500 employees 20,000 students, at least the first amount of 2.455 EUR seems very small and not worth mentioning as a financial argument. So even though the addresser tries to emphasize the potential of better service,

the measurable costs that may or may not be saved takes up much more space in the document.

In summary, the template layout establishes the contact between addresser and addressee, guiding the way through the document by the use of numbered subheadings. However, the fixed order of the subheadings and quantification of benefits do not resonate with Maes et al. (2014) and Nielsen & Persson (2017) in their emphasis on qualitative information to supplement the financial arguments in order to make business cases more useful.

5 Discussion and conclusion

In this section, we discuss and conclude our semiotic analysis of the IS business case on the digitization of diplomas at a Danish University in relation to previous research on IS business cases and our research question: *How can an IS business case communicate well when seen through the lens of semiotics?* We discuss three contributions of our study (1) identifiable addresser and addressee, (2) self-referentiality in setting the context and message, and, (3) template instigating the medium and code. These three contributions address the fundamental functions in a communication situation according to (Thorlaciuss 2002) cf. section 2.2. However, further research is still needed to better understand the complexity in communicating through a business case. Our paper is a first exploration of semiotic mediation, which in Lorino's (2018) seminal book on pragmatism and organization studies is at the heart of organizing, in an IS business case.

5.1 Identifiable addresser and addressee

Our analysis shows neither the addresser nor addressee are clearly identifiable in the business case on the digitization of diplomas cf. section 4.1. This lack of an explicit connection between the addresser outside and within the business case document inhibits the communicative clarity. The same issue is prevalent for the addressee of the business case. We tie the unclear addressee with the lack of commitment that both Maes et al. (2014) and Nielsen & Persson (2017) problematize in the use of IS business cases. Nielsen & Persson (2017) and Ward et al. (2008) suggest that each benefit should be assigned an individual owner. From a semiotic view, this explicit assignment of ownership can better entice the addressee to act, which is needed because the successful realization of IS benefits requires organizational changes (Doherty, 2012). The lack of a clearly identifiable addresser can further inhibit the dynamic use of the business case document suggested in (Nielsen & Persson, 2017). They suggest explicitly assigning a business case owner responsible for maintaining and updating the business case as inevitable changes will follow the initial decision to make the IS investment. Future research is still needed to better understand the actual addresser's intentions and actual addressee's reception in relation to each of their implicit roles in IS business cases documents.

The message from this finding to IS practice is that the lack of a clearly identifiable addresser and addressee contributes to a lack of transparency and commitment to the business case and its benefits. It is therefore of great importance that the business case communicates explicitly who is communicating what and to whom.

5.2 Self-referentiality in setting context and message

Our analysis of the context and message shows that the business case refers to itself as a business case cf. section 4.2. This self-referentiality addresses the need for shared understanding that comes with a message containing symbolic signs. A symbolic sign relates to its object only by an association of general ideas (Peirce, 1955) and the “business case” object does not imply an in general coherent understanding or particular use (Maes et al., 2014; Nielsen & Persson, 2017). Thus, self-referentiality is useful for accomplishing a particular meaning. The self-referentiality allows associations that in our case is with “solution hypothesis” referring to an inevitable uncertainty but also professionalism in managing it. Ward et al. (2008) suggest classifying benefits according to their degree of explicitness. In the case of benefits with a low degree of explicitness, Ward et al. (2008) suggest using external benchmarking, pilots, reference sites, modeling, simulation, and detailed internal evidence. Uncertainty is nevertheless a given in the complex and highly contingent situation of IS investments. Future research is thus needed to better understand how self-referentiality is used to accomplish what a business case is taken to be in an IS investment context. On the matter of uncertainty in IS business cases, further research is also needed of the degree of explicitness signified and how that affect the actual addressee’s reception.

The message from this finding to IS practice is that with the lack of a widespread (used) definition and understanding of what a business case is, organizations must ensure a shared definition and understanding of a business case in the context of the organization. This can be as simple as describing what a business case is and the purpose of it in the beginning of the business case document.

5.3 Template instigates the medium and code

Our analysis of the medium and code shows that the template layout establishes contact between addresser and addressee and instigates a fixed order in the message. The logic of the business case is cost-first, which is followed by sufficient benefits to justify these costs. A sequence reflecting a rather too literal interpretation of the term “cost benefit analysis” contrary to the “benefit cost analysis” approach in (Ward et al., 2008, p. 17). They report that such cost-first logic is prevalent in the less successful organization that use business cases for the sole purpose of obtaining funding. In these organizations, the benefits that the investment could deliver are either not identified or overstated, which both can result in lower levels of actual benefits. The template further instigates what kinds of code, that being words, numbers, and visualizations, are used in the message to help the addressee interpret the signs. The fixation on codes for quantifying the financial benefits at the expense of qualitative benefits makes the business case less useful according to (Nielsen & Persson, 2017). However, future research is needed of how different templates for an IS business case instigate swift or sustained contact between addressers and addressees. While our analysis shows that a template can instigate qualitative or quantitative codes for the signs of value in an IS business, further research is needed to understand the variety of these instigations. The consequences signs make to action is an essential underpinning of semiotics (Beynon-Davies, 2018), which again makes the instigations of templates on IS business cases central to further semiotic inquiry.

The message from this finding to IS practice is that a template can be just as harmful as helpful, if the template goes against what identifies a well-communicated business case. An organization must ensure that their template cohere to recommendations stated by business case professionals and encourage stakeholders to commit to the work of developing well-communicated business cases for the sake of a successful project, not for the sake of funding.

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