Information suppliers: May we have your attention, please?
- Capabilities influencing the creating and sustaining of user attention

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Mattias Andersson
Lina Fernström
Supervisor: Jan Lindvall
Abstract

Attention is a scarce resource. Information is abundant. In spite of everything the digital era promises, this abundance of information challenges the traditional rules of business. Research suggests that information consumes the attention of its users, why effective allocation of attention in organizations is imperative. This research aims to provide a deeper and more nuanced understanding of literature in information management, and in particular, outline capabilities influencing the information supplier’s ability to effectively allocate attention. Where research refers to effective allocation of attention, this thesis translates and focuses on the information supplier’s short- and long-term ability to create and sustain attention of its users. Furthermore, the enactment of creating and sustaining attention have different implications according to literature, the latter emphasising the user commitment to the information. By breaking down the term effective allocation of attention, this thesis constructs a conceptual model divided into three levels of attention allocation. Data collection involved seven interviews with controllers, together with two additional subject interviews. Learning from an information supplier’s perspective established a foundation of data analysis. Based on these findings, this thesis resultantly maps out three different capabilities responding to the levels of effective allocation of attention. A conceptual model, along with empirical findings, outlined information supplying capabilities useful in creating and sustaining of attention.

Keywords: Attention, information user, information supplier, capabilities, controller, customization, visualization, measurements, social network, user commitment, user pull
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Mattias Andersson

Lina Fernström
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1. Information blindness

Picture a world where the frontier of information technology has advanced, reaching its pinnacle where boundaries associated with storing and accessing large quantities of information are no longer a debatable issue. Researchers have started to use new buzzwords such as Big Data and Internet of Things, concepts explaining possibilities for businesses in the digital era (Cukier & Mayer-Schönberger, 2013). The opportunities in the technological era seem promising indeed. However, entering the digital era implies increasing quantification, where an abundance of data and information floods into all sectors and ultimately changes the rules of business (Manyika et al., 2011; Cukier & Mayer-Schönberger, 2013). Much of the research on information dissemination in organizations is premised on the view that information is scarce and difficult to obtain (Simon, 1971; Lindvall, 2011:53-54). Also, computers cannot add context to information, which is why humans must process information (Davenport, 2005). In this environment, stakeholders clearly will have to put more thought and resources into managing information, rethinking the way they view information that concerns the organizations (Davenport & Beck, 2001:03).

Due to uncertainty, researchers argue that a general response of this blindness is that information suppliers (those responsible for distribution) push out more information, leaving the distribution of information unspecified and broad (Hansen & Haas, 2001; Lindvall, 2011:147). Consequently, this outcome leaves information users unaware, risking missing important inputs and messages included in the information. It has been acknowledged that the recent explosion in information-availability and new information systems available for information users consumes human attention (Hansen & Haas, 2001; Davenport, 2001a). Attention has become a critical scarce resource and the mere management of attention has become one of our most important activities (Simon, 1971; Davenport, 2001a; Davenport & Beck, 2001:03; Haas et al., 2015). In other words, it is not information that is scarce, it is human attention. Attention facilitates in effective allocation and presumes the organizational long-term survival (Simon, 1971; Davenport & Beck, 2001:11). In contrast, ineffective attention allocation further increases information blindness, hence the information supplier’s ability to create and sustain becomes limited.

“We spent a great deal of time and money bringing water to the horse, but we don’t even know if he’s thirsty, and we have no idea how to get him to drink”

- Davenport, 1997:83
1.1 Fighting information blindness

Managing attention in today's imbalance between information and attention allocation is crucial. This imbalance has been acknowledged in the research field of knowledge management as well, claiming that information management did not live up to the expectations (Drucker, 2000; Hislop, 2009). Information blindness caused by the large volumes of information, hinders the management of knowledge crucial for organizational development (Davenport & Prusak, 1998). Ongoing research still aims to provide a more nuanced understanding of information management and its implications, and remains a field worth examining. Then how should we manage information in this blindness?

It makes sense to suggest that managers constitute to significant and relevant candidates primarily responsible for creating and sustaining attention in organizations, and in particular the managers closely associated to the information supplying (Davenport, 2001a). This far, the structural position of managers in organizations has allowed the information users to focus their time and effort on certain events and to ignore other, not prioritized and less important matters (Lawrence & Lorsch, 1967; Stevens et al., 2015). However, attention has become everybody’s concern and information floods will require delegation in organizations. It is expected that concern regarding attention allocation can trickle down in the organization to other actors alleviating managers in the fight against information blindness (Davenport & Beck, 2001:215). One suggestion is the controller. This actor is influenced by the abundance of information to a high degree and has a very pronounced and long-standing tradition of being an information supplier in the traditional sense (Scherrer, 2003; Järvenpää, 2007; Lindvall, 2009:203; Wolf et al., 2015). To create attention, research has suggested that if information suppliers make the distribution of information more customized, it enhances the likeness of information being absorbed, which is associated to what is referred to as pull factors in distribution (Davenport, 2001a; Lindvall, 2011:146; Hansen & Haas, 2015). Research that addresses the long-term implications of attention has indicated that getting users to hold on to and sustain attention is something significantly different than initially creating it, feasible only when tapping into the user commitment (Davenport & Becks, 2000; Anderson, 2008; Nigam & Ocasio, 2010).
1.2 Purpose and aim
According to subject literature, effective allocation of attention is indeed important in an information-rich context. Where literature speaks of effective allocation of attention, we refer to the information supplier’s short- and long-term ability to create and sustain attention, when users constantly are exposed to new information which requires attention. We want to broaden the understanding of the term effective allocation of attention from a practitioner's standpoint, making it more tangible for practitioners and scholars alike. Thereby, the aim of this study is to provide a conceptual model addressing creating and sustaining of attention and from that model, striving to outline what capabilities influence the information supplier’s ability to create and sustain attention. Resultantly, tentative contributions from a theoretical and practical perspective can be made, providing a more nuanced picture of how information suppliers address attention in a short- and long-term perspective. Therefore, this study aims to answer the following research question:

How can information suppliers effectively create and sustain user attention in information-rich settings?

2. Attention - The new business currency
There is a consensual agreement that information richness and large information flows will change the way we think about management and across subject literature, scholars have highlighted that managing attention is something important for business acknowledging (Simon, 1947; Ocasio, 1997; Hodgkinson & Healey, 2011). Research defines attention as something that needs to be managed and facilitates in information supplies ability to be allocated effectively (Davenport 2001a). This thesis argues that effective allocation of attention in many regards is equal to the information supplier’s ability to create attention in the short term, together with the way in which they can sustain attention in the long-term. The latter not having the same implications (Davenport & Beck, 2000). In this literature review, it is first important to address the controller as an information supplier. Also, it is important to define and understand the fundamental differences between data, information and knowledge. Thereby, we know what the supplying consists of, placing information as the central point of further argumentation. The second section in the literature review will give an introduction in the research field of attention, where scholars address the importance of effective allocation in managing attention. The third section strives to outline what influence the creating and
sustaining of attention in the short- and long-term, breaking down in detail how information suppliers effectively can allocate user attention. This section is summarized by establishing a conceptual model to be used as an analytical lens. The purpose of this section is to broaden the understanding of effective allocation by breaking it down into three levels.

2.1 The controller as the information supplier

The importance of effective allocation of user attention in organizations has been raised in prior studies (Simon, 1947; Ocasio, 1997; Davenport, 2001b). Taking these studies into consideration, the purpose of this research is to provide a more nuanced picture regarding the information supplier’s ability to effectively allocate attention by addressing the creating and sustaining of attention accordingly in an information-rich setting. More in detail, the aim is to derive from a practitioner's standpoint, how creating and sustaining attention facilitates the allocation of attention to the users. This thesis argues that the role of the controller is an important participant in the fight against information blindness, which places the controller into relevant context. During recent years, the role of a controller has shifted towards a more business oriented role consisting of acting as proactive internal advisor (Wolf et al., 2015). According to Järvenpää (2007) this shift has meant a transition from the controller being oriented around the distribution of information without having the users in mind, associated with information push, towards being an active participant in the management’s tasks (Davenport & Beck, 2001; Shih, 2006). In this research context, the responsibility of allocating attention in an abundance of information will be shared and therefore delegated to the information supplier (e.g. the controller). In order for controllers to be proactive, more thought would have to go into managing attention in the distribution of information, taking the users more into consideration. Controllers are to a high degree influenced by the abundance of information and have a pronounced and long-standing tradition of being an information supplier in the traditional sense, communicating mostly through numeric information (Scherrer, 2003; Järvenpää, 2007; Lindvall, 2011:53; Wolf et al., 2015). Figure 1 presents where this study incorporates the role of the controller. The authors of this thesis argue that the controller due to his/her position in the organization, is an applicable candidate when shedding lights on the matters presented in literature regarding attention and emphasis on what is important for organizations. Next, this section aims to provide an understanding of what it is that controllers are supplying in organizations.
Figure 1. The controller as the information supplier

Data
It is argued that knowledge is based on the conversion of data into information by context, and when information - consisting of data - is converted into action, it becomes knowledge (Zack, 1999). Data alone has little relevance or purpose. In an external data collection scenario, where a customer goes to a gas station to fill the tank of his car, data can describe the transaction partly, namely when the person made the purchase, how many gallons he bought and how much paid. The data tells nothing about why the person went to that service station and not another one, and can't predict how likely he is to come back (Davenport, 2005). The digital era gives reason to believe that the amount of data will increase. Digitalization and connectivity is what drives the datafication leading to an increasingly quantifiable world (Cukier & Mayer-Schönberger, 2013).

Information
For this research, defining the difference between information and data is important. In contrast to data, the process of transforming data into information is only successful when adding meaning, relevance and purpose to the data. Research in the field of information management describe information as a message, usually in the form of a document or visible communication, either numeric and/or text (Davenport, 2005; Davenport & Prusak, 1998:03). We transform data into information by adding value in various ways. In information management: technology can help to alleviate upcoming difficulties in making the transformation happen, namely by using computers adding these values and transform data into information, making information a flow of messages or processed data (Davenport & Prusak, 1997:09). However, computers can rarely help with adding context and humans must usually help with categorization, calculation, and condensing (Davenport, 2005).
Regarding information volumes, there has been an ongoing debate if large quantities of information is preferable, questioning whether it is excelling at its purpose or making it difficult for humans to manage (Miller, 1960; Newell & Simon, 1972; Simon, 1996; Cooper, 1998; Davenport, 2001a). This opens for avenue for research regarding information management and how responsible actors will handle this information abundance. Going back to the example of the customer going to the gas station, perhaps effective attention allocation helps to add meaningful insights when anticipating future actions of the customer.

Knowledge
After the creator has collected the information, the next goal is to turn it into knowledge (Zack, 1999). So how is knowledge different from information? Researcher describes knowledge as more complex to grasp than data and information, having an intuitive sense that knowledge is more broad, deeper, and richer than data or information (Davenport, 2005). Further, it can be defined as codified information including insights, interpretation, context, experience, and wisdom (Davenport & Vöpel, 2001). In contrast to information management, on an individual level, people speak of “knowledgeable individuals” and refer to someone with a thorough, informed, and reliable grasp of a subject, someone both educated and intelligent (Davenport, 2001a). Attention is a key factor for both information and knowledge, and in the research field of knowledge management, scholars believe that the results of information management did not live up to the expectations (Davenport & Prusak, 1998; Drucker, 2000; Davenport, 2001a; Hislop, 2009). If latter is true, the success of attention allocation in information management should be incorporated first, before discussing knowledge management. Doing so, it can be discussed to what extent knowledge individuals can analyse the customers, perhaps multiple customers visiting gas stations at the same time.

2.2 Effective attention allocation
What is attention?
Managing information in organizations and what they really should focus on has been a topic stressed by many scholars. The argument has been that focusing user attention on relevant information is imperative in order to succeed. Human attention in that sense can be regarded as a currency which is limited because of its scarcity, and must be controlled accordingly (Davenport & Beck, 2001:09). Davenport (2001b) defines attention has focused mental engagement on a particular message or piece of information and “attention has become a
currency because people just don't have very much of it to spend anymore”. Resultantly, attention is valuable and is getting more valuable all the time. In an organizational setting, organizations can like any other currency, use it to do useful things. Shedding light on what attention is, and how it is defined in an organizational setting is important for this research. If attention is a scarce resource, it is crucial for information suppliers to manage it properly.

Applying attention in the context of human information processing is recognized in the research field of psychology, where the mind and capacity of the humans are central (Franconeri & Simons, 2003; Franconeri et al., 2005; Most et al., 2005). Further, conceptualization of attention on an organizational and managerial level is emphasized in other literature. Here, attention is defined to intersect the noticing, encoding, interpreting, and focusing of time and effort by organizational stakeholders on (1) issues (e.g. available repertoire of categories for making sense of the environment: problems, opportunities, and threats), (2) answers (e.g. the available repertoire of action alternatives: proposals, routines, projects, programs, and procedures) (Simon, 1947; Weick, 1979; LaBerge, 1995). Attention is also focused mental engagement on a particular item of information that comes into our awareness. It is concerns and goals that we focus on, impacting managers and their employees. It has a discernible trickle-down effect, implying that employees throughout an organization make decisions about what to pay attention to, is based on their perception of what their managers pay attention to. In other words, what the management believes is important should be considered the most crucial by information suppliers. Managers are busy people, but their attention focus is deemed to be most important (Davenport & Beck, 2001:137).

Why do we need attention?

How organizations manage information and what large quantities of information consumes in the organization, was first discussed decades ago. Much information and large number of activities are vying for attention and the mere management of attention has become a top priority (Davenport & Beck, 2001:08). When it comes to discussing attention in information-rich setting, perhaps the most influential researcher is the Nobel Prize winner in economic science - Herbert Simon (1916-2001). Simon researched organizational behaviour and decision making (Simon, 1947) and particularly, the complexity of effectively manage attention in an organizational setting (Simon, 1971). Regarding attention, he concluded the following:
“In an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it”

- Simon, 1971:40-41

Thereby, after Simon’s (1971) publishing, the debate regarding attention in information management was shifted towards how organizations in information-rich settings should allocate attention, which resulted in that an additional aspect was added. The new implications that emerged regarding information-richness caused more scholars to emphasize attention management to a larger extent, later resulting in consensus among scholars that the effective allocation of attention is imperative (Simon, 1971; Davenport, 2001a). This process must be actively encouraged, because without a conscious plan by the information supplier for where attention should be directed, it is unlikely that members of an organization would go to the trouble of finding the information that truly matters themselves (Davenport, 2001a). The attention phenomena incorporated by Simon (1971), can be viewed as the process of picking the right information and giving it to the rightful user in order to eventually gain knowledge. Further, in an information-rich setting, the attention phenomenon must be fulfilled in order for the organization's long-term survival (Simon, 1997). Attention focus is important because it provides a filter through which information suppliers identify issues. According to Nadkarni & Barr (2008) attention focus can be directed toward the external information environment (e.g. competition, regulations, macroeconomic factors, technology) or the internal information organizational context (e.g. organizational structures, resources, policies and procedures, communication channels).

If we agree with statements highlighted in research, perhaps giving the right information attention is a tough nut to crack for the information suppliers. Attention in information-rich contexts intersects management studies in particular studies (Simon, 1947; Ocasio, 1997; Hodgkinson & Healey, 2011). According to subject literature, organizations needs to emphasize attention management strongly, however simply focusing on increasing attention in organizations is regarded as complex and lacks focus (Davenport, 2001a). This means that other approaches are needed in order for organizations to effectively guide themselves
through information blindness. Simon (1971) and others (Quinn et al., 1996; Davenport & Prusak, 1998; Drucker, 2000) stated that evidently the quest to move beyond information management and into the realm of knowledge management is a complex undertaking involving the development of structures that allow the organization to recognize, create, transform and distribute information. Given the assumption that the quest to allocate attention is of high importance, it’s arguably worth it to highlight the details and fundamental implications involving the creation and sustaining of attention, before entering into the field on knowledge management (e.g. managing already codified information with added interpretation and context).

**Why do we lose attention?**

Like any other currency, attention can be lost just as easily. The question why information users lose attention is related to the question of how much of the information pushed out is being absorbed and accounted for. These matters have been under speculation. Studies have tried to shed light on why information suppliers face difficulties when trying to get the message in the information out to the users (Davenport, 1997:83). The demand for information is based in the assumption that the critical deficiency under which most organizations operates, is the lack of relevant information (Lindvall, 2009:193). The natural reaction is that organizations keep on supplying information even though no one knows it's being accounted for (Davenport, 1997:83; Jackson & Farzaneh, 2012). The state of information overload implies that a user’s ability to perform rapidly declines due to extensive information flows (Chewing & Harrell, 1990). The burden of heavy information load will confuse the users, affecting the ability to set priorities, managing what they actually know and make prior information harder to recall (Simon, 1996; Davenport, 2001a; Eppler & Mengis, 2004).

Information overload also occurs when the supply exceeds the capacity, which affects user’s ability to decide which organizational actions and problems needs attention (Perlow, 1999; Hall & Walton, 2004). Since information overload is a growing challenge, the question of how suppliers of information can gain attention from the users is an increasingly urgent concern for organizations (Haas et al., 2015). Since few of us have a good sense of how to process vast amount of information effectively, we are bound to allocate attention ineffectively (Davenport & Beck, 2001:13). Scholar has tried to pinpoint who is responsible for this outcome. One suggestion is the information systems, IT functions or other
information suppliers within organizations. However, sometimes objectives within organizations have never been defined as dealing with anything but pumping out more and more information. It would have been preferable if responsible actors had addressed information management to a larger extent (Davenport, 2001a). In the next section, a more thorough elaboration on how attention can be managed will be presented.

2.3 Creating and sustaining attention

This research identifies that effective allocation of attention (as argued by Simon, 1971) is equate to the information supplier's ability to influence the creation and sustaining of the user’s short- and long-term attention. As mentioned in the previous section, the allocation of attention is crucial in order for organization’s long-term survival (Simon, 1971; Davenport, 2001a). If this is true, it is interesting to investigate what influence the allocation of attention over a period of time, namely how to create attention and further how to get the users to hold on and sustain attention. This section will constitute to three levels of attention, namely creating, reinforcing and sustaining attention. In other words, mapping and constructing an overview of what implications information suppliers work in order to get the users to hold on and sustain attention in the long-term. The purpose of this section is to present three levels of effective attention allocation that is summarized by a conceptual model.

2.3.1 Creating attention

Customization

In order to create attention, studies have highlighted that it is central for individuals in organizations to focus their attention on important messages in the information. At the level, attention of the individual is their ability to focus the energy, effort, and mindfulness on a limited set of elements that enter into the consciousness at any given time (Ocasio, 1997). Therefore, it is imperative for information suppliers to be aware of the absorption capacity of the users in order to be accurate in their distribution of information to a particular user or groups of users. One suggestion has been concretized in literature, arguing for adopting less extensive and less frequent supplying of the information that needs attention. In other words, less and more concise information is more likely to get attention in an early stage (Hansen & Haas, 2001). Further, when the users of information perceive it as having been created for them alone, it is more likely to be attended to (Davenport & Beck, 2001:195; Davenport, 2001a; Hansen & Haas, 2015). On this topic, research suggests that suppliers of information
should be as specific as possible, meaning that they should address the distribution towards single individuals in the organization. With this in mind, a crucial principal success factor relating to the creation of attention should be for information suppliers to communicate the feeling of “it’s all about me”, hence more focus on customization of information (Davenport & Beck, 2001:195).

Regarding sending large quantities of information, too broad and standardized information increases the risk for important information not getting attention, while less important information tends to disrupt the focus of the users (Lindvall, 2009:181). Consequently, large distribution lists should be avoided when distributing information. With this in mind, customization is about matching the information distributed to the right users (Hansen & Haas, 2001; Davenport, 2001a). It is argued that information suppliers are more likely to create attention to information that is closely matching their expertise, as they are driven by the features of a particular supplier-problem match (Hansen & Haas, 2015). If this is true, in order to customize information, the supplier should focus the creation of attention on the basis of their own expertise, but at the same time, align the matching with the users. In addition, the information supplier creates attention to what is important for the organization, by processing issues and answers forming the basis for organizational moves delegated from the top management (Ocasio, 1997; Davenport & Beck, 2001:215).

Furthermore, how the user’s information-absorption capacity is influenced by customization is discussed in research. See et al. (2009) highlights the differences in the individual cognitive capacity affect the ability to understand complex information, thereby influencing the likeliness of attention being created to the information. This is connected to how organizations are transferring messages characterized by complex, and for some people hard to grasp messages, and has been under investigation in literature. Complex information can have problem characteristics such as length, breadth, and novelty. It has indicated that information containing technical language is less likely to be attended (Zander & Kogut, 1995; Hansen & Haas, 2001). Therefore, conveying background and basic knowledge connected to the areas of responsibility of the users is relevant when discussing attention creation. Hence, one way to get attention user attention is of course to give them attention (Davenport & Beck, 2001:14).
Visualization

In the distribution, technical language and complexity of numerical information could in fact limit the information supplier’s ability to create attention to important information (Hall, 2009). The importance of numerical information has been questioned since scholars show that complex social and organizational context requires diverse information, ranging from facts and forecasting to gossip and intuition (McKennon & Bruns, 1992). However, with customization in mind, Hand (2007:7-10) argued that the main part of organizational distribution of information consists of numerical information. It is traditionally collected from the accounting system with a purpose to provide transparency. Since numbers are perceived as being objective, it results in the general accepted perception that “accounting is the language of business” (Lindvall, 2009:184). It is argued that the legitimacy of numerical information today is taken for granted, since it provides a simplified description from where conclusions on further actions and decisions can be made (Carruthers & Espeland, 1991; Hand, 2007:6). Other strengths regarding information based on numbers includes the function as a common language, facilitating organizational communication platform, by combining the user’s different background, experience and knowledge (Hall, 2009).

In the digital era, it has been indicated that visualization tools and techniques are increasing in value (McAfee & Brynjolfsson, 2012). Vance et al. (2008) found that visual elements in the content of the information, such as layout and colour selection affect the user’s perception of the trustworthiness of the information supplier. In order to create attention, transferring complex and quantitative information requires the information supplier to put accent on the packaging and designing of information. Accordingly, studies have acknowledged that the presentation of complex messages can be strengthened through visualization (Swaab et al., 2002). Complex numeric information in the distribution introduces a practical and effective use of graphic communication. It implies that “rather than tell me, instead show me” (Davenport, 2013). For example, complementing numbers with charts, a topic or message can be strengthened. In this regard, size and visual enhancement does matter. Graphically, this means the bigger the circles and stacks are, the more effective attention creation (Davenport & Beck, 2001:40).

Measurements

Furthermore, literature consider performance as one of the most important variables affecting attention creation in information distribution (Shimizu, 2007). Simply speaking, when
discussing information-rich environments in the digital era, you cannot manage what you do not measure (McAfee & Brynjolfsson, 2012). Accordingly, research implies that what does not get measured, does not get attention. For example, how you measure the performance of individuals directly affects the way they act (Davenport & Beck, 2001:36). In this context, organizations can use performance measures as a means of assessing effectiveness, hence as a tool for creating attention. Sullivan (2010) argues that it is more likely to create attention when organizations are facing poor performance as it creates a context where the information users primarily need to deal with the performance. An important factor when creating attention is whether the information provokes emotion in the recipients. It relates to circumstances in which the focus on information will trigger negative or positive emotions (Davenport, 2001a). Further, when information users focus on the organizational performance, their personal emotions will have to be set aside. Organizations that deliver positive results tend to deviate the focus on activities associated with performance, which allow the information users to lose attention to the organizational goals (Stevens et al., 2015). In other words, in good times, it can be challenging for information suppliers to create attention.

2.3.2 Reinforcing attention

Social network

Reinforcing attention introduces interactions between the information supplier and the users to a higher extent. In order to strengthen the creation of attention, this study argues social relations are important for information suppliers to stress, hence the literature review presents an additional level in attention creation. The information supplier’s ability to reinforce attention to messages in the information is dependent on the social relations between the information supplier and the users. This social network can be viewed as “the pattern of ties linking a defined set of persons” (Seibert et al., 2001), enabling collaborative communication and facilitating the distribution of information among network members. The characteristics of social relations are constituted by the interaction between the information supplier and the users, and are strengthen by interpersonal ties. Granovetter (1973) defines the strength of a tie as “a combination of the amount of time, the emotional intensity, the mutual confiding, and the reciprocal services” where each of these is independent of the other. In this regard, the strength of the ties in social relations can influence the creation of attention. Social networks that consist of weak ties are characterised by lower amounts of interaction, resulting in a greater amount of information distributed (Granovetter, 1973). Therefore, it is believed that
weak ties provide superior information distribution benefits than strong ties. In detail, weak ties are said to be less costly for the information supplier to maintain in the terms of interaction (Hansen, 1999; Anderson, 2008). In a social network where ties between the information supplier and the users are weak, the transferring of word and numbers become more efficient compared to a social network consisting of strong ties (Uzzi, 1997; Hansen, 1999). Granovetter (1973) highlights that trust is related to the user’s capacity to predict and affect the behaviour of the information supplier, a capacity which reduces in the existence of weak ties. Also, another effect of weak ties is that users tend to have less motivation to be responsive towards a supplier to whom they have no direct and indirect connection with.

Weak ties can however be strengthened by the use of legitimacy, which is the perception that one “ought to obey” another (Taylor, 2006). By referring to decisions, compliance and policies enacted by the top management, the information supplier can use their legitimacy to link the users more closely to the area of responsibility, in order to reinforce attention. Research also acknowledges that information suppliers can use managers in order to strengthen attention. When doing this, managers can be seen as complementary forces, reinforcing attention in the distribution (Ocasio, 2011). According to Sandström et al. (2014) information suppliers can use legitimacy to control the users, ensuring that necessary resources are mobilized so that all relevant perspectives and interests is taken into consideration when reinforcing attention to messages in the information. In contrast to weak ties, stronger ties involve larger time commitments because the more frequently individuals interact with one another, the stronger their sentiments of relation for one another. Further, it is argued that a social network with strong ties encourage the reciprocity which promote the information supplier when transferring complex information (Fernández-Pérez et al., 2013).

**Trust**

Connected to strong ties, trust is dependent on social relations to develop, it is also argued to influence the information supplier ability to reinforce attention when transferring information. Trust is a mechanism in relations that can be equated to “glue”, strengthening the ties between the information supplier and the users. There are two different aspects of trust: the trust the users have to the information supplier providing them with information, and the users trust toward the reliability of the distributed information (Mayeh et al., 2016).
The issue of trust is problematic in the context of information distribution where information suppliers and users (1) do not have a shared history, (2) are “geographically spread”, (3) are initially unknown to each other and lack a “shared social context” and, (4) interact with limited “face-to-face encounters” (Sarker et al., 2011; Mayeh et al., 2016). Some researchers argue that face-to-face encounters are considered irreplaceable when building trust (Jarvenpaa & Leidner, 1999; Wilson et al., 2006), introducing the question whether these interactions are necessary when reinforcing attention. Research has demonstrated that trust in distributed relationships is often affected by silence (e.g. lack of response) from remotely located information users, stating that physical distance affects the constructs of trust (Sarker et al., 2011). Clear role divisions among organisational members and well-defined specialities help the information supplier to build trust, while inconsistent role behaviour and inconsistent of areas of responsibility seems to erode trust (Jarvenpaa & Leidner, 1999). Another argument concerning the benefits derived from trust is that an information supplier that possess a high level of trust, are supported by the users to a greater extent, regardless of the message of the information. These arguments brought up trust as a mutual interaction which seems to support the exchange of information between anonymous traders, indicating that the information supplier can gain trust from the users as long as the role of the information supplier serve as a repository of reputation (Carson et al., 2003).

Information users not trusting the information supplier might have reason to questioning the distributed information. In other words, users not trusting the information that is distributed will affect the attention being reinforced. Several studies have highlighted that the user’s trust towards the reliability of the distributed information is crucial for the information supplier’s ability to capture attention to specific events. Research also suggests that timely, accurate and direct information distribution between information suppliers and users has a positive impact on trust (Ryssel et al., 2004). It is also stated that information suppliers that filter and edit the information in order to increase its quality and reduces the total amount of information (e.g. less extensive and less frequent), helps to improve the reputation of the supplier as being trusted and more likely to get attention (Hansen & Haas, 2001; Davenport & Beck, 2001:199; Davenport, 2001a; Haas et al., 2015).
2.3.3 Sustaining attention

User commitment

Sustaining attention in the long run has been argued being different from initially creating and reinforcing attention. The difference between capturing attention in the first place and sustaining attention is nothing short of the difference between making a promise and keeping it (Davenport & Beck, 2000). To further sustain attention, suppliers are relying on the information user’s capacity to hang on to the information, and to their ability to keep that in mind when being exposed to new information that requires attention (Weick & Sutcliffe, 2006; Ocasio, 2011). Davenport & Beck (2000) claimed that individuals have a natural instinct of wanting to feel engaged and committed, and these human preconditions needs to be tapped into and utilized by information suppliers.

The information user’s ability to hold on to information can be referred as the need for cognition, which can be described as a personality trait strengthening the commitment and likelihood of the users to gather and process information in the long run (Cacioppo & Petty, 1982; Anderson, 2008). When user commitment is established, the cognitive motivation is an important variable when explaining the individual capacity to sustain attention. Information users low in cognitive motivation tends to have a weak tendency to engage in information processing activities, influencing the user’s capacity to assimilate information. Information users that are committed tend to seek, acquire and reflect on information and to make sense of stimuli and interest transferred from the information supplier (Cacioppo et al., 1996; Dickhäuser et al., 2009). In contrast, information users that lack commitment, tend to further examine and question information they cannot understand or grasp, making it harder for information suppliers to sustain attention (Cacioppo et al., 1996). Anderson (2008) argued that information users that are committed are more likely to search across many information domains, they also tend to find and retrieve information, encouraging the information supplier’s ability to sustain attention.

To make sure that the users sustain attention, the information suppliers need to make sense of the information. Doing so will improve the user’s capacity to hang on to information that requires attention. In detail, the information supplier can through linkage of top-down and bottom-up of cognitive processes, allow the users to identify new issues, generate new action alternatives and provide new ways to make sense of information (Ocasio, 2011). Sensemaking focuses on two different aspects, the first aspect helps the information supplier
to call the information into existence, by asking “what’s the story here?” associated to initially creating attention, while the second aspect brings meaning to the information, by asking “now what should I do?” (Nigam & Ocasio, 2010). The latter is connected to hold on to and sustain attention. In other words, bringing meaning into the information, the supplier facilitates the cognitive process by calling for the user’s instinct of wanting to feel engaged and committed (Davenport & Beck, 2000). With this in mind, the information supplier need to utilize the user’s cognitive motivation and realize that committed information users might be less influenced by customization, visualization, social networks and trust earlier presented.

**User pull**

In previous sections, the information supplier starts to consider the information users to higher extent, engaging in activities that influence the likeness of information absorbed (see section 2.3.1 and 2.3.2). As earlier mentioned, information users that are committed are more likely to search across many information domains, they also tend to find and retrieve information important to them (Anderson, 2008). Elaborating on the previous section, it is interesting to highlight a discussion regarding the information supplier’s ability to get the information users engaged to a point where they feel the need to retrieve relevant information by their own. This is associated with the concept of user pull, worth presented when discussing the information supplier’s ability to sustain attention. Many information suppliers have withdrawn push technology in favour of information pull (Jackson & Farzaneh, 2012). The concept of information push implies information distribution without considering the users. In other words, push information eliminates the need for attention and leads to a high level of cognitive dissonance and increases the amount of useless information. (Jackson & Farzaneh, 2012; Davenport & Beck, 2001:77; Shih, 2006). In push strategy, relevant information is promoted directly towards the information user, based on the information supplier traditional way of working. Therefore, pushing out information today is not effective in order to create and sustain attention in the long run

A pull strategy however, begins with the information user creating a demand pressure back to the information supplier (Drury & Farhoomand, 1999). The act of pulling information decides that the information users want the information and search for it, hence stimulating their ability to sustain attention. The process of articulating the need and acquiring the information takes a large amount of attention (Davenport & Beck, 2001:77). However, the purpose of this section is to take the discussion even further, transferring more responsibility over to the
information users to seek relevant information. In pull, when to retrieve the information is decided by the user and not when the information supplier sees fit to do so (Lindvall, 2011:146; Jackson & Farzaneh, 2012). This might alleviate the responsibility and time consuming factors related to information distribution put on the information supplier. Turning the table, we will end up in a supply-push and user-pull mode. The perceived benefits (e.g. time saving and cost reduction) of a new technology tend to push individuals to use it at work and that the social context influences organizational communication pattern (Shih, 2006). Coherent with previous raised factors, pull information further emphasises the relation with what researchers have called the “cognitive motivation”. In this context, it refers to the extent to which the users feel they need information and therefore seek that information in order to understand it. Also, in pull, human motivation can be expressed as an engagement in the work performed (Jackson & Farzaneh, 2012). Therefore, at this stage, the task and responsibility of creating and reinforcing attention does not rest upon the shoulders of information users. In the organization perspective, the responsibility of creating, reinforcing and sustaining attention is a burden shared by the users and the suppliers.

2.3.4 The conceptual model - our study lens

Our conceptual model is constructed through breaking down effective allocation of attention into three levels that facilitate the information supplier ability to create, reinforce and sustain attention (see Figure 2). It incorporates three levels influencing creating, reinforcing and sustaining of attention. The model is derived from the literature presented in the previous section and serves as basis for analysis when approaching the empirical data in search for insights. This theoretical lens allows for the researchers of this study to concretize and expand how three levels of information supplying, influence the entire process to which literature refers to effective attention allocation by the information supplier.

Figure 2. Our conceptual model - three levels of attention allocation

<table>
<thead>
<tr>
<th>1</th>
<th>Creating attention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Customization</td>
</tr>
<tr>
<td></td>
<td>- Visualization</td>
</tr>
<tr>
<td></td>
<td>- Measurements</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2</th>
<th>Reinforcing attention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Social Network</td>
</tr>
<tr>
<td></td>
<td>- Trust</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3</th>
<th>Sustaining attention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- User commitment</td>
</tr>
<tr>
<td></td>
<td>- User pull</td>
</tr>
</tbody>
</table>
3. Learning from information suppliers

Attention facilitates in effective allocation and presumes the organizational long-term survival (Simon, 1971; Davenport & Beck, 2001:11; Davenport, 2001a). In contrast, ineffective attention allocation further increases information blindness, hence the information supplier’s ability to create and sustain becomes limited. This study wants to broaden the understanding of the term effective allocation of attention from a practitioner's standpoint, making it more tangible for practitioners and scholar alike. Therefore, respondents were first and foremost chosen through their role as an information supplier, with hope of contributing to a more nuanced picture of creating and sustaining attention. The authors of this paper argue that attention is embedded in the gap between information and knowledge (see section 2.1) that is problematic as scholars believes that the results of information management did not live up to the expectations (Davenport & Prusak, 1998; Drucker, 2000; Davenport, 2001a; Hislop, 2009).

This study wants to provide an understanding regarding the gap between information and knowledge, where the author of this study believe attention is embedded. This statement rest upon the belief that the information supplier should consider important abilities needed in effective allocation of attention to the users. Also, it rests upon the understanding that the complex undertaking that facilitates in transforming data to information and later on to knowledge, is a necessary quest in order to move beyond information management and into the realm of knowledge management (Simon, 1971; Quinn et al., 1996; Davenport & Prusak, 1998; Drucker, 2008). Managers are busy people, but their attention focus is deemed to be the most important in companies, providing the information users with interest, values and identities that regulate how they think and act in organisations (Lawrence & Lorsch, 1967; Davenport & Beck, 2001:137; Stevens et al., 2015). As abundance of information demands delegation, responsibility is being trickled down, why this thesis direct its focus on the role of the controller. In the gap between information and knowledge, the role of the controller comes into play as one of they have a key role function in supplying important information to the users (Scherrer, 2003; Lindvall, 2009:20; Wolf et al., 2015). As earlier mentioned, Figure 1 in section 2.1 presents an overview where we place the controller in this transformation. Taking these thoughts into account, we argue that role of the controller is a legitimate example of an information supplier worth investigating.
Before the collection of our primary data, the authors wanted to get an indication that the literature approach was appropriate for this study. Therefore, during the initial stages on working with this paper, two pre-study interviews were conducted with individuals that had long experience in roles that closely interacts with information supplying (see Table 1). The main purpose of these interviews was to verify that our literature findings, derived from subject research reviews including the most important aspects influencing the effective allocation of attention. Further, the secondary aims constituted was to (1) get a deeper understanding about information distribution, (2) let the subjects describe their reception from several information users in order to get a more collective picture about the emotional aspects, and (3) enhancing the attention-understanding what effective allocation of attention meant for them.

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Position</th>
<th>Organization</th>
<th>Medium</th>
<th>Interview length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Study 1</td>
<td>CFO Global Services &amp; Operations, Business Planning &amp; Reporting</td>
<td>Telia Company</td>
<td>In person</td>
<td>70 min</td>
</tr>
<tr>
<td>Pre-Study 2</td>
<td>Senior Accountant</td>
<td>Software One</td>
<td>In person</td>
<td>90 min</td>
</tr>
</tbody>
</table>

*Table 1. Our pre-study participants, their roles, and interviews features*

### 3.1 Complexity of the content

In order to conduct our analysis, empirical data was collected. Our study included seven interviews with respondents that in their organizations, is responsible for distribution of information (see Table 2). The respondents represented organizations from the public and the private sector, to ensure that a comprehensive perception of the information supplier’s ability to create and sustain attention was captured. It is important in research that the subjects can provide a perspective regarding attention allocation that will elucidate and clarify aspects of the investigation lens (Farquhar, 2012:06). After conducting the interviews, our conceptual model was the primarily tool for making the analysis. By focusing on data collected from these interviews, our findings are contextualized in close connection towards these interviewees, resultantly the conclusions made are limited accordingly (Bryman & Bell, 2007:494).
In this specific study, we were looking for qualitative evidence influencing the effective allocation and the likeliness of attention in short- and long-term being created and sustained. Authors like Farquhar (2012:90) and Flick (2009) outline the approaches of collecting qualitative data and as our research strives to understand a complex context that cannot be measured in numbers (e.g. allocation of attention), this is the preferable approach. Also, approaching qualitative data studies provides an opportunity for researchers to dig into complex areas, especially when it is difficult to study (Doz, 2011). This approach also encourages flexible and contextual strategies in preparing an interview. By collecting data from interviews, we were looking for common ideas and themes that were significantly apparent in effective allocation of attention. Furthermore, in search of a more nuance elaboration on the topics related to complex areas (e.g. attention), it calls according to Birkinshaw et al. (2011), for more investigations through qualitative based studies. This will increase the understanding of the complexity of the context presented. If not, there is a risk that research will deny its existence and ignore possible environmental differences caused by complex issues (Doz, 2011).

Regarding extending already existing theories and thoughts, qualitative research allows to some extent to be free of an excessively fixed reliance on a chosen given theoretical opinion. Therefore, qualitative approaches have a greater opportunity and freedom to expand existing literature regarding attention allocation. The different viewpoints of the interviews will, to a certain extent, prevent the researcher from discovering a predetermined pattern of findings (Doz, 2011). Focusing an exploratory approach and with a theory expanding liberty, a certain level of inductive focus will emerge. These characteristics are important when striving to broaden the understanding regarding sustaining of attention. However, one can also argue for a deductive approach to this research, since it is also based on the business and psychological perspectives and literature at the outset regarding effective attention allocation. This is apparent when this research addresses the information supplier’s ability to short-term attention creation. Resultantly, combining these two, this research gets the characteristics of an abductive form, implying an approach that combines deduction and induction. This approach uses empirical data for induction, but applies (as this research) a literature background to provide an initial understanding in the field of attention allocation. This means that the literature is used as a source of inspiration when explanations are provided. Thereby, during the research process, the use of literature and empirical data are flexible, redefined and reinterpreted iteratively (Dubois & Gadde, 2002). The need to generate or elaborate on
existing literature that recognize complex contexts, has also been identified by business scholars (Håkansson & Snehota, 1995; Welch & Wilkinson, 2004), backing up our research design of abductive reasoning. These premises relate to the core of our research, capturing the complex context of effectively allocate attention, and additionally even further enhancing the argument for making a qualitative study our method of choice.

3.2 Semi-structured interviews and situational practice data collection

The empirical evidence under investigation in this study was collected from seven interviews. The interviews conducted in our research were organized and applied with a semi-structured and informal approach (Kvale, 1996; Holme & Solvang, 1997:99). Semi-structured embeds more flexibility during in the argumentation and allow for our exploratory process, and inquiry about respondent’s perception (Holme & Solvang, 1997:99; Yin, 2009; Saunders et al., 2009). In sustaining attention, we got an indication that answers should be searched for in information supplier’s ability to address soft factors (e.g. emotions and commitment) in users. In search for answers with social and soft explanatory backgrounds, several scholars support semi-structured approaches for gathering data and developing understandings of social interaction and soft factors (Lundahl & Skärvad, 1999; Rennstam & Wästerfors, 2015).

The study also encourages flexible and contextual strategies in preparing interviews. By collecting data from the interviews, we are investigating common ideas and themes that are significantly apparent (see section 3.1.1). The interviews consisted of open questions based on a general relationship perspective which allowed for non-defined replies in line with the explorative approach of the study connected to attention. Also, the interviews were approached with open questions being asked to allow the respondents to tell their view on the matter and not let preconceptions mislead. However, eventual non-expected new leads concerning attention allocation were followed up (Patel & Davidson, 2003). In accordance, open-ended questions could be advantageous because the agile characteristics of the discussions allows for unexplored areas to be revealed (compare section 3.1.1) as it promoted follow-up questions and participants to develop their answers further (Bryman & Bell, 2007:481). Open-ended questions were particularly important when addressing how practitioners sustain attention. According to Farquhar (2012:73) it is important to be prepared for unexpected new information as situations may change during interviews. Putting emphasis
flexibility in the data collection, adapting research to new insights and theories is appropriate during a semi-structured interview situation (Farquhar, 2012:74).

The respondents represented organizations from the public and the private sector in order to gain a more comprehensive perception of information supplying and the abilities associated with creating and sustaining user attention. Also, the respondents were primarily chosen due to their position in the organization as a controller. That being said, interview-based research approaches require a critical stance towards the empirical data generated during the interviews since the individual portrayals can be distorted and thereby evidence more questionable (Silverman, 2005). Evaluating table 2, one can see that the respondents represent both private and public sector, together with slightly deviating titles. In the data collection process, Alvesson & Sköldberg (2009) has presented ways of being source-critical and specifically importance has been given to the ideas of criticism of bias and dependence. It is important for researchers to be aware of these problems and have an objective approach. We early established an understanding and made sure that our respondents had relevant experience in information distribution, together with using communication through financial information to a large extent. Criticism of bias discusses the probable bias of any researcher and how personal experience and frames of reference has the ability to affect interpretations. We were aware of the fact that the empirical evidence could be affected due to eventual differences in background, experiences and organizational context of the controllers. However, we were striving to find similarities in creating and sustaining user attention, rather than differences in the supplying of information.

Therefore, emphasis was put on highlighting similarities and consensual agreements relating to effective allocation of user attention when interpreting and coding (Bryman & Bell, 2007:595-597). Criticism against dependence focuses more on external factors, other stories or interviews, and how they can interfere with the research. This might have been the case when going from one respondent in the private sector to a respondent in the public sector. All controllers were however to some extent affected by an abundance of information, resultanty leaving them responsible for the effective allocation of attention and in this context, creating and sustaining user attention. This fact was of great importance when keeping an objective standpoint in the data collection process. Knowing that our respondents represent only a fragment of all information suppliers and that their work setting might differ, our conclusions are limited to these interviews accordingly (Bryman & Bell, 2007:414).
<table>
<thead>
<tr>
<th>Respondent</th>
<th>Position</th>
<th>Organization</th>
<th>Medium</th>
<th>Interview length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controller 1</td>
<td>Financial Controller</td>
<td>Alfred Berg Fondkommission</td>
<td>In person</td>
<td>45 min</td>
</tr>
<tr>
<td>Controller 2</td>
<td>Business Controller</td>
<td>Schindler Group</td>
<td>In person</td>
<td>70 min</td>
</tr>
<tr>
<td>Controller 3</td>
<td>Business Controller</td>
<td>Uppsala University</td>
<td>In person</td>
<td>50 min</td>
</tr>
<tr>
<td>Controller 4</td>
<td>Business Controller</td>
<td>Knivsta Kommun</td>
<td>In person</td>
<td>60 min</td>
</tr>
<tr>
<td>Controller 5</td>
<td>Business Controller</td>
<td>Knivsta Kommun</td>
<td>In person</td>
<td>60 min</td>
</tr>
<tr>
<td>Controller 6</td>
<td>Business Controller</td>
<td>Knivsta Kommun</td>
<td>In person</td>
<td>50 min</td>
</tr>
<tr>
<td>Controller 7</td>
<td>Business Controller</td>
<td>Uppsala Kommun</td>
<td>In person</td>
<td>90 min</td>
</tr>
</tbody>
</table>

Table 2. Our study participants, their roles, and interviews features

3.2.1 Operationalization - from theory to questionnaire

Linking the empirical findings to existing theoretical and prior studies we deployed an operationalization model found in Table 3. The framework offers a dual research approach and incorporates both situational and general properties to allow semi-structured interviews. This came to constitute as our interview guide in the data collection (see Table 3). The operationalization model is derived from the conceptual model presented in the literature review (see section 2.3). The conceptual model was confirmed using the learning derived from the pre-studies. Doing so, the operationalization model and the questions included had implications from both practitioners and the academia. Questions that investigate the information supplier’s experience to create attention are labelled [2]-[7]. Questions that explores the information supplier’s experience to reinforce attention are labelled [9]-[12], and finally, the information supplier’s experience to sustain attention are referred to question [14]-[17]. Questions of more general character correspond to question [1], [8], [13] and [18]-[21].
<table>
<thead>
<tr>
<th>Capability Categorization</th>
<th>Categorization proxy</th>
<th>Operationalized questions</th>
<th>Situational case follow up questions</th>
<th>General questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>To create attention</td>
<td>Customization</td>
<td>- To what extent does customized information affect the creation of user attention?</td>
<td>[2] How do you experience the user absorption, when the distribution of information is directed to a group of individuals compared to when directed to one individual? [3] How do you experience the user absorption, when the information is standardized or/and customized? (e.g. background, pre-knowledge and expertise)</td>
<td>[1] Explain how you create user attention in information supplying?</td>
</tr>
<tr>
<td></td>
<td>Visualization</td>
<td>- To what extent does visualization of information affect the creation of user attention?</td>
<td>[4] How do you experience the user absorption, when the information is based by numbers, or text or/and a combination of both? [5] How do you experience the user absorption, when the information is visualized, compared when not being visualized?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Measurements</td>
<td>- To what extent do measurements affect the creation of user attention?</td>
<td>[6] How do you experience the user absorption when using measurements? [7] How do you connect measurements and do this affect the user influence and if, in what way?</td>
<td></td>
</tr>
<tr>
<td>To reinforce attention</td>
<td>Social networks</td>
<td>- To what extent does the social network affect the reinforcement of user attention?</td>
<td>[9] How do you experience the user absorption, when the information is distributed in a social network? [10] When time, emotions and mutual confiding’s is scarce, how do you compensate?</td>
<td>[8] Explain how you reinforce user attention in information supplying?</td>
</tr>
<tr>
<td></td>
<td>Trust</td>
<td>- To what extent does trust affect the reinforcement of user attention?</td>
<td>[11] What is your experience when it comes to the users trust to you and your role as an information supplier versus the users trust to the information distributed? [12] How do you describe your experiences regarding trust when it comes to improve the user’s ability to assimilate information?</td>
<td></td>
</tr>
<tr>
<td>To sustain attention</td>
<td>User commitment</td>
<td>- To what extent does user commitment affect the sustaining of user attention?</td>
<td>[14] What is your experience when it comes to user commitment in a long-term perspective? [15] What is your experience when it comes to bottom-up and top-down processes and how does it influences the user commitment?</td>
<td>[13] Explain how you sustain user attention in information supplying?</td>
</tr>
<tr>
<td></td>
<td>User pull</td>
<td>- To what extent does user pull enable the sustaining of user attention?</td>
<td>[16] What do you think is important in the long run when getting the users to retrieve information by themselves? [17] What can you do to encourage the interest of the users to retrieve information and what are the consequences?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capability overall</th>
<th>Categorization proxy</th>
<th>Operationalized questions</th>
<th>Interview questions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Process</td>
<td>- How does an ordinary information distribution process look like?</td>
<td>[18] Describe how the ordinary process of information distribution is designed at [company]?</td>
</tr>
<tr>
<td></td>
<td>Lesson learnt</td>
<td>- What are the key success factors in information distribution?</td>
<td>[19] Describe your key success factors when it comes to distribute information in information-rich settings?</td>
</tr>
<tr>
<td></td>
<td>Enabling conditions</td>
<td>- What is the enabling conditions for information distribution?</td>
<td>[20] Describe how you as an information supplier enables the user’s ability to assimilate important information?</td>
</tr>
<tr>
<td></td>
<td>Limiting conditions</td>
<td>- What is the limiting conditions for information distribution?</td>
<td>[21] Describe which limiting conditions you experience as an information supplier when distributing information in information-rich settings?</td>
</tr>
</tbody>
</table>

Table 3. The operationalization model
3.3 Analytic Strategy

To help us understand how the process of information supplying affects the user’s ability to assimilate information, we identified three levels of attention that related to effective attention allocation and our research question (see Holme & Solvang, 1997:141–142). These levels constitute to three analysable aspects: create, reinforce and sustain attention. The interviews were audio recorded after the permission of the respondents, and transcribed verbatim shortly after in order to ensure a reliable interpretation of the interviews (Kvale, 1983; Lundahl & Skärvad, 1999). If there were doubts concerning the correct interpretation or information was missing, it was possible to get back to the respondents with attendant questions either in person, by telephone, or by e-mail. The transcript text was used as the basis of the analysis of our conceptual model (see Figure 2).

4. Evidence revealing capabilities in creating and sustaining attention

Section 4.1 aims to reveal evidence in line with information supplier’s ability to create attention, triggering the user’s attention to important information for them and the organizational needs. Hence, we refer to our contributions as the information suppliers triggering capabilities. In Section 4.2, evidence will highlight important aspects in building relations through human interactions. These aspects come into relevance when information suppliers strive to reinforce user attention. There is reason to believe these relational capabilities are crucial in reinforcing attention. Section 4.3 presents more thoroughly how controllers work to sustain attention through tapping into user commitment. This section provides the understanding that sustaining attention requires engagement capabilities from the information supplier.

4.1 Triggering capabilities

During our empirical collection, evidence has indicated that the information suppliers in this research indeed take the information users into consideration. This includes knowing the user’s capacity to absorb information, along with background, basic knowledge and general understanding of the working conditions of the users. The interviewees emphasized that understanding these aspects are fundamental when highlighting and discussing how information can be absorbed by the users. In many regards, this section answers the question why triggering capabilities is important when creating attention. With the empirical evidence in mind, we derive several indications where information suppliers use different techniques
that help to create attention to important information. The majority of the respondents admit that broad and standardized information distribution has little effect when creating attention. One controller concretizes this statement by avoiding the use of emails with broad information directed to different groups of users.

“Emails to groups of users can be difficult. People tend to simply not respond to them, even though they expect the information to come by mail” - Controller 3

Acknowledging this claim, it is interesting to know why information presented this way is ineffective. But, knowing how controllers tackle this issue is arguably more important for this research. Suggestions in our evidence shows that having a general understanding of the information users working conditions, together with recognizing what information pressure they are exposed to, are important when creating attention. Indeed, the majority of our interviewees claimed that being aware of the information users help them to create attention to information that needs to be taken into account. Most of our respondents are aware of that the information users are under a lot of stress and big workloads. Therefore, the distribution of information the controllers conducted has been significantly adopted according to these preconditions.

“I need to grasp the everyday life and problems of the users. To supply them with information that is of importance to them, it is essential to understand these things” - Controller 2

When elaborating the information user’s background in relation to the information distributed, our findings indicates that there is a discrepancy in the information distribution to individuals that do not share the same basic knowledge as them. There is an agreement among most of the controllers asked, that the creation of attention becomes difficult when information users lack the sufficient basic knowledge. In those scenarios, the controllers need to customize information in ways coherent with the individual's capacity to understand for them complex information.

“Even though I sit in different subunits, it demands that you are decreasing the differences among the users and instead, focusing on finding the similarities when communicating” - Controller 7
“I really need to adapt to certain individuals, my language in particular in order to get my message through, I can’t communicate and use concepts which I use with my colleagues with the same background as me” - Controller 6

Furthermore, our findings indicated that controllers need to address the same reality that is apparent for the users, but interpreted by someone with a different perspective. Our controllers believed that adding the perspective of a business standpoint is effective regardless of what basic knowledge in business the information user had. Coming from a business standpoint, some of the controllers see themselves as presenters of facts that add sceptical reasoning. When using a common language, it made it easier to address these facts in a more satisfying manner, making complex information easier to transfer by the supplier.

“I place the facts on the table and tell them like it is. For example, I will tell them clearly how certain changes will affect the upcoming financial result”
- Controller 7

4.1.1 Customization and Visualization

Our findings in the previous section show that information suppliers in this research take the information users into consideration. This section will present findings that reveal more in detail what information suppliers do in order to create attention to information that vary in complexity. Resultantly this part contributes evidence showing that information supplier in this research create attention using customization and visualization.

Our findings showed that one challenging aspect our responding controllers face, is overcoming misunderstandings and knowledge barriers surrounding the numeric information. Therefore, the vast majority of the controllers are continuously reminded that information in a convenient manner was crucial, adapting the information distribution to the user’s background and basic knowledge. On the topic of using business language, one information supplier stressed that when distributing important messages in the information, it demands putting a lot of emphasis on being educational.

“It is very important to think about how you communicate and how you present information to different individuals. In particular, I refer to individuals that don’t share the same background as me. It requires you to be very concise and really lift what is important in extensive cases” - Controller 2
There was a consensus among our respondents regarding the importance of adapting information among our interviewees, our findings revealed that the information suppliers use several different techniques in order to overcome knowledge barriers. To create attention to relevant information despite the user’s basic knowledge or interest in business, the information supplier had to make complex information simple to understand. A lot of thoughts were concentrated towards information containing numbers especially. Regarding information containing financial numbers, the respondents highlighted that they are aware that there might be difficulties in understanding them. Therefore, making the financial numbers easier to understand was on every controller’s agenda. This was most apparent in our findings when the controllers communicate with users that lacked a background or education in business. Information distributed by the information supplier, it was common to add attachments consisting of explaining texts for educational purposes. Thus, translating the financial numbers into words was preferable in many cases, especially when the information supplier wanted to embed important messages by referring to ratios for example.

“In order for us to explain messages in financial numbers, we need to use a language that everybody can understand, since, it’s not certain that they fully understand every ratio” - Controller 6

Furthermore, the majority of the respondents had positive experiences in approaching the users by using visuals. Some controllers even compared the period before the implementation of visuals in reporting and presentation and could see big improvements in the user's receptivity. By adding visuals attachments in the reports, they believed that chart and other graphical tools in many cases could help when creating attention to important messages. Resultantly, using visuals excels the strengths of only using numbers and texts. Moreover, our findings also expressed a sense of satisfaction when the total amount of information sent out each month declined due to the positive implications of using visuals.

“Before, they probably didn’t take time to look at the numbers and therefore, they didn't understand the relations. The report was later on, supplemented with graphics. Nowadays, the receivers seem to understand what the monthly reports really shows. The change made my role simpler, as the report package shrunk and consequently, the total amount of information” - Controller 1
In addition, our findings confirm that using graphics could help the controllers to express different signals in the financial numbers. This indicate that techniques were used when the controllers wanted to express that numbers were associated with deviations. When used in information, it signalled if the users should focus more on one area than on others. Information suppliers applied colours on numbers in order to signal positive or negative abnormalities in the report. For educational reasons, these colours were also explained in separate attachments so that the users could be reminded of what it meant and signalled. In contrast, one supplier preferred to stick to the story when explaining the financial numbers.

“To make it even more pedagogical, we use the colours green, yellow and red. Also, additional instructions to what they signal are also included, together with charts if it suits them better” - Controller 2

4.1.2 Measurements

In this part, our findings will present different indicators that information suppliers addressed in their distribution. These indicators helped the controllers in guiding and explaining to the information users what is important in reporting. It could not be ignored during our collection of data, that our respondents repeatedly mentioned different indicators and goals and connecting them to the creation of attention. These indicators we have chosen to call attention triggers.

The attention triggers were often connected to the user’s measurable areas of responsibility. The controllers expressed that using triggers connected to responsibility correlated positively when creating attention. Accordingly, you must also be willing to give responsibility. One controller expressed his feeling toward giving responsibility this way “To give the users a bag of money is not enough, you need to be prepared to give responsibility” We took this quote as an indication that addressing responsibility is something important for controllers when distributing information.

“It is imperative to be clear and address responsibility the users have, what subunit they are responsible for, and the budget connected to it. This makes the process of taking information surrounding their responsible area in consideration, much easier”

- Controller 2
Moving forward, our findings showed that it is fundamental for information suppliers to know what area of responsibility the information users have. Knowing this, the controllers can use it to their advantage when creating attention to information. In addition, using these methods, our evidence shows that attention triggers effectively can build bridges from the users to their areas of responsibility. Hence, the purpose of these triggers was to point to what the users are responsible for, together with being very clear about the degree of seriousness connected to their responsibility. Getting the users to realize the consequences and monitoring the objectively is crucial.

“We derive the user’s area of responsibility from a business monitoring template. From these templates, we establish a bridge by explaining what the deviations means and what the cause is for it is, and how it is connected to the users” - Controller 6

Our respondent had several different examples of what these attention triggers could be, together with different ways of using them. By using triggers, our findings revealed that the controllers can establish a common ground on which the distribution of information can proceed. It was regarded as effective because it meant that the controllers had something practical and tangible to address, making it easier to create user attention. We got an indication that controllers could create attention by aligning the user’s area of responsibility with several different triggers. These triggers indicated positive or negative results influencing the users differently. These triggers were measurements such as key performance indicators (KPIs), cost centres or user goals connected to budgets and prognosis. When the users understood what these indicators meant, information suppliers used them as triggers of attention.

“In good times, it is easy to be carried away, when times are getting worse everything is put on the edge which requires people to start working” - Controller 6

“We use a lot of KPIs. The reports I send, ties together the KPIs with the organizational strategy. From these, we try to communicate what we should be focusing during the year and I feel that the users really are taking the into account. It also makes easier for me reveal what is hidden behind the numbers and therefore easier to address important messages” - Controller 2
4.2 Relational capabilities

4.2.1 Social Network

Our findings indicated that capabilities concerning social network and the relation between the information supplier and the user are important when reinforcing attention. The implications of the strength of ties within the social network were highlighted by the information suppliers in this research. The majority of the information suppliers highlighted that building a social network consisting of strong ties takes time to build. Also, the majority of the information suppliers were geographically dispersed in relation to the user. Our findings indicated that the distribution of information and the likeliness of it being absorbed is dependent on the amount of time they put on establishing a social relation with the users.

“It is challenging to win them all over. When you feel that you have everybody aboard, there is always someone who falls back. I’ve been on two parental leave, and after returning I’ve needed to work on winning some individuals back” - Controller 6

Evidence indicated that the information suppliers had found ways to strengthen weak ties by using their legitimacy. Since the information suppliers were geographically dispersed in relation to the user, attention was reinforced by using their legitimacy. By being very straightforward about what function and authority the controller has is therefore significant for their ability to strengthen the ties within the social network. Some of the respondents enhanced their legitimacy by referring to compliance and policies. Here, the controllers needed to be very clear about what the consequences could be, otherwise the information might not be taken into account.

“Legitimacy is something I build through communicating what function and authority I have in the organization. Also, when I specifically refer to compliance and policies, it helps to reinforce attention” - Controller 6

The respondents also mentioned that weak ties could be strengthened by the support from the management and it could be useful for building their own legitimacy. Knowing that you had support from managers, it made the process of reinforcing attention more effective. In addition, some of the information suppliers took the supporting ability one step further, using the manager's authority when getting the users to take important information into consideration. Using these sorts of “sponsors”, it gave way for relevant information getting
through more effective, hence reinforcing attention. One controller said that this is effective in order for controllers to reach as far out in the organization as possible.

“I tell middle managers to present material that I have prepared during the regional meetings. That is a way for me to reach out in the organization. This method is effective and therefore, much of my information distribution goes through them” - Controller 2

There was a consensual understanding among our respondents, that a social network of strong ties was something that takes time to build, especially, if the users do not know who you are and if the organizational distance is far. Giving important information attention using a sponsor was however not always preferable. In contrast, some of our respondents chose not to go through managers.

“Because I have been in this business a long time, I have realized that knowing and working with the whole organization is very important, no matter in what position you are. I prefer to stand side by side with the managers, not behind or in front” - Controller 7

4.2.2 Trust

Going forward, our findings showed that information suppliers value social relationships to a high degree, and in particular they put emphasis on establishing trustful relationships with the information users. This means that trust towards the role of the controllers and the person, together with trusting that the information that are being sent are correct, contributes to reinforcing attention towards the distributed information.

“Trusting is something I had to work on, but I have worked a fairy long time with the users. They know what is expected from me, but also what is expected from them” - Controller 6

We quickly came to an understanding that information suppliers having a relation with the information users experience trust, and are much better off than those who experience a lack of trust. As brought up earlier in this thesis, being aware of the users preconditions and having a general understanding of the working condition of the user’s is important (see 4.1.2). Why trust is so important in reinforcing attention became apparent when we asked the information suppliers how trust affects their information distribution. Creating interpersonal relationship
built on trust was imperative for the controllers when asked about further reinforcing attention creation. In other words, information suppliers can use their trust to enhance the reinforcing of attention even further, alleviating the pressure on the supplier to spend too much time on customization. It was stressed that there are dangers in distributing information to users that do not trust the numbers in reports. In the long run, that could also deteriorate the trust you initially have established with them.

“If the numbers aren’t correct, it might have long-term effects. The information can be used in other purposes than first intended for, rumours might start to go around that the financial department are not to be trusted” - Controller 2

How information suppliers build trust is also something worth taking into consideration when discussing the reinforcement of attention. Our respondents were specific about that the first step of building trust is through making sure that the information they sent out was well considered and correct. Therefore, making sure that the quality of the numbers was considered important when reinforcing attention through trust.

“We [controllers] need to stress the importance of quality in the information because that is one of the reasons why we are there in the first place” - Controller 4

Building trust also requires information suppliers to give trust back. One controller explained that when treating each user like managers, helps to reinforce attention to what is important for them. Building trust is also about having an equal understanding of what is expected from one another, and knowing that trust takes time to establish.

“Much of my work is about building trust. However, giving trust back is also something important” - Controller 7

4.3 Engagement capabilities

Taking the findings that are presented above into consideration, there are indeed ways in which information suppliers can create and reinforce attention to important information. It is concretized by users afterwards asking “now what should I do?” However, to a large extent, it is only applicable in controller’s ability to catch the user’s attention in the short run and
information suppliers cannot spend too much time on users with low cognitive motivation. What our findings shows is that controllers use other methods when struggling to prevent users to lose focus on important information, and consequently fall short. In order to sustain attention, it is imperative for information suppliers to involve the user’s emotion and interest. In other words, the information supplier need to focus more on investing time and effort on soft factors such as user commitment and natural instincts. Our findings reveal that engagement is a crucial factor if attention on important information is going to be kept and sustained in the long run.

“The difficult part of attention is that it is a lot of information that is sent out, and yes, we can make the reports more user friendly by using visuals for example. But, it’s not possible to spend too much time explaining something on a level of a five-year-old” - Controller 1

“We emphasise management by being objective to a high degree. It is tricky to sustain attention especially when it comes to financial numbers. But, engagement to certain goals help when the users understand these objectives” - Controller 4

Encouraging engagement is indeed important. The question of how to create engagement and to what, is relevant to ask ourselves. Focusing more on details in this matter, our findings gave us some indications of how information suppliers face this. A majority of the respondents uses the attention triggers (discussed in section 4.1.2) to a large extent when trying to get the users more interested. The information supplier can facilitate the user’s cognitive motivation by calling for the instinct of wanting to feel engaged and committed by making sense of the information by using of KPIs for example.

“We [controllers] really try to get them more interested in the numbers and to take more responsibility. As we use a lot of KPIs, I always try to get the users interested in them accordingly” - Controller 2

Our evidence confirms that sustaining attention to important information is something different from creating attention in the first place. Evidence point towards that information suppliers need to play on user’s emotions, focusing on engaging and getting the users more interested in the information, hence the meaning of the information. Taking this into account, the key of getting the users more engaged is perhaps to create an interest to the information.
“It’s about interest. It is easy to lose interest in good times. No matter what the financial results are, the users that are interested in the numbers are always the ones that are committed to go on by themselves” - Controller 6

According to our findings, controllers fights against two obvious obstacles when establishing a long-term focus. The first obstacle and perhaps the most significant, is that users easily lose focus. In other words, information suppliers find it difficult to sustain attention due to the fact that the users tend to get distracted when constantly being exposed to new information. Our controllers often experienced a lack of interest from the user’s side, especially towards the numbers. Our findings also indicated that the controllers experienced a loss of focus when the users lack in engagement.

“We [controllers] really need to focus on sustaining the engagement towards the numbers. If I let go of something important, I’ve noticed that it is common it won’t be followed up. Especially surrounding financial information” - Controller 2

The second empirical indication acknowledges the traditional view of controllers and a need for the role to be revised. This means that traditional views and misconceptions towards controllers influence their ability to sustain attention. If the information supplier is stuck in pushing information, it might be difficult to sustaining attention. In response to this, we have indicated that the role of the controller might have to be evolved if more emphasis is going to be put on sustaining attention through commitment. Therefore, this matter might be relevant for all information suppliers.

“I want to get away from just pushing out excel reports. A lot of the users are very forward-looking and suggest improvements when things aren't working. This sort of engagement I want to use. I want to refer to a common platform where they can get the information themselves. The controller should encourage them in doing so and take a more proactive role, in the future I want to be the one calling them in supervising purposes”

- Controller 2

The information supplier’s experienced that when they have successfully created attention in the short-term, the next step in order to moving forward is to get the users interested to a point where engagement capabilities can help to alleviate the pressure on the information supplier.
There was a consensual agreement amongst the respondents that utilizing user’s commitment is important if getting the users to retrieve the information themselves. This means the desire to seek, acquire and reflect on information and to make sense of stimuli and interest, also related to the information supplier’s engagement capabilities. Our findings showed that a number of the respondent organizations had implemented technological solutions facilitating user pull. However, the respondents believed that a lack in basic knowledge of the users, together with a failure in making the systems user-friendly, confined the use of technological solutions in line with user pull. Resultantly, the enactment of reaching user pull fell short.

“The information system that we use, allowing the users to retrieve information themselves, are obsolete and simply not in line with the user’s basic knowledge” - Controller 7

4.4 Summary of empirical lessons

From a scholar and practitioner perspective, it can be argued that the learning from the empirical observations made in our collection of data should be taken into consideration. We have divided the empirical evidence in three categories of capabilities, all derived from the information supplier's short- and long-term capability to create and sustain attention. In summary, the information suppliers in this research indicated that information are being customized, visualized and measured in order to initially trigger attention. Also, implementing attention triggering measurements is equally common in creating user attention. This constitutes the information suppliers triggering capabilities. By emphasizing social network and trust, learning can also be drawn from the perspective of reinforcing attention, hence the information supplier’s relational capabilities. Finally, our findings show that sustaining attention in the long run, demands significantly more commitment from the users when holding on to and not lose attention that was initially created and later reinforced. Engagement capabilities showed to be important when addressing user commitment and utilizing user pull. The capabilities are however restricted in the sense that their only applicable in one perspective, namely the one of the information supplier. This will consequently impact us to the extent that the analysis is limited accordingly.
5. Principles of creating and sustaining attention

Our analysis is limited up to a point where the sample is a small part of all information suppliers, together with fact that we have evidence from one perspective, namely the information supplier. However, the subject literature indicates that information suppliers need to effectively allocate attention in order to fight information blindness which has become everybody’s concern (Simon, 1971; Davenport & Beck, 2001:11; Davenport, 2001a). According to our findings, effective attention allocation facilitates in information supplier’s trigger, relational and engagement capabilities. In this study, we can conclude that controllers in their role as information suppliers, takes the users into consideration to a large extent. Likewise, our evidence point towards practitioners strongly highlights these matters accordingly in their distribution. In order to facilitate our findings, we have set up four conditions on which our findings will be elaborated. Section 5.1 presents the four conditions from which our outlined capabilities in creating and sustaining of attention constitutes. Section 5.2 provides a discussion how effective attention allocation can go forward, elaborating more on the pull factors in managing information. Finally, our research field contributions leading up the discussion about information pull is summarized and presented in figure 4.

5.1 Four attention driven conditions

Elaborating around our findings, the analysis will be posted in different conditions. These conditions will lay the foundation on which our findings will be framed by using applicable literature. In other words, the outlined capabilities derived from our findings can be confirmed and expanded upon using subject literature. Our findings point towards four conditions that actively allow the information suppliers to create and sustain user attention. Afterwards, recommendations to practitioners and scholars can be made.

5.1.1 Condition #1: Making customization a habit

In order to create attention, information suppliers have to use triggering capabilities in their distribution. Information suppliers need to be aware of how different backgrounds and basic knowledge affects the user’s capacity to attend various type of information. The likeliness that important information is going to be absorbed by users can actively be improved (Davenport & Beck, 2001; Davenport, 2001a; Hansen & Haas, 2015). Our findings further nuance the proposed answer to the question why customization is important. In order for information
suppliers to initially create attention to messages in the information they are sending, understanding preconditions such as limited set of elements entering the conscious (as discussed by Ocasio, 1997) comes into relevance. Accordingly, our evidence shows that it is arguably important for information suppliers to enhance the likeliness of information gaining attention from customized distribution (consistent with Davenport & Beck, 2001; Davenport, 2001a).

Information suppliers in this study use numeric information when creating attention. Our evidence intersects the literature regarding the usage of numeric information in multiple ways. Interpreted from our findings, the transfer of information characterized by complexity was recognized by the information suppliers and taken into consideration when distributing information (in line with Zander & Kogut, 1995; Hansen & Haas, 2001). Also, the information suppliers indicated that there was strength in using numeric information (e.g. Carruthers & Espeland, 1991; Hand, 2007:31; Lindvall, 2009:16). Numeric information as a “language of business” contributes objectivity, helping information suppliers in creating attention. With this in mind, information suppliers have to customize the information in order to enhance the complexity of the information. The degree of complexity in the information, constitutes to what level information suppliers need to customize the information distributed to the users. The evidence from this study indicates that creating attention demands customization of the information. We have indicated that information suppliers that are aware of discrepancies in basic knowledge and cognitive capacities between them and the users, are concentrating more thought on these particular individuals. This was especially apparent when the users lacked basic knowledge in information consisting of numeric information (in accordance with McKinnon & Bruns, 1992).

5.1.2 Condition #2: Utilize attention triggering measurements

Our findings showed that using attention triggers in the distribution of information was common. Related to the previous recommendation, using triggers has shown to be effective when creating attention to messages in the information (see section 2.3.1). Moving forward, our evidence signals that highlighting indicators connected to the organizational goals and focus, is according to this research, important when creating attention. More in detail, the respondents in this study gave reason to believe that users respond positively to attention triggers (e.g. KPI’s, cost centres or goals connected to budgets and prognosis), most commonly used by the organization, and then connect them to the user’s area of
responsibility. To facilitate attention, the interviewees persistently highlighted the usage of triggers in their information distributed. Using measurement has been acknowledged in prior research to be something important, stating that you have to measure in order to manage (see Shimizu, 2007; Davenport & Beck, 2001; McAfee & Brynjolfsson, 2012). Resultantly, when information suppliers had something concrete and tangible to hold onto in their information, it correlated positively with the creation of attention. More in detail, the relevant literature also relates to our findings when the controller address varying performances (Sullivan, 2010; Stevens et al., 2015), and how it is used in order to trigger preferable emotions in the user’s minds (see Davenport, 2001a). Elaborating even more on this topic, the literature highlights dangers concerning positive performances (e.g. Stevens et al., 2015), stating it allows users to divert the attention from organizational goals. Similar more precise remarks were made in our evidence (see 4.2.1).

To further enhance the use of measurements in creating attention, evidence revealed that information suppliers use visuals to a large extent. The benefits derived from using visualization and graphical tools in the digital era have been acknowledged in previous research (McAfee & Brynjolfsson, 2012). On this subject, the majority of the information suppliers complemented numeric with visualizations in order to create attention (compare Swaab et al., 2002; Davenport, 2013). Also, the colouring of numbers the and enhancement of proportions was emphasised in the supplier’s distribution of information, with the purpose to signal deviations from the performance measurements. This indicated that size and visual enhancement does matter. Graphically, the bigger the circles and stacks are, the more effective attention creation is (as argued by Davenport & Beck, 2001). We interpreted that the frequent usage of charts and other visuals tools constituted to additional triggering capability when creating attention.

5.1.3 Condition #3: Reinforce attention through social networks and trust
When applying this additional dimension based on the relational in the discussion, directing focus on more intangible and soft factors in the reinforcing of attention, establishing a middle level where personal interaction comes into relevance. In this sense, we claim “it takes two to tango”. It can be argued that long geographical distances (as argued by Sarker et al., 2011; Mayeh et al., 2016) between the information suppliers do not allow strong ties to be built, hence it is difficult to establish trustful bounds. The geographical distances were also frequent in our findings, most likely due to the time-consuming implication and other factors
associated with close interactions (stated by Uzzi, 1997; Hansen, 1999; Anderson, 2008). In those cases, the respondents highly relied on using their legitimacy in their information distribution and they put more value in establishing the reinforcing of attention through legitimacy. Our respondents often refer to policies and other compliance frameworks in the information, hence what they “ought to obey” (in line with Taylor, 2006). This helps to enhance the legitimacy possessed by the information suppliers, resultantly also their ability to reinforce attention to distributed information. Also, worth noticing is that the interviewees used managers as “sponsors” when reaching out as far as possible in the organization (as argued by Ocasio, 2011). Also, legitimacy can link the users more closely to responsibility areas in order to strengthen weak ties. In this perspective, legitimacy can be a way for information suppliers to control the users in order to reinforce attention (as suggested by Sandström et al., 2014).

Our findings also show that building trustful relationships demands effort and time (as suggested by Granovetter, 1973). For example, in our evidence face-to-face meeting and interaction is highlighted, where the opportunity to get a feeling of what information is relevant for a particular user, also making that individual more reciprocator. This correlate positive to the subject literature (Jarvenpaa & Leidner, 1999; Wilson et al., 2006), claiming face-to-face meeting is irreplaceable when building trust. As stated in prior research on the subject, trust enables collaborative communication that facilitates the distribution of information among network members (Seibert et al., 2001; Mayeh et al., 2016), especially when the content is numeric and complex (Fernández-Pérez et al., 2013), making the establishment of trust important in the context of reinforcing attention.

Information suppliers in our research highlight the dangers in not having trust, claiming that destructive rumours being created and spread. In relevant literature, the information supplier serves as a repository of reputation influenced by the quality of the information distributed (Carson et al., 2003). Also in line with this claim, research suggests that timely, accurate and direct distribution of information between suppliers and users has a positive impact on trust to the information (Ryssel et al., 2004). There is also stated that information suppliers that filter and edit the information in order to increase the quality of information and reduces the total amount (see section 2.3.1) helps to improve the reputation of the supplier as being trusted (Hansen & Haas, 2001; Davenport & Beck, 2001; Davenport, 2001a; Haas et al., 2015).
5.1.4 Condition #4: Utilizing the user’s commitment - the key to sustaining attention

The difference between creating attention in the first place and sustaining attention is in the long run different (as proposed by Davenport & Beck, 2000). This indication has also been acknowledged in our findings accordingly. Our findings indicate that information suppliers need to engage user’s emotions, focusing on getting them more interested and hang on to numbers (e.g. complex information), even though they are continuously exposed to new information (in line with Davenport & Beck, 2000; Weick & Sutcliffe, 2006; Ocasio, 2011).

First, we want to align learning derived from customization (see condition #1). It states that customization can be an effective tool for initial attention creation. However, in the long run this might be obstructive when wanting the users to be engaged in the information. In this perspective, information users with a low commitment have a weak tendency to engage in cognitive processes, resulting in a low motivation to seek, acquire and reflect on relevant information (as argued by Cacioppo & Petty, 1982; Cacioppo et al., 1996). Our empirical findings intersect these statements when remarks were made that engagement is more important than wasting time customizing information to the users on an elementary level. We have indicated that when information suppliers distribute numeric (e.g. complex) information, it makes it easier for users to lose focus. We can find explanations in literature that relates to this observation, stating that information users low in commitment tend to have a weak tendency to engage in cognitive activities, which influences the information supplier ability to sustain attention (see Dickhäuser et al., 2009).

In this condition, the discussion shifts focus from customization and social networks to the information supplier’s capability to utilize user commitment to a point where users feel engaged to the information. Establishing commitment and motivate the users to evaluate complex information, intersects subject literature, saying that the search for information is dependent by the level of cognitive motivation of the users (as stated by Cacioppo & Petty, 1982; Dickhäuser et al., 2009). The individual ability to seek, acquire and reflect back on information and to make sense of stimuli and relationships, searching across many information domains for stimuli, seems also to be dependent on the level of engagement experienced by the users (Cacioppo et al., 1996; Anderson, 2008). After creating attention, the aspect of users asking themselves “now what should I do?” comes into play (see Nigam & Ocasio, 2010). We can see tendencies of this in our findings, taking the form of desires from the controllers that users should engage in numeric numbers (e.g. complex information).
According to our findings the information supplier’s use of sensemaking of information becomes crucial factor when engaging the users, which facilitates a change in direction from a top-down process to a bottom-up process. Relevant subject literature indicates that in order to identifying new issues, generate new action alternatives and provide new ways to make sense of information (in line with Ocasio, 2011). Accordingly, our analysis has interpreted that there is important aspect in our findings pointing towards that information suppliers should encourage interest and motivation, alleviating the overall responsibility of the information supplier (as suggested by Anderson, 2008). That way, one can argue that the traditional procedure of distribution information might shift.

5.2 Expanding the horizon of user pull factors

We argue that conditions presented above incorporates recommendations worth considered by practitioners and scholars alike. We believe that pull factors in information distribution is a necessity in order to what Simon (1971) refers to as effectively attention allocation. We have also acknowledged that effective allocation demands information suppliers to incorporate capabilities that alleviates the risk of information user ending up in a state of information blindness (as proposed by Eppler & Mengis, 2004; Hall & Walton, 2004; Jackson & Farzaneh, 2012) The imminent risk of ending up in a situation caused by information overload will require information suppliers to value attention and acknowledge the implication that it is scarce and easy to lose (see Davenport & Beck, 2001; Davenport, 2001a). Figure 3 represents our research design, moving from effective allocation of attention to the four conditions constituting of the capabilities outlined from our findings. This overview conceptualizes the creating and sustaining of attention.
Figure 3. Principles of creating and sustaining of attention

Moving forward, encouraging individuals in need of information and getting them to retrieve information themselves seems to be hard nut to crack. We can however conclude from our empirical evidence that we are not there yet as the majority of the information suppliers expressed disappointment concerning this issue. So why do not the users get the information themselves? Is it a lack of interest or not having the basic knowledge? Our evidence show that there is an interest among the users to retrieve information themselves, however the IT-systems are not in line with user’s basic knowledge, perhaps making the intersection between user commitment and user-friendly systems the key to success in user pull. The thought of users in organization doing this is nothing new, as these characteristics has been highlighted in literature before (Lindvall, 2011:148; Jackson & Farzaneh, 2012). Coherently, our evidence point in the same direction, that information suppliers indeed have a desire to get information users more engaged so that they in the future will retrieve relevant information by themselves. This statement was concretized in particular by one of the interviewees, claiming that in the future, it should be the controller that reached out to the users with the purpose of supervising the information absorption. This call for more proactivity in the relationship between information suppliers and information users, one of the respondents in this study quoted: “In
the future I want to be the one calling them in supervising purposes”. We argue that this can be considered as one of the final stages of complete pull mode in information distribution. We can however start to see tendencies of pull factors emerging in our analysis, where the information suppliers to a large extent take the users into consideration in their information distribution. It finally come down to that users need to take the initiative and one can argue that they are the ones that know what information the matters for them the best. Further elaborations on this matter opens up for discussion whether this transfer of responsibility between information supplier and the users really create synergy, in other word, whether or not the organization are better off when the allocation of attention is up to the users. Moreover, what is also important to highlight is what the outcome of information pull will mean for responsibility in information management. Who will be accountable for effective attention allocation and what will happen to the role of the information supplier if the users all of a sudden start to retrieve information? Our research perhaps provides a picture indicating that the first step towards entering a world of user pull already has been made, when more user-friendly distribution of information is incorporated.

6. Conclusion
Managing attention in information blindness is indeed crucial. Relevant subject literature has indicated that organizations struggle with managing information as attention is scarce and easy to lose. Where literature spoke of effective allocation of attention, this thesis referred to the information supplier’s short- and long-term ability to create and sustain attention. According to this research, there are decisive capabilities embedded in information supplying that perhaps determines whether we win or lose in the fight against information blindness. Thereby, this study sought to map these capabilities. When creating attention in the short term, emphasis is put on the information supplier’s attention triggering capabilities. Afterwards, we indicated that before information suppliers can make sure that attention is sustained in the long-term, information suppliers can reinforce attention through trust and legitimacy, hence relational capabilities. Finally, keep in mind that information users constantly are exposed to new information demanding attention, challenging the sustaining of long-term attention. This introduces reasons for information suppliers to utilize user’s commitment, named engagement capabilities. Findings in this research broaden subject literature and contribute with learning and a deeper understanding of effective allocation of attention. More specific, the findings outlined capabilities related to the creating and sustaining of user attention can be feasible in situated conditions (see section 5.1). The
authors of this study chose to call the contributing section the principles of creating and sustaining of user attention. The conceptual model, together with the information supplier capabilities, provides insight for practitioners and scholars. If successfully adopted, this thesis argues that information suppliers can engage users to a point where user pull can be established, excelling to the information blindness where suppliers pushing information without taking users into account. A shared responsibility in effective allocate attention can be met through user pull. However, anticipating difficulties in this implementation should also be considered.

6.1 Further research

There is a desire from information suppliers that users should retrieve information by themselves, but we are not there yet. By addressing the perspective of information user’s, researchers can add to a limitation in our study and perhaps fill a gap in research in need of a more nuanced understanding. This open for avenues for research aiming to incorporate the information users and finding out why they do not engage in user pull activities to a larger extent. Doing so, a more comprehensive perspective of creating and sustaining of attention can be established. We suggest that there are important insights in our research design and the findings it contributed to, that can help other researchers aiming to expand the field of effective attention allocation and broaden the understanding. Going forward, future research should aim to (1) investigating where the difficulties lay and why information users do not retrieve information by themselves, providing evidence why user pull fails, (2) With the findings in this research in mind, investigating how the outlined capabilities may influence information suppliers and users in an environment of user pull. This will elaborate on the following questions: How will the transaction to user pull change the way we view information distribution, along with how that transaction may influence the information supplier’s ability to effectively allocate attention in short- and long-term?
7. References


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Davenport, T. H. (2001b). *May we have your attention, please?* Ubiquity, vol. 3


