Competitive intelligence failures: an information behaviour lens to key intelligence and information needs

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Abstract

Purpose – Competitive intelligence failures have devastating effects in marketplaces. They are attributed to various factors but seldom explicitly to information behaviour. This paper addresses causes of competitive intelligence failures from an information behaviour lens focusing on problems with key intelligence and information needs. The exploratory study was conducted in 2016/2017. Managers (end-users) identify key intelligence needs on which information is needed, and often other staff seeks the information (proxy information seeking). This paper analyses problems related to key intelligence and information needs, and makes recommendations to address problems.

Design/Methodology/Approach – The study was placed in a post-positivism research paradigm, using qualitative and limited quantitative research approaches. Fifteen participants (competitive intelligence professionals and educators/trainers originating from South Africa and the United States of America) contributed rich data through in-depth individual interviews.

Findings – Problems associated with articulation of information needs (key intelligence needs is the competitive intelligence term – with broader scope) include inadequate communication between the person in need of information and the proxy information searcher, awareness and recognition of information needs, difficulty in articulation, incomplete and partial sharing of details of needs.

Research limitations/implications – Participant recruitment was difficult, representing mostly South Africa. The findings from this exploratory study can, however, direct further studies with a very under-studied group.

Originality – Little has been published on competitive intelligence from an information behaviour perspective. Frameworks guiding the study (a combination of Leckie, Pettigrew and Sylvain 1996 and Wilson 1981 models and a competitive intelligence life cycle), however revealed valuable findings that can guide research.

Keywords – Competitive intelligence, Failure, Key intelligence needs, Information behaviour, Information needs

Paper type Research paper

1. Introduction

Competitive intelligence refers to the collection, transmission, analysis and dissemination of publicly available, ethically and legally obtained relevant information as a means of producing actionable knowledge (Bergeron and Hiller, 2002, p.355). In addition, Kahaner (1997, p.16) states that "competitive intelligence is a total process, not just a function in the company which is made up of four steps: planning and direction, collection of data, analysis and dissemination". Data or information is required on the environment in which an organisation or company originates, e.g., threats, opportunities and trends, and is interpreted in terms of organisational strategy to produce intelligence or intelligence products (Sewdass, 2012; Du Toit, 2015). Intelligence is used in strategic decision-making. Despite all the efforts competitive intelligence professionals make to create successful intelligence products, failure is often reported (Erdelez and Ware, 2001; Frion and Yzquierdo-Hombrecher, 2009; Tsitoura and Stephens, 2012; Garcia-Alsina, Ortoll and Cobarsí-Morales, 2013; Du Toit, 2015). Competitive intelligence failures result when analytical judgments of data or intelligence turn out to be wrong (Jensen, 2012). When properly formulated key intelligence needs can provide the competitive intelligence process with the ability to adapt to an organisation's information needs (Muller, 2002; Sewdass, 2012). Du Toit (2007) writes extensively on understanding key intelligence needs. From her work, as well as from other authors, it seems as if information needs, prominent in

information behaviour, are closely related to key intelligence needs. More about this is discussed in a later section.

Failures in competitive intelligence have also been attributed to various other factors such as organisational culture, lack of support from senior management, mistakes caused by individuals involved in the competitive intelligence process, including the competitive intelligence professionals and data analysts (Garcia-Alsina, Ortoll and Cobarsí-Morales, 2013; Almeida, Lesca and Canton, 2016; Sandal and Gupta, 2017). Competitive intelligence failures can also be caused by error from incoming data or mistakes made by senior management, competitive intelligence professionals and data analysts (Erdelez and Ware, 2001; Tsitoura and Stephens, 2012; Garcia-Alsina, Ortoll and Cobars-Morales, 2013). Such failures can have devastating effects in organisations, which may result in the loss of opportunities and profits (Nasri, 2010; Tsitoura and Stephens, 2012; Garcia-Alsina, Ortoll and Cobarsí-Morales, 2013; Gračanin, Kalac and Jovanović, 2015).

Although there is a good body of literature on competitive intelligence and competitive intelligence failure (Bose, 2008; Dishman and Calof, 2008; Smith, Wright and Pickton, 2010; Strauss and Du Toit, 2010; Almeida, Lesca and Canton, 2016; Sandal and Gupta, 2017), there is a limited body of literature on both competitive intelligence and information behaviour, and very seldom failures in competitive intelligence are explicitly attributed to information behaviour. The studies by Tsitoura and Stephens (2012), Garcia-Alsina, Ortoll and Cobars-Morales (2013) and Erdelez and Ware (2001) are exceptions. Therefore, the aim of this paper is to address the causes of competitive intelligence failures from the perspective of information behaviour, focusing on the identification, expression, articulation and sharing of information needs as well as key intelligence needs, where the latter is the term used in the literature on competitive intelligence (Bose, 2008; Sewdass, 2012; Wright, 2014) that posits key intelligence needs as specifically related to the information needs of the organisation. Johnson (2006) refers to key intelligence needs as "pre-eminent lists of priorities". This paper will use both the term "key intelligence" associated with competitive intelligence and the term "information needs" as associated with the information behaviour lens from which this paper is written. Various competitive intelligence authors have acknowledged the relation between key intelligence needs and information needs (Jin and Bouthillier, 2007;

Salles, 2007; Du Toit, 2015) but without fully succeeding in exploring the relationship or how information needs follow on key intelligence needs. Although there are good attempts such as Du Toit (2007), many uncertainties remain that requires further investigation. The paper will attempt to make a small contribution by explaining how a term specific to the field of context, that is competitive intelligence, can be related to the terminology used by the theoretical lens applied for the study, that is, the domain specific vocabulary of information behaviour (Johannisson and Sundin, 2007; Sundin, Limberg and Lundh, 2008).

The reason for focusing on information needs must, however, be explained first. This paper developed from an exploratory information behaviour study conducted in 2016/2017 by Maungwa (2017) revealing key intelligence and information needs as core problems in competitive intelligence failures. Numerous studies and conceptual papers from Information Science and Information Behaviour have also reported on information needs as a crucial component in information seeking (Belkin, Oddy and Brooks, 1982; Jiang, Yeh and Lin, 2008; Baro, Onyenania and Osaheni, 2010; Mavodza, 2011; Clarke, Belden, Koopman, Steege, Moore, Canfield and Kim, 2013; Savolainen, 2009a, 2017b). Based on such studies and the results reported by Maungwa (2017) it seemed appropriate to focus this paper solely on the role information needs play in competitive intelligence failure, and where the focus may be in problems of key intelligence needs' and information needs' contribution to competitive intelligence failure.

According to Yusuf, Masika and Ighodaro (2013) "information needs can be seen as demand (requirement) and want (desire)". There are also many other interpretations and as explained in the next section, information behaviour is accepted as any information activity in which people engage, which includes awareness of their information needs, their information seeking, information sharing, information use and communication, preference for information sources, how they interact with information sources, and other related information activities (Wilson, 1999, p. 245; Ingwersen and Järvelin, 2005, p. 384; Case and Given, 2016). The connection between information needs and key intelligence needs is explained in more detail in the next section.

2. Background

The pace of competition throughout the marketplace is rapid (Shin, 2001, p. 165; Rothaermel, 2008, p. 203; Stefanikova, Rypakova and Moravcikov, 2015, p. 210). According

to Kahaner (1997, p. 28), "Turning information into intelligence has become the most critical management tool of cutting-edge business leaders". Dutka (2004, p. 19) further states that competitive intelligence "will ultimately separate successful companies from those that fail." The purpose of competitive intelligence is to focus on the organisational issues that are of critical importance (Muller, 2002, p.2). According to Muller (2002, p. 2) these organisational issues trigger key intelligence needs[1]. Key intelligence needs relates to key areas of intelligence, such as information on the environment that must be collected to produce intelligence on threats and opportunities that can affect an organisation (Du Toit, 2007, p.1). According to Herring (1999, p.6) key intelligence needs are strategic and tactical requirements that are needed to achieve organisational objectives. Nasri (2011) states that the start of the competitive intelligence process involves the identification of organisational issues in terms of key intelligence needs. Similarly, Bose (2008) affirms that the first step in the competitive intelligence process involves identifying the key intelligence needs of the decision makers. The problems associated with the recognition of key intelligence needs are not explicitly noted in the literature, however, the studies by Tej Adidam and Kejriwal (2009), Strauss and Du Toit (2010) and Tsitoura and Stephens (2012) have implied certain individual factors which include individuals' skills, inadequate capabilities, and poor knowledge of the organisation having an impact on the recognition of key intelligence needs. However, the participants of the study by Maungwa (2017), on which this paper is based, sturdily emphasised the problems associated with the recognition of key intelligence needs. From the searched literature only a few competitive intelligence authors mention both key intelligence needs and information needs (Bernhardt, 1994; Herring, 1999). However, none of them fully succeed in an explicit portrayal of how key intelligence needs become what is known in the information behaviour literature as "information needs".

According to Case (2007, p. 333) an information need arises when an individual senses a problematic situation or information gap, in which his or her internal knowledge and beliefs and model of the environment fail to suggest a path towards the satisfaction of his or her goals. Dervin (1999) refers to a gap between what is known and what should be known (Belkin, Oddy and Brooks, 1982). Case (2007) relates an information need to an individual's

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[1] Key intelligence needs are organisational issues of strategic and tactical importance observed as the information needs of an organisation.

gap in knowledge, which according to him is similar to Ingwersen and Järvelin's (2005) explanation of an information need.

From a competitive intelligence point of view key intelligence needs relate to the needs or requirements of an organisation to succeed according to the organisation's vision, mission and strategic objectives. When such needs are expressed for the purpose of seeking information (that can be interpreted as intelligence) it represents a gap that is experienced in the knowledge of an individual who needs to make organisational decisions; we can then refer to information needs of individuals, which fits with the interpretation of information needs as posited in the information behaviour literature.

In a competitive intelligence context, the expression of key intelligence needs may be on various levels of articulation somewhat similar to the levels as explained by Taylor (1968) ranging from visceral (barely an awareness of a need) to formal expressions. Examples of expressions of key intelligence needs include strategic, early warning and profile key intelligence needs. Such expressions of "organisational needs" (i.e., key intelligence needs) might be the same as the first level information need presented by Taylor (1968).

According to Du Toit (2007, p.112) one of the major problems with key intelligence needs is that senior management (i.e., end-users) have difficulties expressing their needs. Du Toit (2007, p.112) further argues that senior managers may have sub-conscious information needs which cannot be easily articulated even with the best methods (Du Toit comes from a background in Library and Information Science as well as Information and Knowledge Management, and she is aware of the long standing battles to solve problems with information needs). Apart from the problems with what Wilson (1999) refers to as dormant information needs (needs that are not recognised), competitive intelligence is complicated by the fact that the person who needs information is often not the person to collect intelligence, i.e., the person seeking information. Intermediary information seeking[2] is a critical element of competitive intelligence. The role of the intermediary (for purposes of this paper we refer to 'proxy information seeker') assumes an important part of the

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[2] Intermediary information seeking is also referred to as proxy information seeking or mediated information seeking.

competitive intelligence process, since it relies upon the effective collection and retrieval of information (i.e., information seeking).

Through an information behaviour lens, the problems of identifying information needs have been addressed by the work of Taylor (1962; 1968), Belkin, Oddy and Brooks (1982), Dervin (1991), Shenton (2007), Cole (2011, 2012), Coonin and Levin (2013), Savolainen (2017a,b) and Ford (2015) who focused on issues such as the four levels of information needs articulation, reference interview techniques, misinterpretation of information needs, users' inability to specify their information needs, sense-making and misguided information needs. According to Ford (2015, p.39) misguided information needs refer to information needs misunderstood by the individual whether known or not known by the information professional. Although Jin and Bouthillier (2006) and Garcia-Alsina, Ortoll and Cobars-Morales (2013) have noted problems with information and key intelligence needs, discussion in this paper is directed by an information behaviour lens and specifically information needs as addressed in the Information Science literature. The fact that information needs build on key intelligence needs can, however, not be ignored.

The preceding background led to a research question addressed by Maungwa (2017) in which he asked: *How are competitive intelligence failures attributed to information behaviour?* To find an answer, Maungwa (2017) worked with five sub-questions:

- How is lack of understanding of competitive intelligence contributing to competitive intelligence failure?
- How are problems in the identification and expression of intelligence needs contributing to competitive intelligence failures?
- How are difficulties experienced in data collection contributing to competitive intelligence failures?
- How are information sharing and specifically feedback mechanisms contributing to competitive intelligence failures?
- How are other information activities (apart from the recognition and expression of information needs, data collection and information sharing): (a) contributing to competitive intelligence failures? (b) preventing competitive intelligence failures?

From the findings by Maungwa (2017) key intelligence and information needs stood out as core issues impacting on information behaviour as well as the competitive intelligence cycle,

and ultimately as a cause of competitive intelligence failure. This papers thus concerns information needs as preceded by the identification and articulation of key intelligence needs.

3. Research Methodology

The study followed a post-positivist research paradigm as defined by Gratton and Jones (2004, p.27): It makes use of different methodological approaches, including qualitative as well as quantitative ones. The study used a qualitative research approach guiding data collection and analysis, with a quantitative approach of limited scope. It used a limited survey to collecting data through a self-administered semi-structured profile questionnaire and a semi-structured interview schedule. Data was collected between August 2016 and February 2017. The profile questionnaire included questions on highest educational qualification, description of professional position and formal training in information seeking and retrieval and the interview schedule covered problems experienced during the identification and expression of competitive intelligence needs, keeping the user informed and information activities causing competitive intelligence failures. Bearing in mind the convenience of the participants, interviews were conducted by means of either Skype, face-to-face meeting, telephone call interview, or face-time call. Interviews took from 11 to 45 minutes. All recordings were transcribed before they were analysed.

Purposive and snowball sampling techniques were used to recruit participants. Two groups were included, namely (1) competitive intelligence professionals, and (2) competitive intelligence educators or trainers. Participants were chosen, since they possessed a knowledgeable background in competitive intelligence. Identifying a suitable study population and recruiting participants are often problematic in competitive intelligence studies (Pellissier and Nenzhelele, 2013; Thatcher, Vasconcelos and Ellis, 2015). Many studies on competitive intelligence benefit from an association with professional organisations such as the Strategic and Competitive Intelligence Professionals (SCIP) South African chapter, which is the local representative body for competitive intelligence professionals (Treviño and Weaver, 1997; Strauss and Du Toit, 2010; Nenzhelele and Pellissier, 2013; Sewdass and Du Toit, 2014). Although only 15 people participated, the in-

depth interviews revealed very valuable, thick and rich data which the exploratory study can use to direct further research.

The ethical clearance for this study was received from the University of Pretoria Faculty of Engineering, Built Environment and IT Faculty Committee for Research Ethics and Integrity. All the participants were asked to complete and sign an informed consent form, which stated that they voluntarily agreed to participate in the study and that they granted permission for the interviews to be recorded. The study attained confidentiality of the participants by assigning a pseudonym to ensure that anonymity was maintained when reporting findings. Names were chosen at random and are not indicative of the gender of participants.

The adapted Wilson (1981) and Leckie, Pettigrew and Sylvain (1996) information behaviour models (Figure 1), and the adapted Botha and Boon (2008) and Bose (2008) competitive intelligence cycle (Figure 2) were chosen as the theoretical frameworks to guide the study. They were deemed relevant to guide the study since they have features that relate to the research question and sub-questions of the original study by Maugnwa (2017). The theoretical frameworks guided data collection; the adapted Botha and Boon (2008) and Bose (2008) competitive intelligence cycle informed questions on the articulation of key intelligence needs and topics, data collection and reporting and dissemination, and the adapted Leckie, Pettigrew and Sylvain (1996) and Wilson (1981) models informed questions about data collection and information seeking, and also feedback from the end-user.
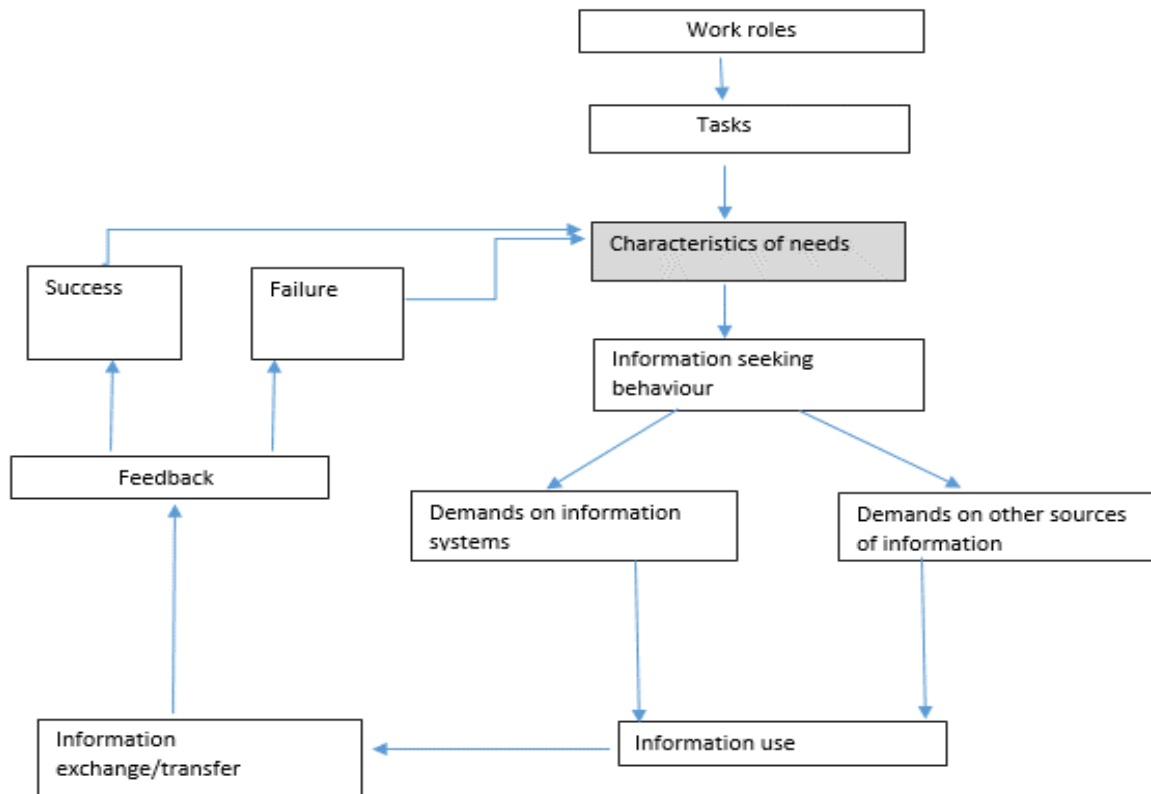
Figure 1: The adapted Wilson 1981 and Leckie, Pettigrew and Sylvain 1996 information behaviour model (Maugnwa, 2017, p.37)
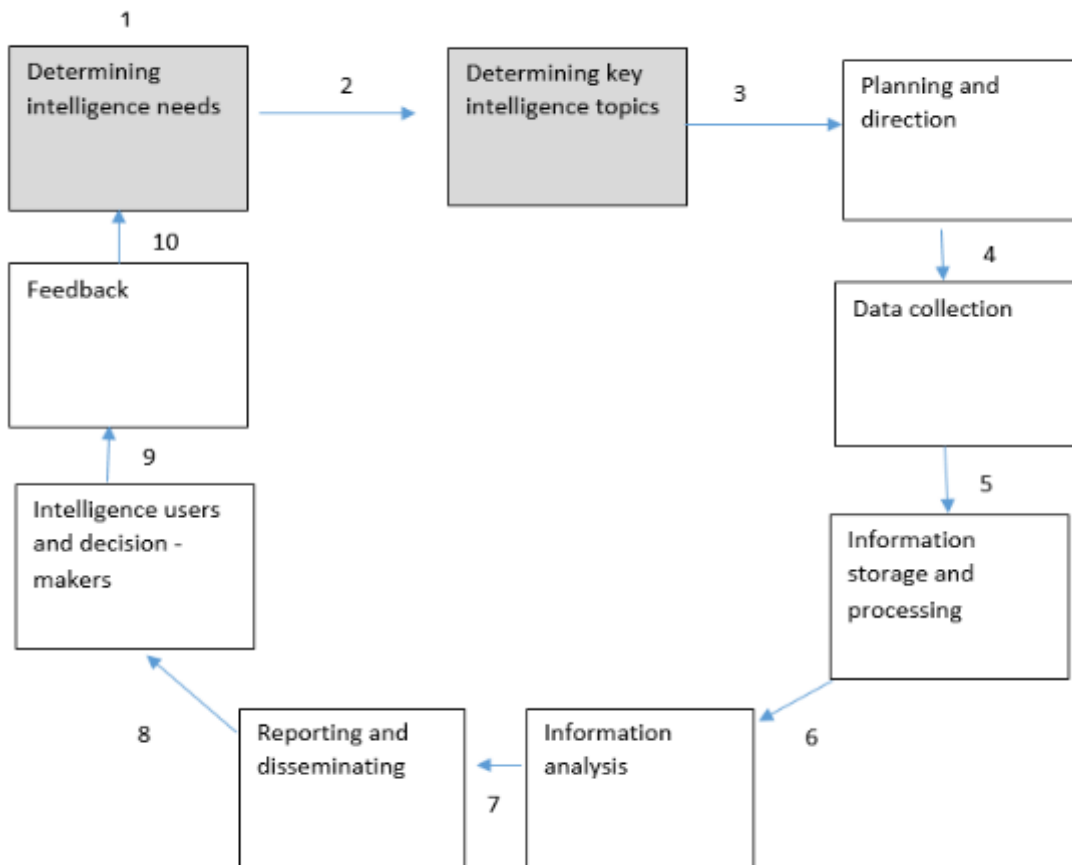

Figure 2: Adapted competitive intelligence cycle guiding the empirical study (based on the phases noted by Botha and Boon (2008) and Bose (2008)) (Maugnwa, 2017, p.42)

The data collected from the individual interviews were analysed by examining and identifying themes and patterns through thematic analysis. According to Braun and Clark (2006, p. 6) thematic analysis is a method of analysing, reporting and identifying patterns. The theoretical frameworks (Figures 1 and 2) also guided the identification of the main categories for coding. Sub-categories, e.g., for problems with key intelligence and information needs, which is the focus of this paper, were based on reoccurring themes that stood out from inductive analysis during several rounds of reading through transcribed data. The first author kept a notebook resulting in a coding scheme where the demarcation of sub-categories was influenced by knowledge of both the fields of competitive intelligence and information behaviour.

3.2. Participants' profiles

Participants varied in their profile and demographic details in terms of highest education qualifications, formal information training, years of experience in competitive intelligence, job descriptions and professional position. Table 1 shows the demographic details of the participants.

Table 1: Demographic details of participants

	Highest educational qualification	Professional position	Formal information training	General job description	Type of organisation
P1	Honours	CIP[3]	Information[4] retrieval	Managing director	Multinational
P2	Honours	CIP & CIE	Information seeking	Financial advisor	Multinational
P3	Masters	CIP & CIE	Information seeking/ Information retrieval	Technology intelligence analyst	Parastatal

[3] Competitive intelligence professional is abbreviated to CIP, and competitive intelligence educator/trainer is abbreviated as CIE.

P4	Masters	CIP & CIE	Information seeking	Competitive intelligence functionary	Multinational
P5	Masters	CIP & CIE	Information seeking	Physiological intelligence	Independent
P6	Masters	CIP	Information seeking/ Information retrieval	Consumer and market intelligence manager	Private
P7	Masters	CIP & CIE	Information retrieval	Financial advisor	Multinational
P8	Masters	CIP & CIE	Information seeking	Senior knowledge management executive	Multinational
P9	Masters	CIP	Information seeking	Consultant	Multinational
P10	Masters	CIP & CIE	Information seeking	Junior Microsoft AX consultant	Multinational
P11	Masters	CIP & CIE	Information seeking	Engagement director	National
P12	Doctoral	CIE	Information seeking/ Information retrieval	Professor and researcher	Educational
P13	Doctoral	CIE	Information seeking	Professor and researcher	Educational
P14	Doctoral	CIP	User studies	Chief financial advisor	Multinational
P15	Military	CIP & CIE	Collection security	Senior specialist in corporate security	Private

4. Findings

Participants emphasised that *"any phase in the competitive intelligence cycle can cause failures, but the activities mostly causing failure is the identification of key intelligence needs"* (Cynthia). Kate explained that the reporting and disseminating of intelligence will depend on the perception of the key intelligence needs: *"The findings of the data analysis should align with the initial information needs"*, while Bob noted the implications of collecting the wrong data (based on understanding of key intelligence and information needs): "*The information activities causing competitive intelligence failures is collecting the wrong data, and does not matter how good the analysis or dissemination skills are, if you have the wrong data, you are already behind the 'eighth ball'"*.

From the participants' responses, (a) processes impacting the awareness and understanding of key intelligence and information needs and (b) factors affecting information needs emerged as the two main categories. Sub-categories for each are discussed. It is not always possible to have clear-cut distinctions between the issues causing failures related to key intelligence and information needs, and some processes also feature as factors. Although we try to avoid repetition some overlap is unavoidable. Depending on how participants expressed their opinions the terms "key intelligence needs" and "information needs" are used interchangeably in reporting findings. As will be shown, many of the causes for problems with key intelligence and information needs also relate to communication, information processing and cognitive problems, and problems with the identification of key intelligence needs also impact on other phases such as data analysis and dissemination (see Figure 1).

4.1. Processes impacting on the awareness and understanding of key intelligence and information needs

Seven processes stood out; these are discussed in the sub-sections to follow.

4.1.1. Absence of specific guidelines and protocols to guide procedures

The correct identification of key intelligence needs serves as the heart of competitive intelligence and directly impact on perceptions of information needs and strategies to collect information; although this depends on information processing and other skills, it is thus most important to have the right procedures such as interviews where the competitive intelligence professionals who recognised the need for key intelligence share their needs for intelligence to be collected. Such interviews should be conducted in a rigorous and stringent manner, and according to guidelines. This includes procedures and questions to be asked – in other words, a protocol and even tools such as templates. It is about the method, and also about the question-negotiation techniques (see 4.1.2). Often this (method, procedure, protocol, and tools), however, seems to be lacking.

Although a few participants stressed the impact of lack of formal procedures, it was clear that participants also greatly differed on whether there is a standard way of determining

key intelligence needs, and whether one procedure can work for all. Some like Steven and Joseph believed in the processes they follow:

> *There are basically two ways of collecting the intelligence needs, as you already know to be the intelligence interview; where you have to sit down with either the senior management, the intelligence user or the stakeholder and ask them what information they need and what they are going to use it for. The second method that I actually prefer, is to use a very specific template, which I call a briefing template. The purpose of a briefing template is to ask questions such as 'Why do you need this intelligence?'; 'Which countries should we cover?'; 'Which competitors should we look at'; 'Which format do you want the intelligence product to be delivered in'?; 'What is the deadline'? and so on.* (Steven)

> *…So there are standard ways of identifying intelligence needs and what is important is to constantly follow up with the end user and ask them if you are on the correct path and if what you have matches their needs*. (Joseph)

Procedures and tools such as templates that can direct an intelligence interview and give guidance on the information that needs to be collected during interviews were stressed. Guidelines on questions that could be asked can help to shape the scope of intelligence collection in terms of rationale and purpose, geographic coverage, competitor demarcation, deadlines for delivery, and format for delivery (i.e., repackaging of information), as well as gaining clarity on the organisational context and strategy. According to Abel, "*It is very important for the competitive intelligence professional to know the organization before conducting any competitive intelligence activity*". Asking such questions is closely related, but not exactly the same, as question-negotiation (section 4.1.2).

From the words of John, a focus and purpose for intelligence collection should be part of the procedure, and the expression and interpretation of information needs. There should be objectives that can be reached, and presumably, also assessed.

> *We use mission clarity, which simply elaborates on what the competitive project will be about, the project focus, and the expected outcomes. Any competitive intelligence project should always aim for clarity before any actual work is done. It is very*

resource-exhausting to conduct any research without clarifying the scope of the

project. (John)

I for one do not agree with the claim that there is no proper standard way of finding

the key intelligence needs. (Alice)

Others like Joseph were sceptical about whether procedures can be standardised, e.g.,

There is no definite way of correctly identifying the client's information needs.

(Joseph)

Even when accepting the notion of standardisation of procedures for identifying key

intelligence needs, such procedures need to be tailored. According to Cynthia the

"… packaging of the intelligence should be tailored-made to the organisation and the

intelligence users."

Instead of commenting on processes and factors that impact on failures with key

intelligence needs, some participants suggested solutions, for example Bob: *"If one-one,*

interview by using a good technique. Listen actively, reflect on answers, build upon it and let

the person feel good to do it. "

4.1.2. Procedure for question-negotiation in determining key intelligence needs

Proper and accurate determination of key intelligence needs precedes the determination of

information needs. The adoption of a competitive life cycle (e.g., as in Figure 2) that

specifically allows for questioning and question-negotiation in understanding the key

intelligence needs is thus an important prerequisite. Although there may be different

interpretations and representations of life cycles as explained by Michael (below),

organisations can design their own competitive intelligence life cycles to ensure rigours and

relevant collection of intelligence according to their needs, and to guide determination of

such needs.

It all starts with the competitive intelligence professional being able to ask the right

questions because senior management do not always know what they want so it

takes a skilled competitive intelligence professional to properly articulate the correct

intelligence needs. It is very important for the competitive intelligence professional to know the organization before conducting any competitive intelligence activity. (Abel)

From Abel's input it seems as if there might be a need for guidance in questioning techniques and strategies, i.e., the type of questions that can help or guide the end-user to recognise all needs for intelligence, and apart from determining key intelligence needs, to translate these as information needs. Kate explained:

I usually plan meetings with top senior managers and ask questions such:

- *What is your biggest problem at the moment?*
- *What is your biggest threat?*
- *Why do you consider that a problem or a threat?*

4.1.3 Translating key intelligence needs into information needs

From participants' input it seems as if key intelligence needs are broader and more general than the formulation of specific information needs required to collect data/intelligence. This is clear from the type of questions noted by Kate (section 4.1.2). None of the participants, however, explicitly elaborated on the process of interpreting expressions of (broad) key intelligence needs as finely formulated, specific information needs.

4.1.4. Translating information needs into search strategies

One would assume that people in the field of competitive intelligence would be fully *au fait* with what the concept and underlying processes entail, as well as with the importance of developing sound strategies to move from a solid understanding of key intelligence needs to information needs to strategies that can succeed in actually finding information to meet such information needs. In the Library and Information Science literature such strategies are referred to as search heuristics, search tactics and search strategies (Harter, 1986; Xie, 2008; Savolainen, 2017a), and even idea tactics (Bates, 2016). Collecting competitive intelligence requires more than just typing a few words into a computer; it requires specialised efforts and strategies. Steven expressed concern about ignorance that are sometimes shown about the complexities of translating information needs into strategies to retrieve information:

A lot of people think that competitive intelligence simply refers to information communication technology (ICT). They always compare competitive intelligence to

computer systems, and say words like 'well I have a computer, if I want information, I can simply just go pull it out of the computer'.

Most participants did not explicitly recognise the need for carefully planned strategies when interpreting key intelligence needs, information needs and ultimately search strategies. Even though Jane stressed the importance of good relationships with the senior management, this did not explicitly relate to translating intelligence needs to search strategies: "*The competitive intelligence professional should have a very good understanding of the organisation, the structure of the organisation and have a very good relationship with the senior management*".

4.1.5. Communication processes

Communication between end-users (i.e., senior managers requesting intelligence), proxy information seekers (competitive intelligence professionals) and sometimes other parties such as clients is very important. Communication as a process is very important in sharing needs for intelligence, i.e., expressing key intelligence needs, and was strongly emphasised by all participants. As one of the participants, Alena, stated: "*Communication is the key point in competitive intelligence, it is about talking to the decision makers and asking them about their expectations*". It is essential to note that there is a very close link between the determination of key intelligence needs and effective communication. This is stressed in quotes from four participants.

> *There is no such thing as over-communication. I always prefer to provide weekly reports. Weekly reports serve as a safeguard against executive's dissatisfaction as they prevent the project from drifting away from the intelligence needs*. (Brandon)

> *To ensure that you are still on track with the project, you should have interim briefing sessions in order to touch base on what you have done so fa*r. (Rebecca)

> *Much time is spent "conversing with the client" to ensure that this is correct and that common denominators are established, especially where there is a lot of technical language*. (Abel)

*It is essential to create a communication channel between the competitive
intelligence professional and the senior management, I prefer to keep
communication on a weekly interval*. (Kate)

4.1.6. The process of sense making

There was a fine line between the process of sense-making, conforming your own
knowledge base and dealing with ambiguity.

*…I will have to put everything you tell me to an analysis test to check if it fits in with
the bigger picture and to see if it makes sense.* (Bob)

*I can relate very much to this question from a broad perspective, I was once told by
my senior manager that I need certain information to be gathered for me, but it was
a very ambiguous request and I collected information based on what I was told or
rather what I thought I heard*. (Tyrone)

*What happens a lot in our organisation is that people ask senior management
intelligence questions in an effort to understand what management needs. When
they receive the answers, they form their own notion or take the information that
supports their own view.* (Elena)

4.1.7. Contextualisation of information needs against the organisational operation and strategies

Embedment of key intelligence and information needs in organisational strategies, and a
solid understanding of the organisation *per se* is very important. Both Jane and Bob stressed
this as a key issue in understanding key intelligence and information needs*.*

*I think at first lies the understanding or the organisation followed by the needs of the
organisation and that to me all comes down to communication*. (Jane)

*Usually a lack of information about the organisation causes poor expression of
information needs*. (Bob)

4.2. Factors affecting the determination of key intelligence and information needs

Fourteen factors that have an effect on the determination of key intelligence and information needs stood out.

4.2.1. Limited skills in sourcing intelligence needs

Competitive intelligence professionals should possess a certain set of skills which includes the skill to properly articulate the needs of the end-user as information needs. Michael stated that the ability to identify key intelligence is "*one of the primary skills of a competitive intelligence professional*". Six of 15 participants highlighted the lack of skills and training of individuals involved in the competitive intelligence process as one of the leading causes of competitive intelligence failures, and more specifically articulation of information needs of the end-user. (When a more substantial number of participants stated an issue, the number of participants are noted, however when only one or two participants mentioned it, the number is not noted.) For Cynthia the skills included theoretical understanding, but even more importantly, also the ability to translate information needs on a practical level in terms of strategies of actually seeking and retrieving information.

> *It is without any doubt that some competitive intelligence professionals have a strong theoretical background, but they lack the practical skills to undertake competitive intelligence projects. The failures and success of any competitive intelligence project is dependent on the skills of the competitive intelligence professionals.*

For Steven the lack of experience and training, specifically on translating information needs in terms of practical actions, were very important:

> *Because of lack of experience and sometimes training, younger (i.e., junior) competitive intelligence professionals do not always have the ability to conduct the process and functions effectively.*

4.2.2. Poor articulation and lack of precision

There is sometimes a practice between the competitive intelligence professionals and senior management to intentionally provide insufficient information to competitive intelligence professionals, and to not give enough detail. This complicates the articulation of key intelligence and information needs. The problem with the identification and expression of

information needs stems from the 'human problem' and abilities and not only the competitive intelligence process and efforts. It stems from how management expresses their needs for intelligence – how it is verbalised and articulated. Trust is also very important in sharing information on needs.

> *The other problem is that people have difficulty in telling you what their true information needs are due to the issue of trust; most people still have that thing of 'if I tell you what, then you will steal my idea', therefore the sharing of information is still not a common practice.* (Kate)

Although this is important in competitive intelligence and although participants did mention that competitive intelligence professionals should articulate the information needs in terms of search strategies ("Y*ou should have a method in which you can unpack what the top management needs…*" [Joseph]), they did not elaborate on problems caused by poor articulation and lack of precision.

4.2.3. Fragmented sharing of information needs

Amongst some of the competitive intelligence professionals there existed a practice of purposefully fragmenting the key intelligence need(s). One participant, Clint, specifically mentioned that the competitive intelligence team should be tasked in specifics and the intelligence need should be fragmented. Although done for valid reasons this practice often leads to partial understanding of the actual needs.

> *When I task my team, I am very specific in what I tell each individual. I do not get my entire team together and give them the full picture, because they will already know what the answer is. I have been working in the field for a very long time, I already know what we are looking for, but the younger competitive intelligence professionals do not have the expertise that I have, and they cannot see the full picture*. (Clint)

From Clint's input it is also clear that the information seeking and the collection of intelligence are often based on team efforts. It is thus not just about the individual who acts as the proxy information seeker, but rather about a collaborative understanding of information needs between the end-user and a team of competitive intelligence professionals acting as proxy information seekers ("*When I task my team, I am very specific*

in what I tell each individual. I do not get my entire team together and give them the full picture" [Clint]).

4.2.4. Fluctuation of intelligence needs

Organisations exist and operate in unstable environments; it is therefore important for the competitive intelligence professional to monitor and to ensure that the competitive intelligence process is still in line with the initial key intelligence need(s). Due to the fluctuation of intelligence needs there are certain cases in which new information and new processes are coming into place and some professionals become more reactive than proactive, which is very important, because competitive intelligence professionals always need to be proactive:

> *A lot of individuals collect data without clarifying with management if the data they are collecting is actually what is required, and if they are still on track with the current project.* (John)

John raised the importance of information needs that may change during the process of intelligence collection; thus even if recognised, expressed and appropriately articulated, information needs may expand, become more specific or may take a different direction. The context and situation in which a proxy information seeker finds him or herself fluctuates; there may be progression in this context that can cause changes in information needs.

4.2.5. Verification of understanding of intelligence needs

The verification of understanding of intelligence needs at the start as well as during the process of data collection is very important. Processes and schedules for this should be in place. When conducting intelligence interviews, competitive intelligence professionals seldom consult with the end-user to verify any ambiguous information or misunderstanding.

> *In order to keep the intelligence user involved we have regular communication schedules and we constantly make presentations to the intelligence user in order to ensure we are still on track and answering the initial intelligence needs.* (Alice)

> *The problem with humans is that we never go back and clarify what we initially heard and sometimes when the sender checks with the receiver and how they interpreted*

the message, they get angry and they say 'how you dare check on me, I am not a baby'. (Abel)

From the words of Abel it is clear that there are at least two issues about ensuring correct understanding of information needs that cause problems: (a) CI professionals, and perhaps even the end-users do not always realise the need to double check (verify) that the information needs were correctly understood (Harter [1986], e.g., elaborates on semantic, syntax and technical problems that can occur in the understanding of information needs); (b) frustrations and misconceptions about the process of verification and the important role verification plays in successful information seeking are not well addressed.

4.2.6. Unpacking of intelligence needs

Unpacking of intelligence needs into finer detail such as acknowledging the intended audience or target group and purpose for collecting intelligence should be done according to stringent methods to support senior management with the articulation of intelligence needs. Although very important, participants did not say much about the need to unpack intelligence needs. Cynthia was an exception:

> *You should have a method in which you can unpack what the top management needs and if you have that as a stringent process.*

4.2.7. Determining criteria in which information needs should be embedded

The competitive intelligence professional should understand and know the end user's (e.g., senior manager's) preferences. This relates to the need for guidelines and protocols mentioned in section 4.1.1 that can guide questions to determine such preferences, as well as 4.2.6.

> *It really comes down to understanding what the end user needs are and working around them to deliver an intelligence product, so you cannot go there and say, "well this is what we can offer", you must go there and ask what is that you need? What are you going to use it for? Who is your audience and what they need the intelligence for, then you have to build your deliverables around that.* (Joseph)

Joseph highlighted the important issue that competitive intelligence officers may work for end-users who present different target groups. In competitive intelligence, an information

need is thus more than just a topical expression, e.g., for factual information or trends. It is rather strongly embedded in various criteria such as the target group for whom intelligence is collected, or the purpose for collecting the intelligence.

4.2.8. Background knowledge and a good understanding of the organisation

It is important for competitive intelligence professionals to study any project well in advance, this will enable them to know which questions to ask, and to also ensure that they have solid background knowledge of the organisation. A lack of understanding of the organisation's mission and strategy often causes poor articulation of intelligence needs, since the individual does not know exactly what to ask from the end-user. Four participants mentioned that it is important for competitive intelligence professionals to have a deep understanding of the organisation, its objectives and strategies.

> *I think at first lies the understanding of the organisation followed by the needs of the organisation and that to me all comes down to communication.* (Jane)

> *…Who is your audience and what they need the intelligence for, then you have to build your deliverables around that, so there are standard ways of identifying intelligence needs.* (Elena)

Jane also stressed the importance of a good relationship with end-users to ensure that essential issues relevant to the need for intelligence are revealed: "*… and have good relations with the senior management*". The importance of good relations in understanding the context of information needs, it is the organisation, was also noted by Cynthia:

> *The competitive intelligence professional must have a very good understanding of the organisation, be well informed about the strategy of the business and have good relations with the senior management who can then be able to translate the intelligence needs to the competitive intelligence professional.* (Cynthia)

4.2.9. Tools for collecting and assessing intelligence (e.g., matrixes, measurement tools)

Competitive intelligence professionals should have a good understanding of the organisation and surrounding environment, including the organisational strategy which can serve as a reference for clarification, and to ensure that needs are captured by means of

specialised competitive intelligence tools such as matrixes and measuring tools to assess the intelligence collected. What is important is that the competitive intelligence professional's (i.e., the proxy information seeker's) understanding of the key intelligence and information needs and how these needs are situated in the organisation, is sound enough to support the development and use of tools for collecting and assessing intelligence.

> *Basically if the competitive intelligence professional has a good understanding of the business, and if their measurements and matrix are correctly specified, the competitive intelligence professional can always go back and clarify if they suspect that something is not correct.* (Jane)

Steven noted the importance of templates as tools: "*The second method that I actually prefer, is to use a very specific template, which I call a briefing template. The purpose of a briefing template is to ask questions such as 'Why do you need this intelligence?'; 'Which countries should we cover?'; 'Which competitors should we look at'; 'Which format do you want the intelligence product to be delivered in'?; 'What is the deadline'? and so on.*"

This also relates to the need for ongoing verification of key intelligence and information needs in case of fluctuation.

4.2.10. Inadequate question-negotiation techniques

During intelligence interviews certain information may be implied and not stated explicitly. It is therefore important for competitive intelligence professionals to ask end-users questions that will reveal the true key intelligence and information needs and search strategies that will be required. Four participants highlighted the importance of asking the end-user the correct questions concerning their intelligence needs.

> *You must have a very detailed needs analysis with senior management and try to figure out what the organisation needs. I think if you do that in a more stringent process, then you are more likely not to fail. But it all comes down to understanding what the true needs of the senior manager are and delivering the intelligence product around those needs. You cannot go there and say, 'Oh well this is what we can offer'. You have to go there and ask very specific questions such as 'What is it that you need?', 'What do you need this information for'? 'How do you want the*

deliverables to be packaged'?' 'Who in the organisation will be using this intelligence, and what will they be using it for?' (Steven)

When meeting with the intelligence user, the main thing to keep in mind is addressing what their problem is and how the competitive intelligence professional can solve it. Most competitive intelligence professionals make the mistake of giving senior management what they want, and not what they need. (Brandon)

So it's really a matter of matching the executive's needs with the intelligence needs. (Cynthia)

I usually prompt several questions to senior management in order to understand their true need. (Brandon)

I usually plan meetings with top senior managers and ask questions such as:

- *What is your biggest problem at the moment?*
- *What is your biggest threat?*
- *Why do you consider that a problem or a threat?* (Kate)

The reluctance of people (end-users) to share their "true needs" for lack of trust, as well as other reasons were also noted: "*The other problem is that people have difficulty in telling you what their true information needs are due to the issue of trust; most people still have that thing of 'if I tell you what, then you will steal my idea', therefore the sharing of information is still not a common practice.*" (Steven)

It really comes down to understanding what the end user needs are and working around them to deliver an intelligence product. (Joseph)

4.2.11. Cognitive and other human problems

Humans perceive and process information differently; most competitive intelligence professionals admitted the issue of omitting important information by forming their own notion during interviews and working according to their own frame of reference, and only accept information that confirms their current knowledge base and point of view. Three participants specifically mentioned that often competitive intelligence professionals only

listen to information that confirms their knowledge base and understanding. There is also a reluctance to admit a lack of understanding.

> *What happens a lot in our organisation is that people ask senior management intelligence questions in effort to understand what management needs. When they receive the answers, they form their own notion or take the information that supports their own view.* (Elena)

For Elena, the internal, individual processing of requests for information and the problems this may cause stood out. It is partially about cognitive abilities in processing information needs, but also about the characteristic in human nature to discard information that does not fit a prior frame of reference. Apart from competitive intelligence professionals interpreting information needs in terms of their own frame of reference or worldview, Anna also raised the problem that even if contextualising information for a request for intelligence is provided, the competitive intelligence professional may discarded it.

> *At times competitive intelligence professionals just want to confirm with their own knowledge base and understanding and sometimes they miss out because you give them more than what they know but they ignore it because they only want to support their views.* (Anna)

> *If uncertain people might duck and dive to avoid embarrassment.* (Alice)

4.2.12. Lack of holistic view

In some instances, during intelligence interviews, competitive intelligence professionals do not consider the entire picture and tend to miss out on some important information.

> *They actually do not take the entire picture… Sometimes they miss out because senior management gives them more than their understanding.* (Elena)

Elena highlights the importance of missing cues on the information required, and the problem of not attempting to contextualise information needs in a more holistic manner.

> *Sometimes people ask intelligence questions, and then from what they are told they only select what they already know; they do not consider the whole picture.* (Anna)

Although the need to ask questions and to verify if interpretations are correct has been noted (see section 4.2.5), this, if we consider Anna's input, will make little difference if the answers are not fully and appropriately processed.

4.2.13. Working from an individual term of reference

Some competitive intelligence professionals do not adapt their frame of thinking and use of competitive intelligence tools to suit the determination of key intelligence needs.

> *"What happens a lot in our organisation is that people ask senior management intelligence questions in an effort to understand what management needs. When they receive the answers, they form their own notion or take the information that supports their own view. They actually do not take the entire picture"*. (Elena)

The idiosyncratic processing of information needs (i.e., a characteristic from human nature) can lead to competitive intelligence failure, even if solutions are found for the other causes of competitive intelligence.

4.2.14. Appropriate standards and procedure in determining key intelligence needs

The appropriate standards and procedures must be tailored according to the context in which intelligence needs to be collected.

> *I for one do not agree with the claim that there is no proper standard way of articulating the intelligence needs of senior management. For the key intelligence topics you can actually develop your own cycle as to how to determine the intelligence needs, to determine where you start, what to do in between and where do you end.* (Michael)

According to Clint it "*… tends to take some considerable time to … reach a point of a well-established FRD [*Functional Requirements Document*] from their information needs. Due to the FRDs being such a crucial stage in any project, the importance of 'getting this right' cannot be underestimated*".

5. Discussion

"Key intelligence needs" is the term that stems from competitive intelligence and "information needs" is the term used in the literature of library science, information science and information behaviour. Although the competitive intelligence literature occasionally reports on both terms, the link between the two has not been successfully clarified. We acknowledge that although stemming from different literatures, key intelligence needs are broader, relating to needs for intelligence (data, information) regarding threats, opportunities and trends as needed by an organisation (i.e., the needs of an organisation). To actually collect intelligence, key intelligence needs must be translated as more specific and detailed information needs that can guide information seeking and search strategies.

Although participants confirmed that the determination of key intelligence and information needs plays a very important part in causes of competitive intelligence failures, it should not be seen in isolation from other phases such as data collection, data analysis and intelligence reporting which also cause competitive intelligence failure (Maungwa, 2017). The best thing when collecting data or intelligence is to be exactly sure what is required. It is the responsibility of the end-user to inform the competitive intelligence professionals about the key intelligence needed, but there is also a responsibility on the competitive intelligence professionals' side to ask the correct questions. It is important for competitive intelligence professionals to have detailed knowledge of the organisation, which enable them to know which questions to ask and how to interpret expressions of key intelligence needs, that can be further refined as specific information needs.

The identification, expression and articulation of key intelligence and information needs are clearly major problems in competitive intelligence failure. We found that the problems that occur can be categorised as: (a) processes and procedures impacting on the awareness and understanding of key intelligence and information needs and (b) factors affecting the determination of key intelligence and information needs and translation into search strategies. The seven processes and procedures include: absence of applying guidelines and protocols to guide procedures; procedures for question-negotiation in determining key intelligence needs; translation of key intelligence needs into information needs; translation of information needs into search strategies; communication processes; the process of sense making and contextualisation of information needs against the organisational operation and strategies. The fourteen factors influencing problems with information needs include:

limited skills in sourcing intelligence needs; poor articulation and lack of precision; fragmented sharing of information needs; fluctuation of intelligence needs; verification of understanding of intelligence needs; unpacking intelligence needs; determining criteria in which information needs should be embedded; background knowledge and a good understanding of the organisation; tools for collecting and assessing intelligence (e.g., matrixes, measurement tools); question-negotiation techniques; cognitive and other human problems; lack of a holistic view; working from an individual term of reference; appropriate standards and procedure to determine key intelligence needs.

When considered from the extensive body of literature on information behaviour, it is clear that more rigour can be added to how competitive intelligence professionals can address the problems of poor identification and articulation of key intelligence and information needs, for example, considering the guidelines that have been developed for reference interviews conducted between librarians and their patrons (Peterson, 1997; Straw, 2000). The use of interview standards should furthermore be embedded in competitive intelligence cycles such as the cycle in Figure 1.

The work of Taylor (1968) on question-negotiation during reference interviews, more recent input by Coonin and Levine (2013) and Shenton's (2007) work on the Johari window can address problems with the identification and expression of key intelligence needs. Taylor (1968) distinguishes four levels of question negotiation: visceral need (vague awareness), conscious need (a clearer awareness of an information need, but still problems in expressing it clearly), then formalised information needs which is often lacking in competitive intelligence where trust seems to be an issue (section 4.2.3), and finally a compromised need (interpreted and articulated according to what an information resource may offer. Many authors in information behaviour and library and information science have cited Taylor (1968) in an effort to deepen understanding of the problems underlying the identification and expression of information needs (Case and Given, 2016). Textbooks on reference interviews and communication in reference interviews highlight complexities in negotiating what information is needed. These are resources to turn to in finding solutions for competitive intelligence failures.

Furthermore the problems with ambiguity and cognitive problems experienced during the articulation of information needs can be addressed by looking at the work of Ingwersen and Järvelin (2005) as well as Dervin (1999) on sense-making. Early work on thesauri and controlled vocabulary (Lancaster, 1999) and more recently taxonomies and ontologies can deepen insight on the choice of vocabulary when articulating key intelligence and information needs (Cerulo and Canfora, 2004). Whichever research results or guidelines are consulted for solutions, it must bear in mind contemporary work on information needs such as Cole (2010, 2012), and more specifically the importance of theories to explore the identification of information needs as noted by Savolainen (2017a,b). In the literature of Library and Information Science, the focus is normally on how information needs are expressed in terms of search terms (i.e., search vocabulary), and the combination of search terms (Ingwersen and Järvelin, 2005; Bates, 2016). There is further focus on depth of the complexities of articulation, vocabulary, semantics and syntax as discussed by Lancaster (1991), Harter (1986) and Soergel (1985); such complexities did not feature in the input of participants.

Although participants did not explicitly refer to the use of sophisticated information retrieval techniques as explained by Ingwersen and Järvelin (2005) or planned situational interactive information retrieval as portrayed by Xie (cited in Wang, 2011) or as by Carr (2003), there was an underlying awareness of the importance to translate the information needs expressed by end-users as search strategies.

Overall the fields of information behaviour and library and information science, specifically reference interviews and information retrieval can make valuable contributions in addressing competitive intelligence failures that can be attributed to problems with the identification and articulation of key intelligence and information needs.

6.   Recommendations

A few recommendations are offered for further exploration:

(1) *Application of rigorous methods in the identification and articulation of information needs in competitive intelligence*. Although there are formal end-user intelligence needs identification processes reported in the literature (e.g., Muller, 2004) that can be applied, it is however recognised that competitive intelligence professionals do not

always adhere to these standards or methods in the identification, expression and articulation of information needs, and that existing methods might not fully address problems. Stringent methods should be explored for intelligence interviews in order to properly identify and articulate true key intelligence needs of end-users (Herring, 1999; Muller, 2004) that can be translated as information needs and search strategies. Such methods must be informed by knowledge of information behaviour and library reference work.

(2) *Exploring the concept and process of proxy information seeking.* The practice of searching for information on behalf of an end-user leaves many openings for misconception, and deliberate partial sharing of the required information. Proxy information seeking has an influence on the articulation of information needs (Ellis et al., 2002) that needs to be investigated and fully explored.

(3) *Competitive intelligence educators and trainers.* The awareness of reasons for competitive intelligence failures and more especially within the articulation, expression and identification of key intelligence and information needs should influence the training of competitive intelligence professionals. The value to be gained from information behaviour and library reference work, especially need to be acknowledged in training.

7.   Conclusion

To ensure strategically focused and relevant intelligence and information collection and gathering it is required that competitive intelligence professionals appropriately determine and articulate end-users' information needs, stemming from key intelligence needs. Such needs must be contextualised against organisational operations and strategies. Various problems are experienced during intelligence interviews and specifically the determination, sharing and articulation of intelligence and information needs. These can be contributed to processes and factors discussed in this paper. Ultimately competitive intelligence failures follow. Various processes and factors impact on awareness of key intelligence and information needs first on the end-user's side, and then on the side of the proxy information seeker (the competitive intelligence professional). Although participants noted these, they require a deeper exposure and understanding of how these can be addressed from the knowledge and theories of information behaviour and reference work (Library Science and

Information Science). These fields offer rich experiences, insight and guidelines that need to be explored by competitive intelligence professionals. In addition to the problematic processes and influencing factors reported in this papers, two prominent issues stood out for further investigation: (1) proxy information seeking as a process, and (2) the development of rigorous methods (embedded in the theories of information behaviour and library reference work) to identify and articulate key intelligence and information needs in the context of competitive intelligence. Considering the findings reported in this paper, there is considerable scope for further research from the intersection of competitive intelligence and information behaviour, and to embark on more research using an information behaviour lens.

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