

Competitive Intelligence Behaviour and Attitude Antecedents in French Small and Medium Sized Enterprises in a Funded Intervention Environment

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Abstract

This thesis examines the Competitive Intelligence behaviour and attitude antecedents of SME decision-makers in a funded environment in France. As a leader in CI national policy programmes, France draws attention to the imbalance between European nations on the tangible support afforded to SME communities. This two stage sequential mixed method study within the pragmatic paradigm evaluates Competitive Intelligence as a public policy to enhance SME sustainable competitiveness. Semi-structured interviews were undertaken with the directors of 15 Competitive Intelligence programmes at French Chambers of Commerce and Industry. Guided by the structure and Theory of Planned Behaviour, the findings from this qualitative phase were then used to develop a research instrument to test research questions that relate to behaviours, attitudes, background factors, choice of CI advisor, terminology, and perceived constraints. In this second stage data was obtained via questionnaire from 176 SME decision makers in the Rhône-Alpes and Ile de France regions, for the two sectors of Automobile and Telecoms.

The findings show that tangible results have been achieved despite resistance from small businesses in regard to their Competitive Intelligence practices. The thesis uncovers innovative practices to change SME awareness, attitude, and practices of Competitive Intelligence. Evidence of significant relationships between terminology usage, advisor choice, and SME decision-maker attitudes towards CI practices provides insight for future behaviour intervention programmes and future research.

The contribution of this study of SME Competitive Intelligence practices is a five stage Competitive Intelligence typology overlaid by corresponding CI manifestations. The findings will be of interest to future initiatives by public/private partnerships in both CI programme design and implementation. The originality of this study is the investigation of SME CI behaviour and attitude antecedents in a funded environment. The findings from this study will be of interest to SME managers, current and future government CI support programmes, and the academic community.

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CHAPTER 1: Introduction

1.1 Introduction

How governments, enterprises, and society manage and share intelligence is a question all countries have to increasingly answer. France was the first country in the world to explore this question publicly and intensively (Dedijer, 1994). Two fundamental questions were raised by Martre *et al* (1994) cited by Dedijer (1994). First, how can governments intervene without distorting competition? Second, would the pro-active implementation of government assistance in one country instigate other countries to follow? The aim of this study is to evaluate Competitive Intelligence as a public policy in France to support SME growth and performance. The larger questions posed by Martre *et al* (1994) are also discussed. Whereas Canada (Bergeron, 2000b; Calof & Brouard, 2004) Belgium (Larivet & Brouard, 2012) and Switzerland (Bègin *et al*, 2007) have all experimented with Competitive Intelligence as a public policy for SME support, it is France that was the early mover (Dedijer, 1994) and that has invested the most (Bergeron, 2000a). Since the early days of reflection on how governments, enterprises, and society can work together, France has implemented CI programmes throughout its regions specifically to assist SMEs (Clerc, 2004; Moinet, 2010; Smith *et al*, 2010; Larivet & Brouard, 2012).

Competitive Intelligence (CI) is an evolving business process which fundamentally integrates analysis of the business environment, including competitors, into decision-making to improve business performance (Fleisher & Wright, 2009). It is a legal activity which uses publicly available information (Prescott, 2001; Wright *et al*, 2002). Whereas Market Research is customer centric (West, 1999) CI is more holistic, integrating everyone inside a company (Calof & Wright, 2008) and has become one of the many terms used to describe information management. Although the exact interface between CI and Knowledge Management has not been distilled (Dufour, 2010), CI is considered a contributor to Knowledge Management (Drew, 1999). French CI concepts and language issues are discussed in Chapters 2 and 3.

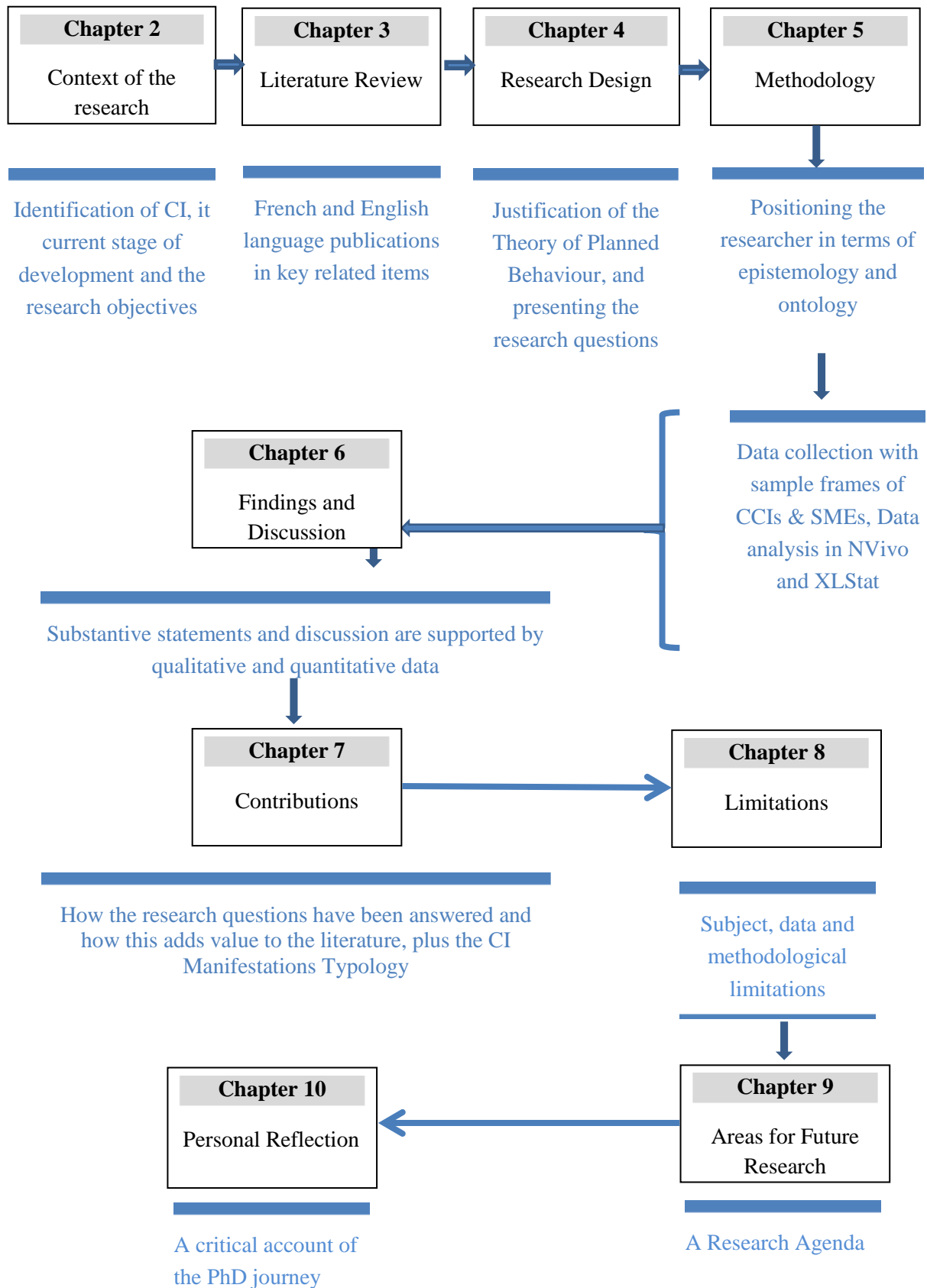
The specific research objectives in this study are to describe the on-going public CI programmes in France and to examine the SME CI behaviours, attitudes and CI manifestations in this funded environment. Whereas CI research has investigated

government CI programmes (Bergeron, 2000a; Larivet & Brouard, 2012) and CI attitude antecedents (Qiu, 2008), no research has specifically addressed SME attitude and behaviour antecedents in a funded environment in France. Additionally, this thesis unlocks a large part of French thinking and literature on CI concepts that has been largely inaccessible due to language barriers (Wright, 2011).

Porter (1990) considered that only enterprises can create competitive industries. Governments have a role in fostering competitive industries but it is an indirect one. Territorial Intelligence in France echoes the philosophy of Porter (1990), considering itself as an instigator and facilitator which creates an environment where companies can develop competitive advantages (Pautrat & Delbecque, 2009). Whereas much of the research on CI has focused on the internal processes within companies, this research focuses on SME decision-makers and their relations with an external funded environment. The funded environment refers to the presence of publicly funded programmes to assist enterprises with their CI needs and practices. This is one example where French thinking on CI differs markedly from the USA and UK, where CI is a company based private sector activity (Bergeron, 2000a). Although the UK has implemented information support functions such as Business Links (Bergeron, 2000a), this is not an explicit behaviour change intervention comparable to the programmes in France.

The audiences that will profit from this study include a wide range of stakeholders. At a macro, national level, the fundamental questions posed by Martre *et al* (1994) about the relationships between governments, intelligence, and society can be re-examined. European Union, national, and regional levels all have unique different visions for CI policy interventions. In the UK government interventions for CI are modest at best (Bergeron, 2000a; Wright *et al*, 2002). Nevertheless, the UK government has produced white papers on '*building the knowledge economy*' (Bergeron, 2000a, pp 267). At the policy level, the current and future CI programme leaders may learn a lot from the innovative practices reported in this thesis, whether they are in France or elsewhere. Hopefully SMEs themselves can reflect more on their CI practices, their use of terminology, and their choice of CI advisors. Researchers too are an audience for this research, especially those who examine SME performance within a public policy context. Figure 1.1 overleaf summarises the direction and flow of the thesis structure. There are 10 Chapters in total plus the references and appendices. The diagram is followed by commentary on the Chapter contents and how the thesis is structured.

Figure 1.1 An Overview of Direction and Flow in Thesis Structure



The French State system, although not the focus of this study is presented in Chapter 2 as it is the essential instigator and arbitrator of French CI public policy. A particular focus on the Chambers of Commerce and Industry (CCI) highlights why they have become the essential vector of CI policy implementation for SMEs. Chapter 2 lays out the research objectives of the thesis, which are revisited in Chapter 7 to present the contributions to knowledge. The French term for CI is discussed in Chapter 3 and the lexicon equivalence issues are addressed, in as much as they can be, stressing the importance of terminology for this topic. The related issue of the scope of French CI concepts leads to a critical evaluation of French CI models and CI typologies. Theoretical approaches to CI, whether from France or elsewhere, highlight the identified but largely under-investigated roles of attitudes and awareness as CI influence drivers. Chapter 4 presents the Theory of Planned Behaviour. This theory, which underpins the thesis, leads into research design and research questions, which are informed from the research objectives. The five themes which constitute the framework for the quantitative analysis were primarily developed through the use of NVivo. This process is also explained and illustrated in Chapter 4.

The pragmatist paradigm with a sequential mixed method approach is defended in Chapter 5. This includes a self-evaluation in terms of a continuum of quantitative and qualitative approaches that will vary in intensity due to fundamental beliefs, research objectives, and sampling. Chapter 5 also draws out and debates the use of an abductive process of data collection and analysis. Chapter 6 presents the results of both qualitative and quantitative data sets, presented in five themes which are modelled on the Theory of Planned Behaviour. This underlying theory in the research design also helps to interpret the data. The contributions of the thesis, presented in Chapter 7, shows how research questions have been answered and how this adds value to the literature. This section comprises a new typology, building on prior work which proposes 5 SME types, labelled as bird analogies, in terms of CI manifestations. This is presented as a model to assist CI public policy programmes as well as to direct future research.

The limitations of the thesis are discussed in Chapter 8, which is followed by seven research areas presented as research agendas in Chapter 9. The final Chapter discusses personal reflection through a chronological account of the PhD process enriched by the benefit of hindsight. Additionally, lessons learned, skills learned, and suggestions for future PhD students are discussed. Following the section on references are eight appendices. Appendix 1 consists of a French government CI guide preamble and Appendix

2 illustrates a map showing locations of the CCI interviewed. The research instruments in French and English, the code book and a node summary report constitute Appendices 3, 4, 5, 6, and 7 consecutively. A report on Cumberland Lodge, a national PhD conference for which the PhD student was selected is presented in Appendix 8.

CHAPTER 2: Context of the Research and Research Objectives

2.1 Introduction

The scope of information collection, analysis and dissemination on competitors and the competitive environment continues to evolve, taking on new terms and new technologies. It has become a body of knowledge (Fleisher *et al*, 2007; Calof & Wright, 2008), a public policy (Martre *et al*, 1994; Carayon, 2003; Dou, 2004; Smith & Kossou, 2008; Smith *et al*, 2010), a precursor to decision making (Salles, 2006; Fleisher & Bensoussan, 2007; Onifade, 2007; Qiu, 2008; Fleisher & Wright, 2009), a professional community (Qiu, 2008; Brody, 2008) and overall a means to enhance competitiveness. The notion of Competitive Intelligence (CI) is multidisciplinary (Bulinge, 2002; Calof & Wright, 2008; Larivet, 2009; Wright, 2011) but the human decision making outcome is always present. In more recent years it has been presented as an attitude towards Organisational Learning and information sharing (Dou, 2004; Wright & Calof, 2006; Wright *et al*, 2009, Wright, 2011). As with Market Research and Knowledge Management, CI is a support function to enhance decision making for a given entity, normally in a competitive market.

2.2 The Origins of Competitive Intelligence

A synthesis of CI literature identifies three major influencers which have historically shaped the evolution of CI concepts. The military heritage reaches back the farthest, with references to 5000 years of Chinese history (Qingjiu & Prescott, 2000), with military intelligence and strategy quoted in reference to numerous historical events (Calof & Wright, 2008). This line of thinking presupposes that military intelligence is transposed into a modern economic intelligence context (Goria, 2006). The economic heritage itself is commonly referenced to Luhn (1958) who spoke of Business Intelligence as a communication system to facilitate business (cited in Bulinge, 2002; Larivet, 2002; Goria, 2006). Wilensky (1967) proposed 'Organisational Intelligence', albeit with a Knowledge

Management orientation. The third heritage can be considered one of ethics and technology. A study by Sammon *et al* (1984) found that most American companies considered Competitive Intelligence as unethical and illegal practices. West (1999) proposed that fear of CI as unethical was inhibiting its growth in Europe. The foundation of the Society of Competitive Intelligence Professionals (SCIP) in 1986 in the United States was an important step in professionalising the concept and providing a code of conduct. In France, the governmental report by Martre *et al* (1994) gave a definition and respectability to the CI practice in a French context. The emergence of the term *environmental scanning* by Albaum (1962), the use of the word *system*, even earlier by Luhn (1958), and *radar*, by Meyer (1991) emphasise the early orientation towards technology.

2.3 Competitive Intelligence in France

The emergence of CI in France has been influenced by the USA, notably the work by Porter (1980) in the 1980s (Goria, 2006; Jakobiak, 2006). Despite this widely accepted importation, a unique French school of thought has emerged (Martre *et al*, 1994; Carayon, 2003; Jakobiak, 2006; Smith & Kossou, 2008; Larivet, 2009; Moinet, 2010). France was the first country in the world to introspectively, yet publicly examine the relationship between government, intelligence and society (Dedijer, 1994). The commonly accepted translation of *Intelligence Economique* (Competitive Intelligence) is only an approximate, if overlapping, conceptual equivalence (Dou 2004; Larivet 2006; Salles 2006).

Intelligence Economique is considered a larger concept in France (Baumard 1991; Bloch, 1996; Jakobiak, 2006) which goes beyond the Environmental Scanning and CI widely accepted in the English-speaking world. Favier (1998) proposed that CI emerged in France in the 1990's as *technology scanning* and *strategic monitoring* merged. Certainly the government-sponsored reports by Martre *et al* (1994) and later by Carayon (2003) solidified CI as a public policy (Goria, 2006; Jakobiak, 2006; Francois, 2008; Moinet, 2010).

The government report (Martre *et al*, 1994), authored by the senator Henri Martre, Philippe Clerc, Head of the ACFCI (Assembly of the French Chambers of Commerce and Industry), and Christian Harbulot, Director of the School of Economic Warfare, gave the following

definition of CI (cited by Moinet, 2010, pp 27): “*Competitive Intelligence can be defined as the totality of actions coordinating research, its treatment, distribution and exploitation for economic actors. These diverse actions are conducted legally with all necessary guarantees of protection to preserve the assets of enterprises, while respecting the best conditions of quality, time, and costs*”. It has remained a key reference point of CI emergence in France (Dou, 2006; Jakobiak, 2006; Gorla, 2006; Smith & Kossou, 2008). A governmental report (Carayon, 2003), ordered by then Prime Minister Raffarin, also addressed the national competitiveness of France. It included European-level comparisons of how national governments manage CI. The report provided 38 proposals which have laid the bedrock for CI in France as a public policy (Bruté de Rémur, 2006; Afolabi, 2007; Smith & Kossou, 2008).

Prescott (1995) identified four phases of evolution for CI which overlay the schema proposed by Favier (1998) and up-dated here in Table 2.1, presented on the next page. Phase one, named ‘Competitive Data Gathering’, spans the 1960s and 1970s. The second phase, ‘Industry Competitor Analysis’ is associated with Porter (1980). ‘Competitive Intelligence for Decision Making’ is the third phase and Prescott added a fourth: ‘Competitive Intelligence as a Core Capability’. This last of four phases accentuates the human and behavioural aspects that continue in CI today.

In the UK CI has emerged from the marketing field and is firmly anchored in the private sector of business and markets (Wright *et al*, 2004; Dou, 2006). Wright *et al* (2004) spoke of the chasm between the UK government and business in general and the minimalist role of the state in terms of CI. In France, the opposite is true. The impetus of CI has come from the government in terms of reports (Martre *et al*, 1994; Carayon, 2003), the nomination of an inter-governmental representative in 2003 and 2009, and the overall involvement of the state at every level. In France, CI is a public policy (Dou, 2004; Jakobiak, 2006; Francois, 2008). Table 2.1 illustrates how CI concepts have emerged in the USA, France, and Europe.

Olivier Buquen was nominated as Inter-ministerial CI Delegate in 2009 (Moinet, 2010). His role is to coordinate between the numerous players at all levels of government, whether they are Ministries, the Prime Minister or enterprise support programmes implemented

Table 2.1 The Emergence of CI in USA, France, and Europe (adapted from Favier, 1998)

CI Phases (Prescott, 1995)	USA	France	Europe
<p>Phase 1:</p> <p>Competitive Data Gathering</p>	<p>Planning Corporate Planning 1950s</p> <p>Strategic Planning 1960s</p> <p>Environmental Scanning</p> <p>Competitive Intelligence</p>	<p>Scientific and Technical Information</p> <p>Strategic Analysis</p> <p>1970s</p> <p>1971: BNIST National Bureau of Scientific Information</p> <p>Strategy and Competition (Porter, 1979)</p> <p>1980s</p> <p>Technology Watch</p> <p>1990s</p> <p>Strategic Monitoring</p> <p>Competitive Intelligence</p> <p>1st. Government Report (Martre <i>et al</i>, 1994) Managerial Definition of EI (Larivet, 2002) 2nd Government Report (Carayon, 2003) 2003: Nomination of Alain Julliet as ‘High Representative of Economic Intelligence’. 2005: Minister of Interior initiates a public policy of regional territorial intelligence 2009: Nomination of Olivier Buquen as CI delegate</p>	<p>1960s Finnish firms using ‘information services’ (Hirvensalo, 2004)</p> <p>1973: Steven Dedijer publishes paper on Global Social Intelligence (Hedin, 2004)</p> <p>1992 UK chapter of SCIP Europe established (Wright <i>et al</i>, 2004)</p> <p>2002: (DCIF) Deutsche Competitive Intelligence Forum Founded in Germany (Michaeli, 2004)</p> <p>CI and Insight Management (Wright, 2011)</p>
<p>Phase 2:</p> <p>Industry Competitor Analysis</p>	<p>SCIP (Society of Competitive Intelligence Professionals) foundation 1986</p>		
<p>Phase 3:</p> <p>Competitive Intelligence for Decision Making</p>	<p>SCIP name change, 2010 (<i>Strategic</i> Competitive Intelligence Professionals)</p>		
<p>Phase 4:</p> <p>Competitive Intelligence as a Core Capability</p>			

through Chambers of Commerce and Industry (CCIs). In 2005 the then Minister of the Interior, Nicolas Sarkozy, later to be President, sent a letter to the regional *préfets* (prefects) instructing them to set up public policies of CI (Moinet, 2008). Prefects play a critical role in French government, are nominated by the Minister of the Interior, and hold significant authority in regional administration. The uniqueness of France is this public policy of CI, emerging in the 1990s, continuing today, manifesting itself notably as Regional Intelligence, with the CCI as a central agency (Clerc, 2009; Smith *et al*, 2010; Moinet, 2010).

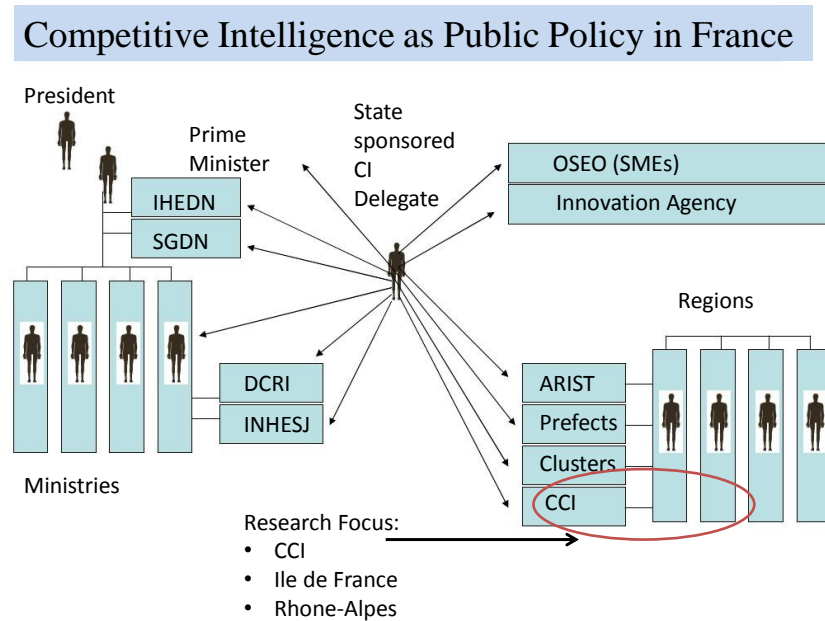
Porter (1993) emphasised that the competitive advantage of nations begins at the local level. As know-how, technology, firms, and suppliers all reach critical mass, regions can potentially develop superior capabilities. Building on this logic of clusters, France has anchored its Regional Intelligence in managerial science (Francois, 2008), of which CI programmes are an integral part (Moinet, 2008; Smith *et al*, 2010). Table 2.2 translates and describes the key French organisations that constitute the French CI State system. As can be seen, the scope of this goes beyond small business support to include national defence, security, and technology. The CI delegate has a coordinating role between the different entities.

Table 2.2 Key Organisations in the French CI State System

French Acronym	Translation/Description
IHEDN	Institute of Higher Studies for National Defence
SGDSN	Institute of Higher Studies for National Security
ARIST	Regional Agency of Strategic and Technological Information
DCRI	Central Direction of Interior Intelligence
INHESJ	High Institute of National Security and Justice
OSEO	A publicly funded support agency for SMEs
CI Delegate	Alain Juillet (2003 to 2008) and Oliver Buquen (2009 onwards)

Figure 2.1 illustrates the central role of the French CI Delegate in relation to the above named entities.

Figure 2.1 The Role of the CI Delegate in the French CI State System



This State inspired approach contrasts significantly with the UK where few exchanges exist between the government and the CI community (Wright *et al*, 2004) and Germany, where CI is also anchored in the private sector (Michaeli, 2004). Larivet (2007) noted that UK and Germany follow a US concept of CI based on competition and markets.

CI in France is viewed as a means to enhance enterprise competitiveness (Jakobiak, 2006; Smith & Kossou, 2008; Smith *et al*, 2010; Wright, 2011) or national competitiveness (Martre *et al*, 1994; Carayon, 2003; Carayon, 2006; Smith & Kossou, 2008). Without the state support initiated by government reports (Martre *et al*, 1994; Carayon, 2003) the funded environment for this study would not have been possible. Appendix 1 is a translation of the introduction to a CI good practice guide published by the Ministry of the Economy, Industry, and Employment. It conveys the French governmental thinking on CI which may be foreign to those unfamiliar with the French CI mentality.

As a construct, CI continues to evolve, not least of all in terminology. The addition of Insight Management (Wright, 2011) to CI, emphasising the process of analysis and transformation in addition to the intelligence acquisition, is further evidence of CI as a dynamic, evolving process (Fleisher & Bensoussan, 2007; Brody, 2008). By 2011 CI had an international following largely espoused through the USA centric SCIP. The name change from *Society* to *Strategic* CI Professionals emphasised the perceived strategic orientation by its members. In Europe, the German based DCIF is a notable player in bringing together CI professionals, academics, and the business community at large. France stands out in Europe for its CI public policy, represented at every level of government, and diffused through a large number of actors from both private and public sectors.

This study focuses on the Small and Medium-sized Enterprises in the two French regions of Ile de France and Rhone-Alpes. These enterprises can participate in CI programmes initiated by the CCI within the larger context of French CI public policy hereby presented. Ile de France and Rhone-Alpes are the two most dynamic economic regions of France (Eurostat, 2010). The two sectors selected for this study were Telecoms and Automobiles, both of which are well established in these regions and are known for their high degree of international competitiveness. Telecommunications has been identified as a very active sector in terms of CI importance (Said, 2006; Haddadi *et al*, 2010). Automobile has also been a sector of interest in CI studies (Guilhon, 2004; Gorla, 2006) as well as being a sector of reference in the government CI reports (Martre *et al*, 1994). The researcher also conferred with CI programme directors at regional CCI as to appropriate sectors to study, keeping in mind population and sample sizes as well as sectors which are active in CI practices.

2.4 Chambers of Commerce and Industry

French CCI are particularly well structured and financed. The national coordinating body, AFCCI, (French Association of Chambers of Commerce and Industry) represents 148 local chambers and 21 regional chambers. Over 1.8 million enterprises are represented and supported. These structures include more than 500 training organisations, 30, 000 men and women, and are run on an annual budget of 4 billion Euros (Clerc, 2009).

As a tax-collecting entity the CCI is a natural and long term partner for any company in France. Clerc (2004) considered the CCI as a key actor in the national French CI programme. In contrast to many European countries, enterprises which engage in commercial activities are obliged by law to become members and pay a professional tax. Smith *et al* (2010) found that most SMEs considered the CCI a very credible source for CI assistance. The CCIs in France represent networking organisations that bridge the public and private sectors with an intimate knowledge of the entrepreneurial community (Clerc, 2009). In what has widely been named as Territorial Intelligence (Dou, 2004; Knauf, 2007; Moinet, 2008; Francois, 2008), the French CCIs have become a key player in implementing CI support for SMEs (Clerc, 2009; Smith & Kossou, 2008; Smith *et al*, 2010; Dufour, 2010).

The roots of French CCI CI programmes go back over 10 years (Smith *et al*, 2010; Moinet, 2010). It was in 2005 that the programmes became official and an effort to build synergy emerged (Mongereau, 2006; Moinet, 2010). A national CI plan was formulised which embraced not only the CCIs but also the regional prefects and the gendarmerie (Dufour, 2010). The programme had four main objectives (Moinet, 2010; Dufour, 2010), which are presented below.

1. Train the collaborators: to develop strategic knowledge, animate a network of enterprises, instil CI specialists in the enterprises.
2. The implementation of a shared data-base: how to produce the network content, the distribution modes and how to exploit the content.
3. The optimisation of the CI programme: interpreting the trends which shape the future of the region's enterprises.
4. The availability of tools and methods: adapted to the operational needs for developing strategic knowledge. Animating the network of enterprises which have implemented the CI function.

Dufour (2010) based her PhD thesis on the competency contributions for CCI CI programmes in Rennes, Brittany, a regional chamber. Noting that the roots of these CI programmes went back 20 years her thesis gives a good insight into how CCI CI programmes have evolved in France and how they have become part of regional economic policy. The current CI programmes received an impetus in 2005 when the French

Association of Chambers of Commerce and Industry announced their own national plan for CCI CI programmes as an integral part of the national CI plan. The plan spoke of the urgent need for the CCIs to have a shared, readable and effective CI policy for the competitiveness of companies, the attractiveness of regions and France as a whole (GTN IE, 2005).

Whereas Smith *et al* (2010) recognised the on-going innovation and positive results of the CCI programmes, Moinet (2010) noted that this top down approach to implementing CI programmes was never fully employed. Dufour (2010) acknowledged the political, economic and budgetary constraints which have hampered the implementation of the national plan. Nevertheless, the CCI CI programmes continue today, albeit in a decentralised manner. The government decree N°2009-1122 of 17 September 2009 nominated Olivier Buquen as the French CI delegate (Moinet, 2010). This new role was seen as being more narrowly defined than the former High Representative of Competitive Intelligence and that policy would be led directly from a presidential team (Moinet, 2010). Whatever the political positions which have come and gone, the role of the CCI in France continues, notably in regard to SME needs in terms of CI. Clerc (2004, pp 73) summed up the role of the CCI in France: *“The CCI are the essential intermediary. They assist the SMEs in their development by the acquisition and interpretation of information. They also help the SMEs position themselves in both their competitive and cooperative environments and help them take action directly on their environment”*. Franco *et al* (2011) called for an inclusion of institutions engaged in CI as public policy as units of analysis in future research.

2.5 The Objectives of This Research

The following research objectives in Table 2.3 lay out the purpose of the thesis and inform the research questions which are presented in Chapter 4. They will be revisited in Chapter 7, Contributions to Knowledge. The research objectives reveal an exploratory thesis which investigates CI as a public policy for SME support. The research objectives 1 to 3 investigate the context in which CI public policy addresses SMEs and their performance. Research objectives 4 to 8 identify, develop, and test themes which have surfaced from the literature and the qualitative data. Chapter 3 discusses this literature and elaborates on the

gaps which are focused on in this thesis. Research objectives 6 and 11 encompass the theoretical grounding of the study. The final 4 objectives represent the outcomes of the study. The write up of the results includes a manifestation typology which, using bird analogies, proposes 5 SME types on a continuum of behaviours and attitudes.

Table 2.3 The Research Objectives

No.	Research Objectives
1.	Describe and explore the funded environment of CI public policy for SMEs in France.
2.	Describe the nature of the CI programmes implemented through the CCI in France.
3.	Identify the major public and private sector players in the French CI public policy programme.
4.	Test existing CI typologies to account for SME attitudes and behaviours in a funded environment.
5.	Underpin research design with an established theoretical model that relates behaviour to attitudes and their antecedents.
6.	Identify and develop themes which drive SME decision-makers' CI behaviours.
7.	Analyse the relationships between the influence drivers and the SME CI behaviours.
8.	Propose an original CI typology with original SME type labels, substantiated by qualitative and quantitative data, to facilitate both managerial and research objectives in a funded environment.
9.	Debate the findings from the study in the contextual environment in which the thesis is studied.
10.	Discuss how theoretical underpinnings of the study have shaped analysis and findings.
11.	Contribute to the literature on CI as a public policy

2.6 Why Small and Medium-sized Enterprises?

According to Eurostat (2008) as many as 99% of enterprises operating in the EU are SMEs, they provide two thirds of all employment in the private sector, and are considered to be the best creators of jobs. The high variation of the relative contribution of SMEs to national or European economies fundamentally depends on the parameters chosen, which tend to vary from one economic agency to another. The French Finance Ministry, in reference to the SME definition named below, declared that French SMEs represented 63% of all employment, 42% of value added, 14% of exports and 34% of tangible investment (MEEI, 2009). The question is no longer whether SMEs contribute to economic growth but rather how they can do so more effectively (Pelissier, 2009).

The case for SME research has been well established by management scholars (McGregor 2005; Ruzzier *et al* 2006; Nkongolo-Bakenda *et al*, 2006; Raju *et al*, 2011). This study seeks to supplement the body of knowledge in the SME domain by shedding light on the influence drivers of the CI processes within a funded environment. This is explicitly addressed in research objective 8. No longer seen as a domain exclusively for large companies, CI practice in SMEs has in recent years been a topic of interest for a number of research studies in Canada (Brouard, 2006; Tarraf & Molz, 2006; Brouard & Larivet, 2007; Tanev & Bailetti, 2008) and in France (Salles, 2006; Knauf, 2007; Afolabi, 2007; Dufour, 2010). Larivet & Brouard (2012) examined CI practices in Belgium and Wright *et al* (2012) applied a CI typology to Turkish SMEs.

The two bands chosen for this research are the 10 to 49 employees and 50 to 249 employees. These are commonly referred to as SMEs by Eurostat (2011), which further stipulates less than 50 million Euros in annual turnover and less than a 25% holding by larger companies.

Bulinge (2002) and Larivet (2002) both focused their PhD studies on CI in French SMEs. Bulinge (2002) particularly emphasised the inherent limitations of SMEs in terms of resources and proposed a model to assist in the incremental transfer of skills culminating in the implementation of a CI system. He acknowledged the difficulties and high consumption of resources that this approach presented. Larivet (2002) proposed a

theoretical basis for CI referred to as a managerial approach. Her study reported the empirical data from 100 SMEs confirming CI presence and practice. More recent PhD studies have included reference to funded assistance programmes. Knauf (2007) identified roles and competencies for an individual coordinator, as a new profession, in regional intelligence programmes. Dufour (2010) explicitly focused on how to run CCI CI programmes more efficiently through the investigation of the SME decision maker's 'black box'. The concept of 'black box', first presented by Wiener (1948), refers to the internal cognitive processes of an individual or group. Specifically, information is transformed into knowledge through an Organisational Learning System, with the outcome of economic performance (Dufour, 2010).

Goria (2006) and Afolabi (2007) enlarged the structural context in which decision making transpired and Knauf (2007) investigated the implementation of Territorial Intelligence. In addition to doctoral studies there have been a number of books published in France focusing on SMEs and CI. For example, Guilhon (2004) led a team of authors to explore the conceptual approaches of SMEs towards CI as well as discussing the results of empirical research. Salles (2006) emphasised the identification of SME CI needs and expands this into the service sector. Larivet (2009) wrote about CI practiced in SMEs from both a theoretical and practitioner perspective. Other CI books in France have touched on the role of CI for SMEs (Lesca, 2003; Jakobiak, 2006) with a broader focus of CI for all sizes of enterprises. Overall we see an active community of researchers and publications in CI in France, often specifically for SMEs.

2.7 Why the Role of Attitudes and Awareness as Influence Drivers?

International comparative studies of CI practices have shown that attitude and awareness have emerged as key influence drivers to the CI process (Wright & Calof, 2006; Viviers *et al*, 2005; Dishman & Calof, 2008, Wright 2011, Larivet & Brouard, 2012). CI itself has been defined as both art and science (Calof & Skinner, 1998) and, essentially, as being qualitative in nature (McGonagle & Vella, 2002). Research on measuring CI effectiveness suggests that multiple dimensions need to be integrated (Blenkhorn & Fleisher, 2007), or that if ROI concepts are to be valuable, they need to be linked to qualitative assessments (Buchda, 2007).

Attitudes, even if they are latent hypothetical constructs, are observable in a wide variety of ways (Ajzen, 2005). Attitude was one of four key attributes of a typology developed by Wright *et al* (2002) following a study of CI active UK firms. This study explicitly omitted sole proprietors and partnerships which were considered, but not verified, to be less aware of the CI process at that time. Rouach & Santi (2001) developed a CI attitude typology which included French SMEs as well as larger companies. This typology has been used to position British charities on their competitor analysis attitudes (Bennett, 2003), to position CI attitudes for multinational divisions (April & Bessa, 2006) and to categorise perceived SME positioning by CI programme directors in France (Smith *et al*, 2010). This typology is used as a research instrument in the qualitative data collection, facilitating research objective 7. Tarraf & Molz (2006) focused on the role of attitude and perception on the decision-makers in small companies and how they affected CI practices in Canada. Industry business models were found to influence how companies viewed competitors. Furthermore, Taraff & Molz (2006 pp 30) stated: *“The research extends beyond simply informing about small companies’ behavior to include the reasons and rationales behind that behaviour”*. In a recent study (Qiu, 2008), following an antecedent approach, entrepreneurial attitudes and normative beliefs were found to significantly influence managerial scanning for CI. Pautrat & Delbecque (2009, pp 20) stated that: *“Competitive Intelligence depends more than anything else on the attitudes of men and woman who have clearly integrated the stakes involved”*.

France has an original and established funded CI environment for small businesses. The quasi-governmental status of the French CCIs, with experienced CI programme managers, provides key informants for CI field experience. SMEs, receiving ever more attention as creators of employment and economic growth, struggle to organise and implement effective CI practices. Most of the models and literature in CI have been created for large companies and do not cater to the specific needs and deficiencies that SMEs confront. This Chapter has emphasised the importance of investigating CI programmes to enhance SME competitiveness and why the timing is favourable. The literature review in Chapter 3 will go deeper into the CI construct development in Europe and France.

CHAPTER 3: Literature Review

3.1 Introduction

The literature review starts by examining the CI construct in both European and French settings, leading to a discussion on the roles of culture and terminology. The scope of CI is elaborated through modelling the different levels at which CI can be a public policy in France and how this fits in with regional development programmes. A theoretical approach to CI literature encompasses a revision of CI typologies, the linkages between CI and Organisational Learning and overall taking stock of the scholarly work in this area. Notably this includes attitudes and awareness as influence drivers of CI processes. The review ends by focusing on SMEs in particular and a summary of how the literature review has fleshed out the research objectives, leading to the following Chapter on research design.

3.2 CI in Europe

It is difficult to speak of a European Competitive Intelligence (CI) due to the different interpretations found across the continent (Larivet, 2007). While certain fundamental concepts such as the intelligence cycle can arguably be identified in all western countries, the CI concept seems to take on national context within social, governmental, and economic structures. The intelligence cycle refers to the planning, data collection, data analysis and data dissemination CI processes (McGonagle, 2007). As identified by Larivet (2007) four schools of thought have emerged in a European context. CI should however, be seen as an evolving concept (Bergeron, 2000b, Brody 2008; Wright, 2011) not limited to geographic boundaries. As Drucker (1993) stated, we are living in a knowledge revolution which may not stabilise for twenty years or more. First, the United Kingdom approach, closely following North American concepts of CI, emanates from the Marketing domain. CI units are most likely to be found in the Marketing department (Wright *et al* 2004) and the most published articles on CI appear in marketing journals (Fleisher *et al*, 2007).

Germany also could be positioned as having a North American approach in that it focuses on surveying competitors and the market (Michaeli, 2004). Second, Nordic approaches are more global, encompassing the whole environment. In Finland industry speaks of 'Business Intelligence' (Pirttimaki, 2007). Ex-Soviet Union countries, including Russia, have a heavy military inheritance in CI practices which presents a third school of thought. In Russia four out of five CI professionals were from the ex-Soviet military and intelligence services in 2006 (Larivet, 2006). France represents a fourth and unique approach which will be discussed in the following sections.

3.3 CI in France

In evaluating the literature on CI for this study it was necessary to both separate and compare the French concept of *Intelligence Economique*, to the CI construct evolving in the English speaking world. While they are often presented as translated equivalents (Dou, 2004; Salles; 2006; Larivet, 2006; Oubrich, 2007; Pelissier, 2009) others have noted the differences in scope and content (Jakobiak, 2006; Smith & Kossou, 2008; Larivet & Brouard, 2012). Belgium comes close to following the French concept of CI but they preferred to call it Strategic Intelligence to separate it from potentially negative connotations such as industrial espionage (Larivet & Brouard, 2012). Before reviewing the specificity of French CI thinking more fully, the historical and cultural setting will be discussed. Reviewing CI and French CI constructs and models chronologically results in a vision of what both concepts represent today, where they have evolved from, and how they resonate for their respective audiences.

3.4 The Influence of Culture on CI

Commenting on the role of culture as an obstacle in France, with a self-exclaimed dose of humour, Perrine (2006, pp 16) stated: "*Being good students, disciples that we are to Descartes, we only want to act once convinced that all the available options have been exhausted and all that is left is the best solution that our methods taught at school can identify... the pragmatism of Anglo-Saxon culture doesn't fit with our Latin culture.*" Even if Hofstede (1993) emphasised that management theories are human and to some degree

culture bound, he appealed for their internationalisation to enrich them at the national level. CI practice in France should be compared and contrasted with other approaches for common enrichment, but each should be positioned in their respective management heritage. Adidam *et al* (2009) cautioned against transporting CI approaches from the USA to other cultures with the expectation of the same results.

Culture influences CI processes (Elizondo & Glitman, 2004; Bulinge, 2006; Smith & Kossou, 2008) and both geography and history are important factors (Larivet, 2007; Adidam *et al*, 2009; Fleisher & Wright, 2009). Serieyx (1993) also cited by Duchéneau (1996) and Bulinge (2002 pp 354), had this to say about his French compatriots' managerial heritage: *"Our national organisation has been forged by Colbert, Jacobin and Napoleon. We have been immersed in a Cartesian logic which simplifies the complex in order to organise in straightforward linear sequences...this heritage results in the heritage of an enterprise founded in order, centralisation, an omnipresent leader, a pyramid, and a logical process that puts everybody in their place"*. France has a very different management philosophy when compared to Anglo-saxon cultures. For the English speaking world, management is above all a call to action, whereas for a French man it is an intellectual endeavour (Labouérie, 2001). Hofstede (1980) prescribed a cultural profile of France as having high power distance resulting in hierarchical structures, high individualism, a moderate femininity, and a distinct avoidance of uncertainty or risk aversion. Bulinge (2002) noted that the individualism and the hierarchical structures are not conducive to effective CI.

In France, the larger companies and corporations are mostly managed by the elite graduates of the *grandes école* (Bulinge, 2002). This is not true for the SME managers. Bulinge (2002, pp 356) summed this up: *"on the one hand there is a rational approach, planned, written, intellectualized, bureaucratic... and on the other an intuitive approach, empiric, oral, operational, non-formalised by autodidactic owner-managers"*. The state inspired CI programmes that are being implemented across France are to some degree a clash of these two worlds, even if it is mitigated by the CCIs, which are experienced in bridging this divide.

3.5 Terminology for CI

There is a consensus on hierarchical structures between data, information, and knowledge. Information constitutes a processed form of data and knowledge is the judicious application of information (Bajaria, 2000; Rowley, 2006). This does not appear to be destabilised by cultural or linguistic issues. Defining CI has however created significant debate for both practitioners and academics in France (Bulinge, 2002; Carayon 2003; Jakobiak, 2006; Larivet 2009; Moinet, 2010) and in the English speaking world (Wright & Calof, 2006; Fleisher & Bensoussan, 2007; Brody, 2008). The origins of the French term *Intelligence Economique* are from the United States, a fact which has complicated the semantic debate (Bruté de Rémur, 2006). The commonly accepted translation of CI into French or indeed vice versa is *Intelligence Economique* but this does not resolve equivalence issues (Jakobiak, 2006). *Intelligence Economique* is arguably a larger concept than CI because it is a public policy (Carayon, 2003) and it has a defensive orientation (Larivet, 2009).

Terminology is a dilemma for academics in that none of the alternatives are solutions. This study is no exception. Hereafter the term CI will be used primarily unless a specific reference to the French *Intelligence Economique* is warranted to fit the context. One temptation is to translate *Intelligence Economique* directly as Economic Intelligence but Masson (2004) cautioned against this. In the corridors of the European Commission the French *Intelligence Economique* had indeed been translated as Economic Intelligence, with ‘intelligence agency’ connotations, mostly pejorative, which satisfied nobody (Masson, 2004). This thesis is written in English, *Intelligence Economique*, will be translated as Competitive Intelligence while recognising the aforementioned concerns.

The literature on CI definitions has largely centred on generating lists of different terms (Carayon, 2003; Bulinge, 2002; Bruté de Rémur, 2006) more likely to be associated with an academic than a CI manager. After investigating conceptually the cacophony surrounding CI terminology (Daguzan, 2004, pp 95) concluded that: ‘*In reality this semantic difficulty manifests itself due to the crossroads of several worlds and several activities*’. Despite all these complexities, how respondents refer to CI is a good indicator of how they position the concept in their minds (Wright *et al*, 2009). Little, if anything, has

been done to investigate the relationships between terminology by practicing managers with their attitudes, behaviours, and use of CI advisors in a funded environment.

3.6 The Scope of French CI Concepts

In summarising a panoramic view of French mentality on CI Smith & Kossou (2008), quoted by Moinet (2010 pp 100) stated:

“CI in France has three distinct features: the omnipresence of the government and its initiatives, the emergence of Regional Intelligence programs, and the impressive growth of postgraduate degree programs. The French consulting world of CI is growing healthily, rapidly and internationally. There is a French paradigm for CI. The philosophical heritage has inspired the French nation to work collectively, transcending the public and private sectors to analyse information and integrate intelligence into economic decision-making. The French approach to CI does have an administrative underpinning, which may prove to be an asset in terms of robustness but a weakness in terms of speed and innovation. The CI projects discussed in this paper are largely unique in that they represent extensions of French public and private initiatives. The cultural identity and national patriotic spirit have left their impact on CI in France and its historical development. In that sense it is not a model to be replicated but rather an example for other countries to examine and perhaps in part to follow.”

There is a French belief that enterprise competitiveness depends largely on the capacity of businesses to access information and to exploit it efficiently (Martinet & Marti, 1995; Hassid *et al*, 1997; Daguzan & Masson, 2004; Jokobiak, 2006; Levet, 2008). There is also a perception that the ‘Anglo-Saxons’ have integrated this reality into their economic systems for some time (Carayon, 2006), thus implying that France was behind (Delbecque & Masson, 2004). Almost ironically, this sense of retardation has arguably led to a highly advanced public policy. There is a patriotism that follows the French CI thinking

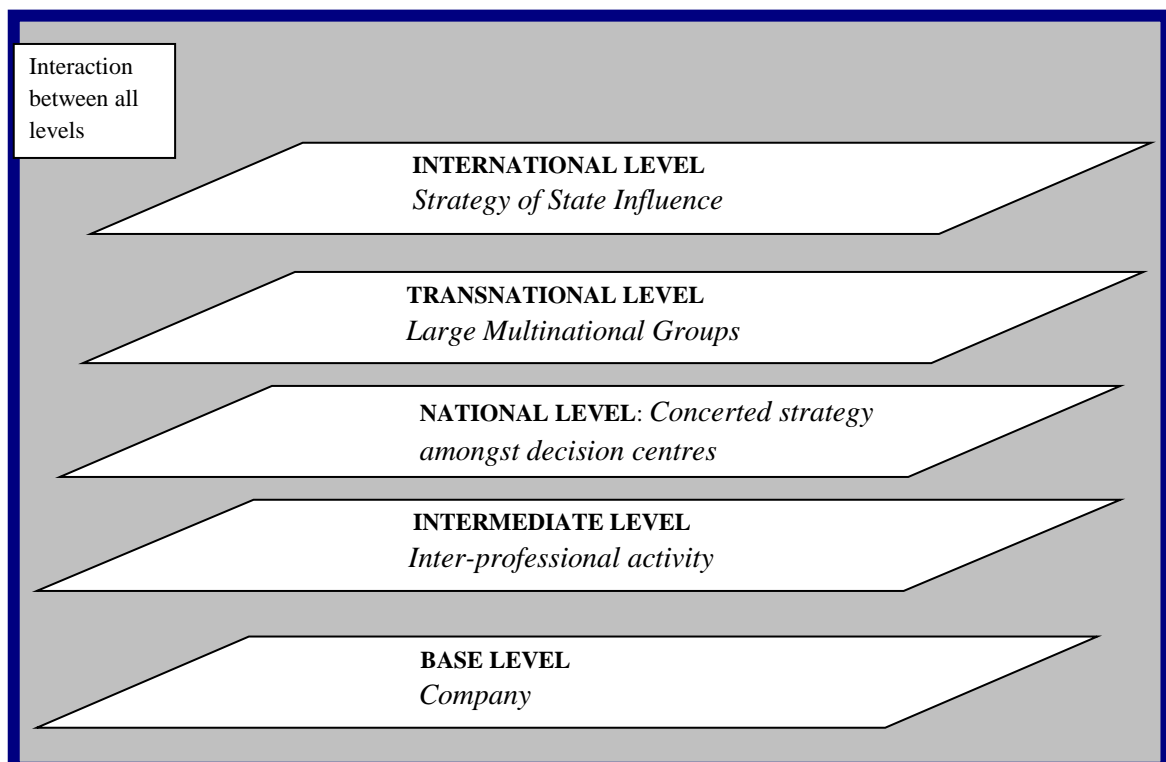
(Esambert, 1991; Harbulot 1992; Levet & Tourret, 1992; Carayon, 2003), that appears absent in other countries. There is a geopolitical dimension that sometimes slips into hyperbole such as ‘economic warfare’ (Esambert, 1991; Harbulot, 1992).

In introducing a book on French CI in 2006, the High Representative of CI at the time, Alain Juillet, declared the French CI construct (Bruté de Rémur, 2006, pp 9):

“Imported from the United States by Robert Guillaumot, explained in the report by Henri Martre, Philippe Clerc and Christian Harbulot, positioned on the global chessboard by Bernard Esambert, developed by notable visionaries like Remy Pautrat, Claude Gueant or Bernard Gérard, while at the same time leaning on the work and research of some notably advanced universities, French CI has taken 10 years to become a recognised concept.”

These personalities are still very present in the government today. CI in France is very political. The French approach to CI is certainly multi-disciplinary (Jakobiak, 2006; Bruté de Rémur, 2006; Moinet, 2010). CI in France is also more stratified than in other countries (Jacobiak, 2006). A useful model in conceptualising French thinking is the five levels of CI presented by Jakobiak (2006) in Figure 3.1.

Figure 3.1 The Five Levels of CI in France (Jakobiak, 2006)



The first level and second level, in relating to companies and inter-professional bodies, is pertinent for CI as it is for French CI. In terms of the third, national level, French CI departs from the scope of CI found in the UK and the USA in that there is concerted strategy between decision centres coordinated by the state. The transnational level of multinationals corresponds to CI in France and elsewhere but the fifth level, strategy of state influence, comes to the fore in France.

Jakobiak (2006) emphasises the interaction between all five levels. CI in France is a coordinated multi-level national policy transposing both private and public sectors with an overall objective of national competitiveness. This study focuses on the company and intermediate levels in terms of the SMEs and the CCI CI programmes respectively. It is important to recognise the potential influence from other levels which may not be present in other countries. French CI is not only stratified in a government influence context but it is also very eclectic. Bulinge (2002, pp 17) declares “*French CI as a system emanating from diverse scientific disciplines combining methodologies, organisations, and tools*”.

3.7 CI and Regional Development in France

An extension of this French public policy of CI is Territorial Intelligence (Francois, 2008; Knauf & Gorla, 2009) which has also been referred to as regional competitiveness (Bergeron, 2000b; Parker, 2000) and regional development (Dou & Manullange, 2004). Francois (2008) observed that Territorial Intelligence emerged from the regions rather than centralised government, and that these initiatives had four broad objectives. First was the need to raise awareness levels and training in CI concepts. Second, was the need for networks to bridge government and the private sector. Third, was to encourage the essential technologies and fourth, to promote a region internationally. In contrast to this vision of CI emerging locally, Pelissier (2009) insists on the explicit policy goals for Territorial Intelligence in the Carayon Report (2003), the government structures which coordinate initiatives and the top down approach. Objectively it would appear that Territorial Intelligence has emerged within both central government and local support. The initiatives were grounded in the theory of Porter (1993) that identified the source of national competitive advantage originates at the local level, as technology, institutions, firms and capital reach critical mass. Pautrat & Delbecq (2009) emphasised that Porter

(1993) recognised the role of government as a catalyst and amplifier, to create the conditions for competitive advantage. Recent research by Knauf & Gorla (2009) identified the emergence of a new French CI actor which they named the coordinator-animator within territorial business support. In addition to France, Canada has set up regional intelligence programmes (Bergeron, 2000b; Calof & Brouard, 2004) as well as Belgium (Larivet & Brouard, 2012).

An earlier doctoral study by Bulinge (2002) proposed an incremental model for transferring CI skills to SMEs. This was undertaken partly through action research in a Territorial Intelligence context. Bulinge (2002) analysed the ‘state of the art’ in France in his doctoral thesis and concluded that the concept of CI in France was still ‘fuzzy’ and not scientifically valid. His model recognised that SMEs had particular constraints with regard to information and strategy development, notably, a passive information culture, a reactive strategic approach, high levels of change resistance, a lack of time, minimal financial investment, and short term practices. This model is presented in Table 3 .1.

Table 3.1 The Incremental Model of French CI (Bulinge, 2002)

Stage A Informational Intelligence	
<i>Reactivity</i>	
1.	Strategy Formulation
2.	Identification of Informational Problem
3.	Resource Management: the Network of Information and Communication Technologies
4.	Information Search and Treatment
5.	Management of Document Information
Stage B Operational Intelligence	
<i>Pro-activity</i>	
1.	Environment Factored into Analysis
2.	Surveillance Organisation
3.	Integration of Tactical and Strategic Approaches
4.	Integration of Security Parameters
5.	Information Sharing
6.	Surveillance System Piloting
Stage C Strategic Intelligence	
<i>Inter-activity</i>	
1.	Relationship Network Exploitation
2.	Security Policy
3.	Attack Manoeuvres
4.	Strategic Management of Information

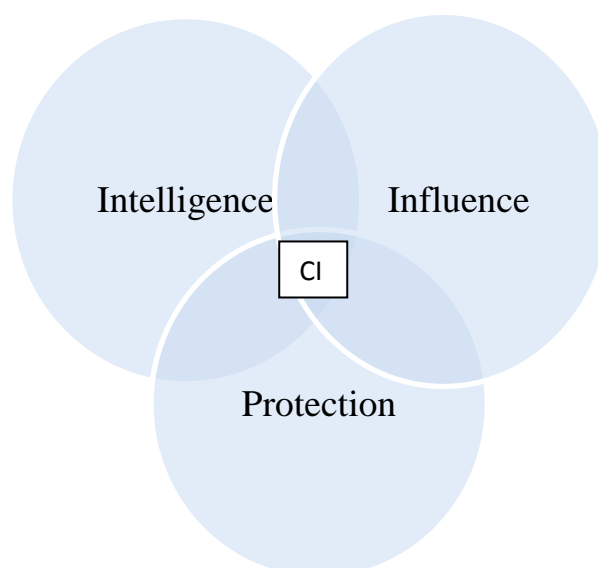
Incremental in design, to accommodate the realities of SMEs, he proposed a three phase grid to implement a CI system: Informational Intelligence is reactive, Operational

Intelligence pro-active and Strategic Intelligence interactive. Bulinge (2002) acknowledged the limitations of this approach, which include the heavy time and resource investment, whether borne by the SME or the region, or both.

Another goal in the construction of this grid was to make each step learnable, a unit of training that can correlate to education provision either at the company level or institutionally (universities), an approach later picked up by Dou (2004). Smith (2008) compared this prescriptive approach to the Typology developed by Wright *et al* (2002). The difference in the formulation of the models is telling. The Wright *et al* (2002) typology was specifically developed to reflect practices within the sample of UK firms in regard to CI, whether they were good, bad or indifferent. It was based on empirical data and has been widely referenced in a number of subsequent CI studies (Comai, 2004; Bouthillier & Jin, 2005; Liu & Wang, 2008; Hudson & Smith, 2008; Wright *et al*, 2012). The incremental model by Bulinge (2002) is the more theoretically grounded of the two and was transferred to a company after its formulation. There is little evidence however as to its up-take by either managers or academics. These conceptually opposite approaches of deductive (French) versus inductive (UK) illustrated the attitudinal diversity that existed in Europe towards CI practices and how they could be researched and implemented.

Larivet (2002) proposed a managerial science definition of CI encompassing three overlapping fields of *intelligence*, *influence*, and *protection*. This is depicted in Figure 3.2.

Figure 3.2 CI as a Managerial Science Larivet (2006)



Referring to each field as a function, the framework proposes intelligence as a means to anticipate opportunities and threats in the environment. Protection, or risk management, refers to the protection of information held by an enterprise, notably from the competitors. This is commonly referred to as defensive CI. The third function of influence is the hardest to translate. It refers to putting pressure, through the application or withholding of information, to some advantage in the market place. Lobbying is not a good translation but it does convey the sense of pressure to some desired end. Larivet (2002) proposed that French CI only really exists when these three functions intersect. Collectively, the three working together can provide competitive advantage in terms of strategically managing information between the company and its environment. It is in this sense that French CI as a managerial concept looks similar, but not the same as, CI in the English speaking world. Differences would include the French emphasis on protection and the inclusion of lobbying. The hereby stated managerial definition of CI, formulised by Larivet (2002) or ones very similar to it, is popular with French authors (Harbulot, 1992; Clerc, 1995; Levet & Paturel, 1996; Larivet, 2006; Dufour, 2010).

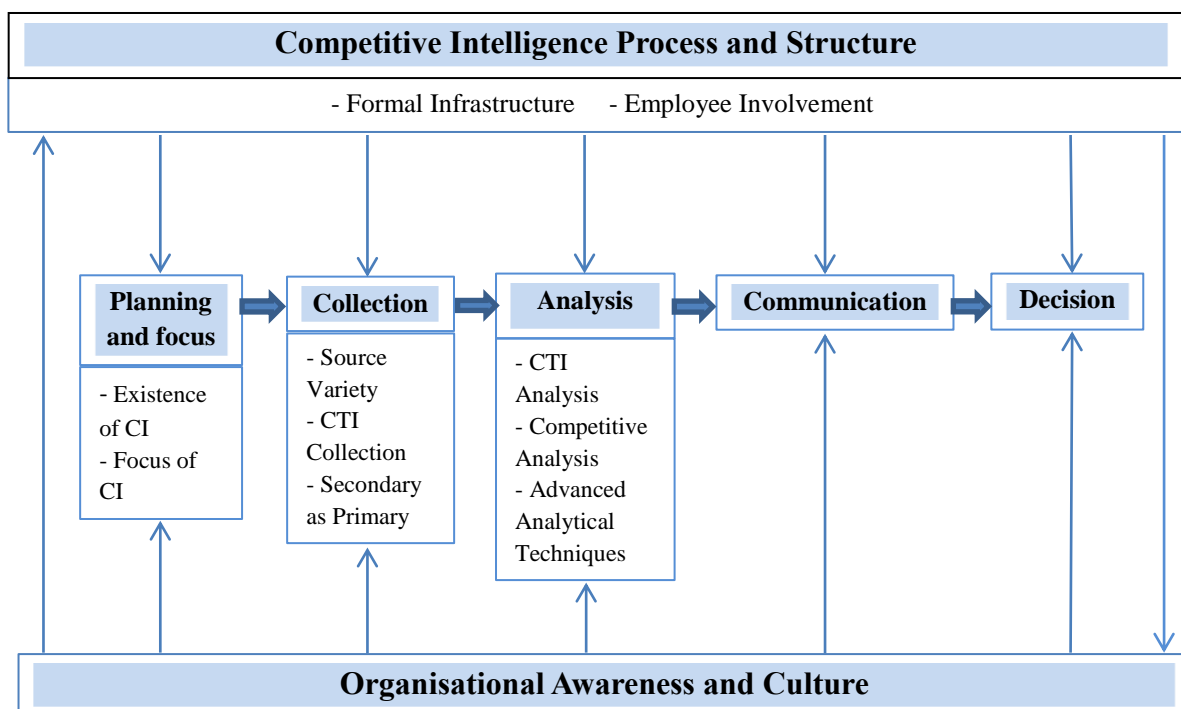
3.8 Theoretical Approaches to CI

Three theoretical approaches to CI can be identified (Oubrich, 2007). First, a definitional approach, as notably espoused by Carayon (2003) which listed over twenty definitions, or more recently Brody (2008) who explored the term CI in a North American context. Definitions, despite their importance in setting conceptual boundaries and disclosing how users position CI constructs in their minds, have received relatively little attention in empirical research. Second, a functional approach, encapsulated by Jakobiak (2006) in France, and Blenkhorn & Fleisher (2007) in English, offered much practical advice. Practitioner books serve a critical role in distributing knowledge but do not create knowledge. Third, the process approach, which emphasizes the different phases of the CI process and how they interact is persuasively best expressed by Dishman & Calof (2008, pp 768), who stated: *“Intelligence helps your company sustain and develop distinct competitive advantages by using the entire organisation and its networks to develop actionable insights about the environment (customers, competitors, regulars, technology). It uses a systematic and ethical process involving planning, collection, analysis, communication, and management.”* This research assumes a process theoretical approach

to intelligence as it emphasises the distinct phases of the intelligence, their interaction, and the holistic nature of this activity.

Dishman & Calof (2008) proposed a model of CI which identifies ‘organisational culture’ and awareness as influence drivers of CI processes. Wright & Calof (2006) referred to culture, awareness, and attitudes as influence drivers for CI processes in a similar model. A reflection on the use of the intelligence cycle, which is the central framework of Figure 3.3, illustrated below, raises the question as to whether it is an appropriate model for SMEs. The CI intelligence cycle has evolved from the US government’s strategic intelligence production model (Herring, 1999; McGonagle, 2007), with deeper roots in military intelligence (Bulinge, 2004). Many CI definitions relate to various degrees the cycle of intelligence (Brody, 2008). Figure 3.3 illustrates the Dishman & Calof (2008) model of CI processes. This model builds on the intelligence cycle adding infrastructure and employee involvement as well as organisational awareness and culture. Competitive Technical Intelligence (CTI) played an important role in the firms surveyed (Dishman & Calof, 2008).

Figure 3.3 Model of CI (Dishman & Calof, 2008)



In a dynamic and complex business environment however, the intelligence cycle fails to account for the human factor of decision making (Bulinge, 2006). There are no certainties that companies or individuals have the capacities to interpret their sources (Israel, 2004). In investigating the implementation of the intelligence cycle at EDF, Chagneau (2006) noted that nothing was foreseen as to the cognitive modalities as to how data would be treated, analysed and disseminated. Bulinge (2006) highlights the complete absence of the intelligence cycle in Asian literature, suggesting that how individuals and groups relate to information is culture bound and not reliant on a linear model.

Whereas large companies have formalised, even routine behaviours, which may follow the intelligence cycle, SMEs are often run by one individual, operating at multiple levels making decisions with tacit information (Salles, 2006). As McGonagle (2007, pp 84) stated: *“Another approach would be to generate a separate model (or models) for tacit-oriented, target-oriented and technology-oriented CI, as well as for the lone operator and for the individual to whom CI is not a process but one of a variety of tools to be used on a daily basis.”* The CI operator in an SME is very likely to be conducting collection, analysis, as well as being the end user. In other words, the concerns that have been expressed about the intelligence cycle may be even more pertinent in small businesses.

Wright & Calof (2006) analysed three CI practice studies carried out in the UK (45 firms which answered fully), Canada (1, 225 firms) and Europe (227 firms). Although, as they point out, the studies were not using directly comparable methodologies and approaches, they do provide some interesting insights into CI practice in the three locations. It can be seen that Europe is far behind the UK in the number of companies possessing CI units (23% and 69% respectively), but ahead of Canada (2.3%). Only the Canadian study had significant numbers of SMEs in the sample frame. In Canada, awareness and culture were seen to be strong, supported by information sharing and mutual assistance. However, analysis was seen to be weak compared to the UK and Europe.

3.9 CI Typologies

A simple classification which emerged from the USA, applied to large corporations, has been the reference to Ostriches and Eagles as CI performance types, the most ineffective

being termed Ostriches and the most effective being termed Eagles. First introduced and subsequently developed as a concept by Harkleroad (1996; 1998), this framework was promoted by two notable consulting firms (Future's Group, 1997; Outward Insights, 2005) in their CI related work. The sample frame for these studies was circa 100 senior executives from US corporations covering diverse industries and relied on self-reported responses, limited in scope to the two aforementioned types. As can be seen from Table 3.2, the personality descriptors for this typology were not expansive, but as the first of its kind to appear in the literature, it has provenance.

Table 3.2 Ostriches and Eagles Typology (Harkleroad, 1996; 1998)

Ostriches	Eagles
Consider that a competitor had never used intelligence techniques against them. Firms which don't have or don't feel the need for a CI system	Firms which are perceived by other companies' senior executives to make good use of Business or Competitive Intelligence

In contrast, Wright *et al* (2002) developed an evidence-based typology of CI practices in UK companies covering four strands of CI activity: gathering, attitude, use and location. Illustrated in Table 3.3, this approach provided a framework for illustrating a firm's position in terms of its current CI practice, showing how it might incrementally progress. This typology has been applied in a corporate setting (Comai, 2004; Bouthillier & Jin, 2005; Liu & Wang, 2008), in a non-profit context (Hudson & Smith, 2008), for SMEs (Wright *et al*, 2012) and in a country comparison conceptual study (Smith, 2008).

Table 3.3 Typology of CI Practice in UK Firms (Wright *et al*, 2002)

CI Practice	Attitude	Gathering	Use	Location
Weak ↓	Immune	Easy	Joneses	Ad Hoc
	Task Driven	↓	Knee-jerk	↓
	Operational		Tactical	
Best	Strategic	Hunter	Strategic	Designated

From their study of European and US firms of varying size, Rouach & Santi (2001) developed five attitude profiles of CI activity. On a scale of one to five, "sleepers", showed no planned CI activity with management identifying no need for it. "Reactives" undertook some CI activity but only when facing competitive challenge. "Actives" provided continuous low level CI but with limited funding. The final two profiles were called "Assault" and "Warrior". These types enjoyed substantial resources and a dedicated unit

set up to carry out CI activity ranging from patent searches to war gaming. Of their sample, most French SMEs were Reactives while most US SMEs and many large French firms fell into the Actives category. Table 3.4 illustrates the Rouach & Santi (2001) typology.

Table 3.4 Five Types of Intelligence Attitudes (Rouach & Santi, 2001)

Offensive	5					Warrior
	4				Assault	
Active	3			Active		
	2		Reactive			
Inactive	1	Sleeper				
	0	1	2	3	4	5
		Amateurs		Professionals		Experts

These typologies were not specifically built to describe SME CI practices, but empirical studies show that SMEs rarely correspond to the top categories of previously described typologies. Early work by Groom & David (2001) indicated informal practices which nevertheless realised potential returns. In France, Larivet (2002) identified 3 types of information management practices: economic intelligence, environmental scanning and inobservance, which are presented in Table 3.5. This study, entirely data driven, revealed that more than 40% of SMEs engaged in very little, almost no, CI activities.

Table 3.5 Three Types of Information Management Practice (Larivet, 2002)

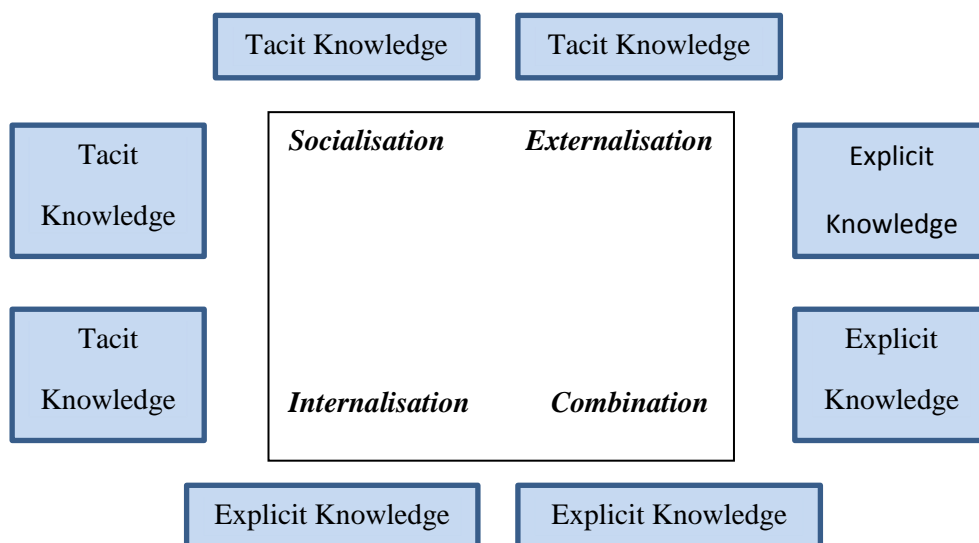
SME Type of information Management Practice	Economic Intelligence	Environmental Scanning	Inobservance
Anticipation horizon	1-3 years	1-3 years	A few a month
Environment scanning frequency	Several times a month	Several times a month	A few times a year
Counter-intelligence awareness / protection measures	Average	Low	Low
Influence/lobbying practices	Local	No	No
Proportion in surveyed population	21%	37%	42%

Recent research (Qiu, 2008; Dufour, 2010; Larivet & Brouard, 2012) has explored not only the antecedents of CI attitudes but also the potential outcomes of CI processes in companies. The following section discusses how CI, Knowledge Management and Organisational Learning relate to each other.

3.10 CI as Knowledge Creation and Organisational Learning

Another worthwhile addition to these models comes from the Knowledge Management (KM) sphere. In a wide ranging review of literature on Organisational Learning (OL) and KM, Pun & Nathai-Balkissoon (2011) concluded that the two fields are very closely related, that there was a need to empirically test theories that integrate the two fields for both large companies and SMEs. Dufour (2010) recognised that while KM and CI both treat information and intelligence, the precise nature of their complementarity is largely unknown. Drew (1999) considered that CI enriched KM by providing external information. Nonaka & Takeuchi (1995) identifies two modes of knowledge, *tacit* (sometimes referred to as *implicit*) and *explicit*. The way that knowledge is created, understood and shared is referred to as the knowledge spiral. ‘Socialisation’ refers to shared experiences that allow people to create tacit knowledge, for example on-the-job training. ‘Externalisation’ is when tacit knowledge is formulated explicitly through language, (written or oral) or any other means such as art or mathematical formulae. ‘Combination’ is when explicit knowledge is manipulated, sorted or combined for example in formal education; and ‘Internalisation’ is actually absorbing the knowledge individually, and being able to put this knowledge into action e.g. learning how to use new software. The model is illustrated in Figure 3.4. As an

Figure 3.4 Four Modes of Knowledge Conversion (Nonaka & Takeuchi, 1995)



organisational knowledge creation theory it has benefited from wide spread theoretical and empirical support (Nonaka & Krogh, 2009). Parts of this model may be useful in the step of CI between the “gathering” and “use” of information, as players in the intelligence gathering stage are not always aware of what they know (tacit), what might be of use to the company in the knowledge they have gleaned during their normal activities and how this information might be shared with others in the company (externalisation). In SMEs almost all mobilised knowledge is tacit (Sadok & Lesca, 2009).

Wright (2011) recently proposed Organisational Learning (OL) as one outcome of CI processes. While OL definitions are numerous (Oubrich, 2007; Pun & Nathai-Balkissoon, 2011; Wright, 2011) there is a broad agreement that OL consists of either accumulated change in cognition or behaviour within an organisation (Wright, 2011). The opportunity for CI processes to contribute to OL had been identified earlier however (Gilad, 1995; Bonthous, 1996). In fact, the term OL is explicit in the French national CI training programme, named as an objective under the KM section of a French government report (Référentiel IE, 2004). Pun & Nathai-Balkissoon (2011) recognised the large and growing number of scholarly publications focusing on KM in tandem with OL.

The value of information is defined in the context of action, by its usage, and not by its nature (Moinet, 2011). How individuals interpret information has been a recurring theme in the CI literature. Weick (1995) referred to ‘sense making’ as the central motor of CI; Säid (2004) emphasized ‘interpretation’ which combines means and results to develop capacities in enterprises; Wright (2011) proposed ‘CI and Insight Management’, noting that it is the transformation of information through the filtering, analysing, checking and processing that creates knowledge. Extending this thinking Levet (2001, pp 40-41) proposed knowledge creation as learning: *‘Knowledge is above all a cognitive capacity to learn whereas information is formatted and structured data. The essential property of knowledge is the power to engender new knowledge whereas information reproduces itself by simple duplication. Knowledge cannot be easily transferred as it is incorporated in individuals and organisations which cannot be isolated from their environments. The creation of knowledge therefore appears to be a process of learning.* To impart sustainable competitive advantage, a CI programme must therefore change practices, attitudes and competencies that are conducive to knowledge creation.

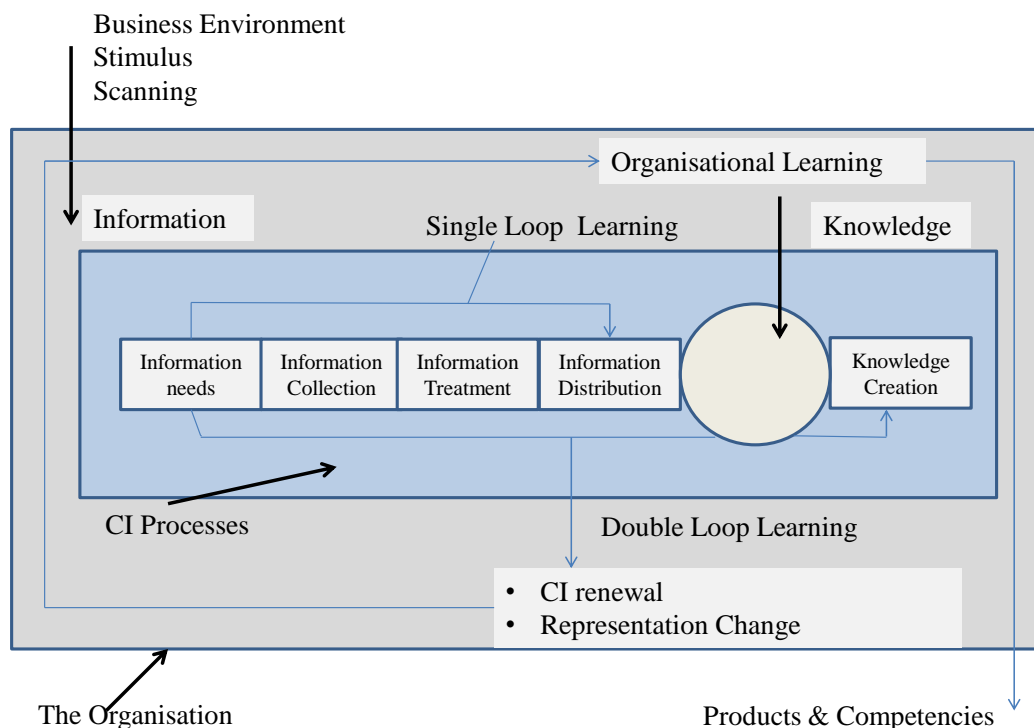
Attempts have been made to integrate OL into the CI processes. There is a consensus today that the learning can manifest itself through both behaviours and cognition (Garvin, 2000; Argote & Miron-Spektor, 2009). Early work by Bonthous (1996) emphasised that CI conducted without an effective OL environment will only produce information, and not intelligence. One dilemma with this approach is that there are nearly as many definitions of OL as there are studies on the subject (Oubrich, 2007). Despite the conceptual fuzziness surrounding OL there have been some tentative empirical investigations. (Dishman & Pearson, 2003) adapted a model by Bonthous (1996) proposing a continuum for intelligence as learning. It was applied to a company with 1200 employees. The findings of Dishman & Pearson (2003) in applying this continuum revealed that variance existed between management and non-management as to how to integrate intelligence into the organisation and on the methods used to create an OL environment. The literature discussing OL in an SME context suggests that despite the fact that size and resources may be handicaps, SMEs have a great deal to gain from becoming learning organisations. That CI processes can instil procedures, exchanges, and a culture for sharing which are often lacking in SMEs (Marchesnay, 2004; Guilhon, 2004). The continuum of OL as presented by Dishman & Pearson (2003) provides a framework for investigating the literature on learning concepts for SMEs. This synthesis on OL concepts for SMEs is presented in Table 3.6 overleaf.

Table 3.6 Continua for Intelligence as Learning (Dishman & Pearson, 2003)

Feature	Continuum		Relevance in an SME Context
1. Overall approach to integrating intelligence into the organisation	Mechanistic (information is merely collected)	Generative (information is also analysed and disseminated)	In SMEs nearly all information is tacit. Analysis and interpretation take human competences and knowledge which may be lacking (Sadok & Lesca, 2009)
2. Breadth of change effort in which intelligence is involved	Isolated (Based on belief that problem is unique)	Integrated (Based on belief that problem is endemic to organisation)	The role of CI in an SME is not only to create knowledge but also to clarify roles and tasks for information circulation (Guilhon, 2004)
3. Scope of intelligence effort impacts localised (intelligence efforts are within departments or functions)	Localised (intelligence efforts are within departments or functions)	Organisation wide (intelligence efforts are spread throughout the firm)	An SME is not a big company in a small form (Salles, 2006).
4. Intelligence's approach to seeing the world	Fragmented (limited perspective)	Systemic (broader perspective and comprehension)	CI practices are fragmentary and spontaneous in SMEs (Sadok & Lesca, 2009).
5. Type of contribution to individual and organisational learning	Adaptive (single-loop learning)	Generative (double-loop learning)	The importance of double loop learning for SMEs from experience or critical incidents. (Sullivan, 2000)
6. Type of intelligence flows between company and competition	Offensive and defensive (intelligence efforts primarily aimed at competitive movements)	Collaborative as well as offensive and defensive (intelligence efforts are also shared externally)	The offensive efforts of SMEs are often restricted to gathering and processing information whereas creativity is needed (Bertacchini & Strasser, 2011)
7. Type of relationship between intelligence and environment	Reactive (intelligence used to produce competitive responses and reactions)	Proactive (intelligence used to produce positive creations)	Most SMEs are reactive (Rouach & Santi, 2001; Bulinge, 2002; Smith <i>et al</i> , 2010). SMEs need to focus on proactively managing their CI to survive (Sadok & Lesca, 2009).
8. Approach to growing people	Training traditional, passive education scheme	Learning (business environment is the education environment)	Action learning may be a successful way to develop SMEs (Clarke <i>et al</i> , 2006)
9. Type of competencies developed Individual	Individual (personal competencies)	Organisation wide (company competencies)	Analysis and dissemination are driven by the character of the decision maker in SMEs (McCarthy, 2003; Burke & Jarratt, 2004; Tarraf & Molz, 2006).

Another and more recent empirical study on the integration of CI processes and OL concepts was conducted by Oubrich (2007). Using a deductive qualitative approach, a model of the classic CI intelligence process integrated the single and double loop theory of Argyris & Schön (1978). This was also an element of the continuum developed by Bonthous (1996). Single loop learning refers to modifying actions due to differences between expected and observed outcomes, whereas double loop learning questions the antecedents to those expected and observed outcomes. In other words double loop learning encourages new assumptions and theory development (Argyris & Schön, 1978). This model is presented in Figure 3.5.

Figure 3.5 Integration of OL and CI Processes (Oubrich, 2007)



This study used semi-structured interviews and discourse analysis to conclude that only double loop learning generates knowledge. The sources of learning in the double loop were identified as changes in strategic intention and changes in the 'representations' of the CI processes. In using the intelligence cycle as the central model however, the focus here is on internal activities with only limited analysis on the external inputs, summarised as environment, stimulus and scanning. The weaknesses discussed earlier concerning the intelligence cycle would seem to be a handicap in this approach. Moreover, research has

highlighted the need for so called ‘triple-loop’ learning (Wang & Ahmed, 2003) whereby organisations learn to learn before they are forced to. Pun & Nathai-Balkissoon (2011) in a similar vein, called for a focus on how innovation and higher order learning are embedded in organisations and how this can be transposed to national competitiveness. This would seem to be consistent with the goals of CI as public policy. In dynamic change environments, OL may be the only sustainable source of competitive advantage (Kandemir & Hult, 2005; Sánchez *et al*, 2009). The CI programmes running in France are quite advanced in this thinking and in application. Novincie, the CI programme at CCI Rennes, has the objective of ‘accelerating learning’ for the businesses, which are mostly SMEs (Dufour, 2010).

The models and research presented here so far have shown two parallel emerging visions of what constitutes CI from both French and English speaking world perspectives. We have seen the comprehensive nature of CI in a French context which encompasses CI thinking but extends it into a public policy and Territorial Intelligence. This is true in French speaking Canada too (Bergeron, 2000b) and in Belgium (Larivet & Brouard, 2012). In France, CI concepts have been integrated not only into company practices but also into governmental structures at every level. In the English speaking world the CI research has been mostly about analysing company behaviour in regard to CI practices and reporting these findings. One goal of this thesis is to compare and contrast these approaches and the literature that underpins them.

3.11 Scholarly Work Published on CI

Dishman *et al* (2002) catalogued English language CI scholarship from 1997 to 2002. A total of 10 scholarly articles focused on SMEs or small business with an additional three book chapters. This low level of focus on CI and SMEs actually dropped in terms of scholarly articles (down to one) for the dates 2003 to 2006 (Fleisher *et al*, 2007). The difference however, was the emergence of SME and CI as a subject for theses and dissertations. Five were identified for the later period and none in the first. At the time of writing no comprehensive bibliography analysis has been published for English language in more recent years. At De Montfort University in the UK, the CIMITRI research centre

led by Sheila Wright has produced two CI doctoral theses (Badr, 2003), the first CI thesis in the UK, and Eid (2006). Neither of these theses addressed CI in SMEs however. Research output in France for CI and SMEs has been more vibrant. According to a French database launched on July 11 2011, *Agence bibliographique de l'enseignement supérieur* (Bibliographic Agency of Higher Education) there are 109 doctoral theses with the terms SMEs and CI. The search was undertaken on July 22 2011. This database aggregates over 6000 theses completed in France since 2006. It should be stated however, that often the studies are multidisciplinary, which is one reason why a CI section has not been created at the national university council level (Silem, 2006). The top five ranked subject areas for these 109 theses, presented in descending order are Managerial Science, Sociology, Communication and Information Systems, Industrial Systems, and Economics. While CI and SMEs is a growing research area in France, its inter-disciplinary nature is both a point of strength and a handicap.

3.12 Key Empirical Studies on CI and SMEs

The overwhelming research tool on CI in SMEs has been the use of questionnaires whether delivered by mail, phone administered, or more recently, through the internet. Early work by Groom & David (2001) surveyed 139 businesses with less than 100 employees across 3 sectors in the USA. The purpose was to determine the level of engagement of small businesses in CI. The findings indicated informal practices which nevertheless realised potential returns. In France, Larivet (2002) administered a mail delivered survey to 100 SMEs. This was part of a PhD study and remains unique work in this area, which conceptually constructed a managerial science definition of CI and empirically established the presence on CI in SMEs. Also in France, Salles (2006) surveying 70 SMEs to explore their CI needs. The findings indicated the needs are related to company nature, company strategy, and the environment. Recent studies have focused on the role of attitudes in SME CI behaviours in France (Smith *et al*, 2010), in Belgium (Larivet & Brouard, 2012) and in Turkey (Wright *et al*, 2012).

Performance related studies have also used surveys. Callot (2006) found no relationship between the degree of CI conceptualisation and export performance of SMEs in France. A clear relationship between CI information used and innovation performance however was

established by Tanev & Bailetti (2008) in Canada. Also in Canada, Tarraf & Molz (2006) administered a survey through semi-structured interviews to explore sector CI practices and attitude antecedents. Sector differences were noted and some light shed on attitude antecedents in an exploratory context. Wright *et al* (2012) applied an established CI typology to SMEs in Turkey using an online administered survey. CI attitudes and practices were found to be unsophisticated.

Action research has also been a methodology in SME CI studies. Brouard (2006) engaged 32 experts in 6 Canadian SMEs to test a prototype system on aiding SMEs with Environmental Scanning, which was found to be effective. The aforementioned study by Bulinge (2002) tested a skill transfer model on an unstipulated small sample of SMEs in France. Bégin *et al* (2007) conducted CI action research with SMEs in French speaking Switzerland highlighting the importance of a strategic diagnosis.

Studies which have straddled both large companies and SMEs can shed light on the different CI dynamics related to size. Saayman *et al* (2008) tested four theoretical constructs empirically with a sample size of 601 exporters from both South Africa and Belgium. Size was determined to be factor in the success of the CI process. More than the issues of resources in small businesses, it was the lack of availability by the owner-manager, who normally leads the CI effort, which handicapped smaller businesses.

3.12 SME Characteristics

While the weaknesses of SMEs are well known, notably the lack of human and financial resources (Bulinge, 2002; Salles, 2006; Paturel & Abdulsalam, 2008; Smith *et al*, 2010), less is said about their strengths in terms of CI. Whereas a CEO of a large company may be limited to strategic decisions, the CEO of an SME will be making strategic, tactical and operational decisions simultaneously (Salles, 2006). In addition to this concentration of decision centres, SMEs have their proximity to the field and the flexibility to act quickly in changing environments. All of these attributes facilitate the effective implementation of CI (Salles, 2006). Furthermore, the SME manager has several roles, all of which enrich the exposure to information (Bégin *et al*, 2007). As decisions are often taken by a single person in SMEs the key predictors may be similar to those of individual consumers

(Thompson and Panayiotopoulos, 1999). More than with large companies, CI in SMEs is driven by the character of the decision maker (McCarthy, 2003; Burke & Jarratt, 2004; Tarraf & Molz, 2006). Dou (2004) considered that CI must be “*a way of thinking*” for SMEs and that CI should bring about changes in “*mental models*”. Koh & Maguire (2004 pp 340) stated that “*knowledge does not reside in a collection of information but in the user and it is how the user reacts to a collection of information that decides whether the process is successful*”.

Salles (2006) emphasised that an SME is not a small version of a large company. While the principal definition of the SME lays in the number of employees (Guilhon, 2004) the differences between small and large companies are considerable. Levet (2008, pp 66) in referring to SMEs and CI stated: “*today the SMEs are more and more concerned by this phenomenon. Generally more innovative and more reactive, more creative of new employment, they are also more vulnerable and less well armed to defend themselves in a globalised economy*”. Salles (2006) identified 7 fundamental differences between large and small businesses in the context of informational needs. They are presented in Table 3.7.

Table 3.7 Characteristics of SMEs (Salles, 2006)

Factor	Large Companies	SMEs
Advantages and disadvantages related directly to size	Economies of scale, cost of access to factors of production	Obligated to differentiate
Access to consumers	Often direct	Rarely direct, SME often taking the form of sub-contractor
Decision Making	Formalised	Informal, likewise for strategic, tactical, or operational decisions
Situations for decision making	Specialised, relatively consistent	Non specialised and varied
Relationship and ‘system’ with the company’s environment	Consists of procedures and even routines	Relationship architecture ill-defined with fuzzy boundaries
Problem solving competencies	Codified and explicit	Improvised and tacit
Nature of demand	Responds to an expressed effective demand	Often responding to expressed effective demand and the satisfaction of needs

Overall we see fluid, fast moving yet improvised management within minimal systems and improvised management often by the non-specialist. As Guilhaon states (2004, pp 34) “*Highly charged with information, whether white, grey, or black (legal, unethical, illegal), the SME manager impulses the changes, philosophies, culture and circulation of information*”. One typology which can complement this observation divides SMEs into the three categories of patrimonial, entrepreneurial, and managerial (Marchesnay, 2004). Patrimonial refers to the legacy and inheritance of a small business whereby the overall objective is continuity and thus the priority of information usage to this end. Entrepreneurial, whereby the use of information is crucial, refers to risk taking, seeking autonomy and being proactive. Managerial, as a type of SME, concerns those born as or part of a larger entity and therefore sharing informational practices with the parent. It would seem that this typology could overlap those by Rouach & Santi (2001) or Wright *et al* (2002). The overwhelming evidence on SMEs points to their heterogeneity (Marchesnay, 2004), not their homogeneity.

Three quite major empirical studies have been undertaken in France investigating the CI practices of SMEs. Larivet (2009) surveyed 103 SMEs in the Rhone-Alpes region to explore the manifestations of CI in the small businesses. Levet (2008) reported on the phone survey of the regional Chamber of Commerce and Industry of the Midi-Pyrénées region, which had a sample size of 801. In 2009, the regional Chamber of Commerce of Brittany published the survey results of SME CI practices in 226 companies. While each study explored the CI practices of SMEs there is not enough commonality in question types and structures for direct comparison. Nevertheless, the following synthesis of the findings does collectively present a panoramic view of SME CI influence drivers, how SMEs conceptualise the CI construct in France and a self-reported catalogue of information management practices. It also indicates how the CCI, a key player in French CI programmes, view their role in future interventions.

The phone administered survey in Midi-Pyrénées region reported by Levet (2008) centred on the CI influence drivers of the owner manager himself, size of the company, the degree of internationalisation of the company, the growth rate of the company, innovation, internet usage, and whether or not the company was certified for information management. These drivers were matched up against a typology of *offensive* SMEs (7 %), *active* SMEs (39%), *reactive* SMEs (19%) and *dormant* (33%) in terms of their CI. Table 3.8 overleaf illustrates the main findings of this study.

Table 3.8 Influence Drivers Impact on CI Practices

Influence Driver	Finding
Size (N° of employees)	Higher presence of offensive and active SMEs with larger sizes
Internationalisation	Higher presence of offensive and active in exporters
Company growth	Only slight impact by growth, favouring scanning practices
Innovation	Innovation forces the SMEs to structure and manage information
Internet Usage	Internet usage strongly correlating more progressive EI practices
Certification	Certified SMEs more likely to implement systems and structure

In summary, the presence of the drivers increases the CI activity of the SMEs. A final insight from this study concerns the role of the SME owner/manager. When the self-reported role of the owner/manager is in innovation or strategy development the rate of offensive SMEs is higher.

The survey conducted in Brittany by the regional CCI was composed of four parts: interest in CI; how environmental scanning is organised; tools for use of Internet in scanning and finally the security of information. Half of the respondents considered CI as a vague, ill-defined concept. There is a strong association with environmental scanning but much less with the managerial science definition by Larivet (2009). That is to say with the protection of information and influence role of French CI. The owner managers acknowledged their dominant role in the organisation of scanning, and moreover, how this was detrimental to a more cross-functional companywide approach. Scanning was reported to be poorly organised by the majority of SMEs. The primary reasons stated were the inability to transform scanning information into action, the difficulties encountered in analysis, a lack of skills and human resources, the lack of a companywide cross-functional approach, expressed, for example, in the inability to link scanning to prospecting business. Reflecting on the survey results, together with the results of a panel of 90 SMEs, the CCI had the

following recommendations for future CI programmes, listed from 1 to 8 on the following page:

1. Provide an improved CI communication coverage in the region.
2. Communicate CI concepts with the use of examples.
3. Make the CI concept more accessible and practicable.
4. Guide the enterprises towards CI professionals.
5. Improve company web scanning practices by differentiating to each company's needs.
6. Assist the enterprises to initiate an information security culture.
7. Improve the targeting and evaluations of regional CI interventions.
8. Create a community of enterprises around CI.

The regional CCI of Brittany is a good example of how CI programmes are maturing in France, the difficulties they encounter, and how they sometimes struggle to find the balance between legitimately assisting SMEs and their CI needs and distorting market forces. The French directive which officially launched the national Territorial Intelligence programme in 2005 specified in setting up CI programmes they must avoid (Moinet, 2010, pp 98): *“an approach too restrictive which only focuses on defensive practices and equally to avoid an approach too global which would distort competition by means of public intervention”*.

The work on SME CI practices by Larivet (2009) not only illuminated the theoretical underpinning of the French CI concept, as discussed earlier, but also examined the SME actual CI practices. The methodology consisted of a survey of 103 SMEs and 5 case studies. Like other studies it was found that the concept of CI was relatively unknown, that some SMEs practiced it without awareness or considered that environmental scanning is the equivalent of CI. Those SMEs which did practice CI were more complex, used IT and communications more frequently and involved employees with the data collection. They were more apprehensive about the legality of their practice than ethical considerations. Three factors, the company size, the sector, and belonging to a larger group, had no significant bearing on CI practice. The elements relating to strategy however, were tied to CI practice. Namely, these were having a strategic vision, differentiating and diversification, innovation, and the dimension of international competition.

The commonality of these three studies is that the owner/manager is at the heart of CI in SMEs. The drivers of CI, such as internationalisation, use of technology, or differentiation are largely strategic choices. Underpinning these strategic decisions are the personality and attitude of the SME manager, how they construct their networks, how they relate to and manage their human resources and to what degree they seek and use outside assistance. The scarcity of models in CI for SMEs may be related to this dependency. The widely attributed cycle of intelligence is but one example of how a model which is perhaps relevant in larger and more structured organisations has little relevancy for small businesses.

Putting the SME decision maker at the heart of CI processes is highly defensible in small businesses where the line between internal and external forces is porous, internal structures and specialised skills limited, and the role of one individual is predominant. Whereas research on personality traits as drivers of entrepreneurialism is inconclusive (Beaver, 2002), other studies have found empirical evidence for using attitude antecedents as predictors of CI behaviour (Qiu, 2008) and human behaviour in general (Fishbein & Ajzen, 2010). The gaps in the literature identified in this Chapter orient towards a behaviour and attitude antecedent investigation to explore relationships between CI terminology, CI behaviours, perceived constraints and background factors in a funded environment. The CCI is a central advisor and vector in CI programmes. Notably the Rouach & Santi (2001) typology has been identified as a research instrument to entice insight and commentary from key informants. Chapter four builds on this literature to propose a research design.

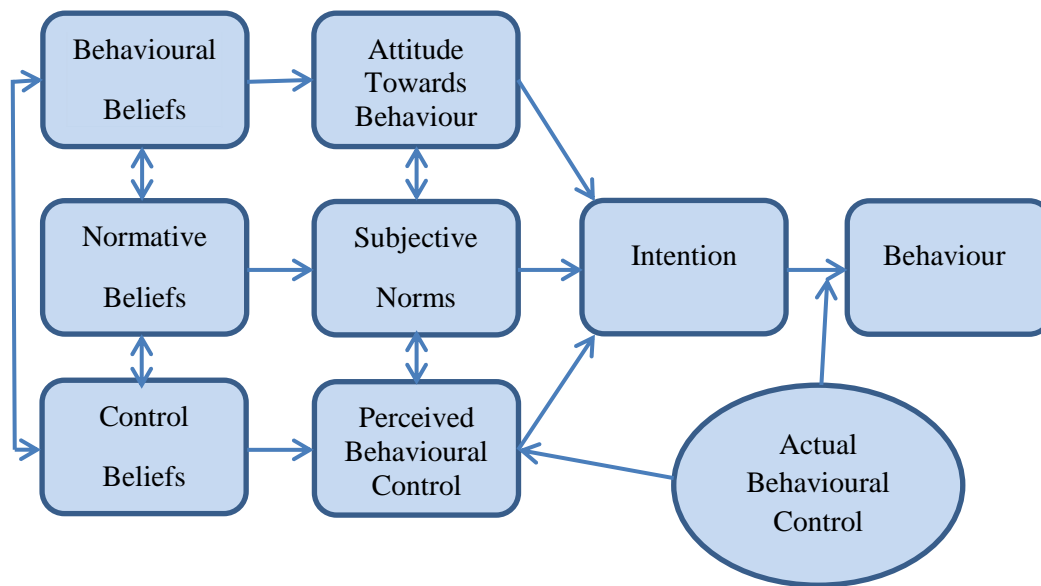
CHAPTER 4: Research Design

4.1 Identifying a Theoretical Foundation

As opposed to the natural sciences, social and behavioural sciences pose dilemmas to the researcher. As Blunch (2008, pp 3) stated “*we face a series of problems of a practical as well as philosophical nature. Another problem differentiating the social and behavioural sciences from the natural sciences is the vague nature of the concepts we are studying (intelligence, preference, social status, attitude, literacy and the like) for which no generally accepted measuring instruments exist*”. For the relatively young social science of CI and the even younger context of CI as public policy, the need for a robust and tested theoretical model is essential. This chapter introduces the theory development in the study and how it has shaped research design. The role of the qualitative data collection, how NVivo was used to develop the research themes and an overall research model are also presented and debated. This then leads into the research questions and discussions on sampling and piloting.

The Theory of Planned Behaviour (Ajzen, 1985), adapted the Reasoned Action Theory (Ajzen & Fishbein, 1980) by adding the dimension of perceived behavioural control. The postulation underlying both theories is that beliefs are the informational foundation of intentions and behaviour (Ajzen, 2005). Whereas grand theories may be too abstract to guide empirical research (Merton, 1967) the Theory of Planned Behaviour is a middle range theory (Fawcett, 2005; Benbasat & Barki, 2007). The theory of Planned Action has been widely used in social science as a prediction model for behaviour (Godin & Kok, 1996; Sheeran & Taylor, 1999; Albarracin *et al*, 2001; Armitage & Conner, 2001). Over 1000 empirical studies based on the Theory of Planned Behaviour have been published in professional journals (Fishbein & Ajzen, 2010).). The Theory of Reasoned Action has been used to predict behaviour in a small business context (Thompson and Panayiotopoulos, 1999). By investigating the informational foundation of SME CI attitudes, this study examines an SME decision maker’s tendency to perform, or not perform, certain CI behaviours. Figure 4.1 overleaf illustrates the Theory of Planned Behaviour.

Figure 4.1 Theory of Planned Behaviour (Ajzen,1985)



The Theory of Planned Behaviour (TPB) postulates that intentions are a good predictor of behaviours. In turn, the antecedents of intentions are attitudes towards the behaviour, the subjective norms, and the perceived behavioural control. Attitudes can be positive or negative towards given behaviours. Subjective norms are considered the social or group pressure to conduct or avoid certain behaviours. Perceived behavioural control refers to the perceived ease or difficulty of performing the behaviour in light of any perceived constraints. As depicted in Figure 3.10 each of these antecedents is itself dependent on behavioural, normative and control beliefs. Actual behavioural control refers to the reality that individuals may lack the skills and resources to perform a specific behaviour. In a research setting, perceived behavioural control is used as a proxy for actual behavioural control (Fishbein & Ajzen, 2010). TPB is most widely used as a predictive model of behaviour but it can be used for its explanatory insight as well (Fishbein & Ajzen, 2010).

One attractive feature of the TPB is the inclusion of background factors which clearly may or may not influence individual's behaviours. These background factors, such as personality, gender, age and race, can be correlated to behavioural differences in the model but the empirical evidence suggests that they are usually mediated through the beliefs (Fishbein & Ajzen, 2010). Additionally, this theory can contribute to designing behaviour change interventions in a CI programme context. As stated by Fishbein & Ajzen (2010, pp 23) *"By identifying behavioural, normative, and control beliefs that discriminate between*

individuals who perform the behaviour of interest and individuals who do not, we can design properly targeted behavioural interventions”.

The research objectives of this study include the role of attitudes and awareness as influence drivers of CI processes. The literature on CI conducted in SMEs has clearly delineated the decision-maker as the central determinant of CI intentions and behaviours. The model has been adapted to fit the needs of this study by grounding the salient beliefs through exploratory qualitative research. Ajzen & Fishbein (2010 pp 449) refer to this as *“formulating items for direct measure”*. For the model to be functional all the antecedents to the behaviour must be consistently aligned to the said behaviour (Fishbein & Ajzen, 2010). Behaviour can be single action or categories of action (Fishbein & Ajzen, 2010). The two behaviours of the study were the participation in a CCI CI event and the frequency of receiving CI advice. Fishbein & Ajzen (2010) propose that behaviour should encapsulate action, context, target, and time concepts. In the introduction to the survey, the action was described in the introduction as *“all coordinated actions of research, treatment and distribution of useful information for economic actor”*. The target referred to the SME decision makers, the context was Telecoms and Automobile in Ile de France and Rhone-Alpes. The time was October 2010.

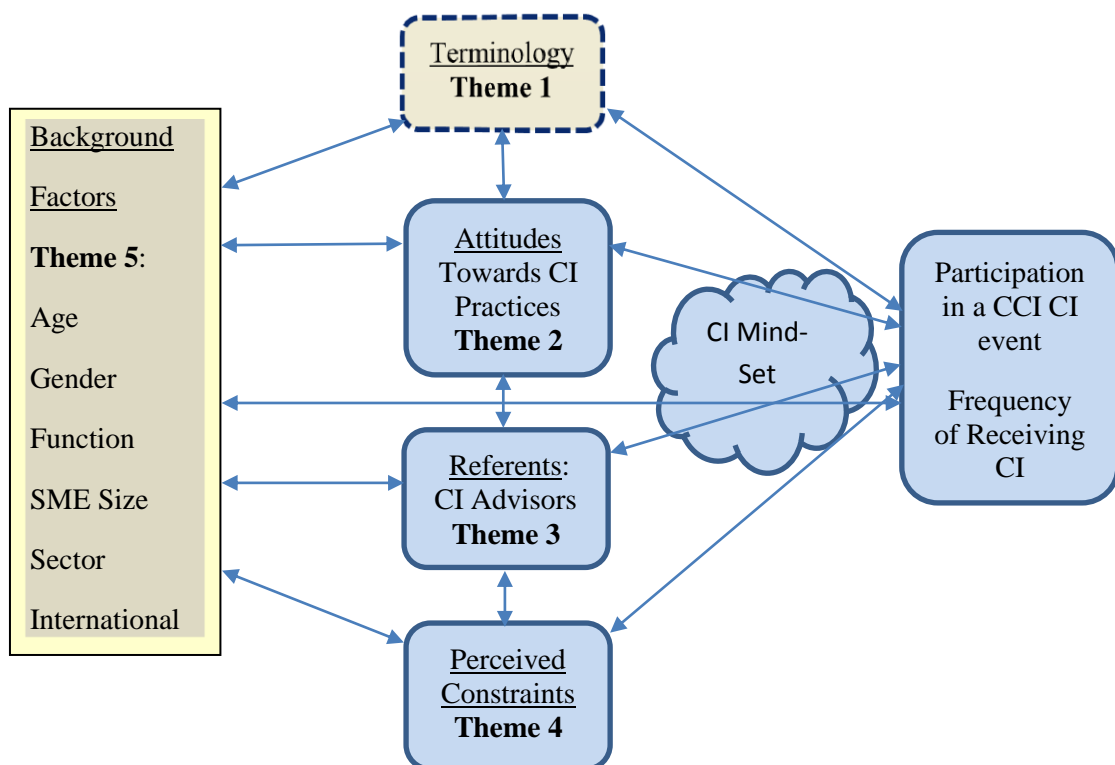
4.2 The Emergence and Development of Five Themes

Terminology (Theme 1) has been built into the research design to investigate how terminology may or may not be related to other research themes. Attitudes, Theme 2, are a key element of the Theory of Planned Behaviour. Five subject areas have been chosen to measure attitudes, positively or negatively, towards key CI behaviours. These behaviours have been elicited from the CI programme directors but they also resonate with CI research. The five attitude measurements concern the advantages of conducting a CI needs analysis (Salles 2006; Bègin *et al*, 2007); whether a CI system would improve the company’s financial performance (Groom & David, 2001); whether monitoring the competitors would improve strategic decision making (Herring, 1992; Prescott, 1995); whether the competition was monitoring their activities and whether investing in information management would improve company financial performance (Tippins & Sohi, 2003; Tanriverdi, 2005). These are the latent independent variables, which cannot be

measured themselves. Indicators, in other words, the questions in the questionnaire, will be used as manifest variables.

The subjective norms, Theme 3, are the perceived pressures on the SME decision-makers to follow a particular referent. These were to be elicited from the qualitative interviews, developed through NVivo and later used in the questionnaire design. Specifically, the referents relate to the CI advisors: Consultants, the CCI, Chartered Accountants, the gendarmerie, and as a control, no CI advisors. The perceived constraints, Theme 4, refer to the factors which inhibit the SME decision-maker from performing CI behaviour. They too were to be identified in the interviews. Specifically, these are a lack of time, a lack of financial resources, not knowing their CI needs, the ambiguity of the CI concept, and the lack of technical skills. As a direct measure of behaviours was used, intention (mind-set) was put aside. Intention is considered the best predictor of behaviour (Fishbein & Ajzen, 2010) but it is of less importance when behaviours can be directly observed or measured. The theory is chosen to as a framework from which data can be structured and related in an exploratory sense. The background factors constitute Theme 5. Figure 4.2 illustrates how the research design has been modelled on the Theory of Planned Behaviour.

Figure 4.2 Modelling the Antecedents of Planned CI Behaviour




Terminology, CI advisors, and perceived constraints were all themes which were developed through using NVivo as a qualitative data processing tool. The next section describes and illustrates this development process.

4.3 Using NVivo to Develop the Research Themes

NVivo was used as a tool to manage, organise, code, and analyse the qualitative data from the semi-structured interviews. Figure 4.3 illustrates at which stage NVivo was used in the research process.

Figure 4.3 NVivo in the Research Process


Literature Review	Theory Development	Qualitative Semi-structured interviews with CCI CI directors	Transcripts of semi-structured interviews	NVivo Coding, sorting, and data display	Selection of pertinent theme factors	Developed themes incorporated into questionnaire
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The qualitative data analysis of the semi-structured interviews was conducted in the following manner. The interview transcripts were uploaded into NVivo for coding and analysis. A case node was created for each CI director to form a constellation of sources around a person (Bazely, 2007). There were 15 case nodes. Coding the transcripts identified topics and brought together data where they occurred (Bazely, 2007). A code is an abstract representation of a phenomenon (Strauss & Curbin, 1998) which identifies themes in a text (Ryan & Bernard, 2000). This itself was driven by the questions asked. For example, nodes on terminology, advisors and constraints were formed in response to the interview questions asked. In this way a catalogue of terminology, advisors and perceived constraints was developed. Moreover, the general questions about how the CI programmes functioned and who was targeted built a picture of the CI programmes as seen through the directors' eyes. The construction of ranked tables identified factors for each of the themes in terms of frequencies and patterns (Neuman, 1997). Specifically, the percentage of CCI naming the factor (CI terms, CI advisors, CI constraints) was recorded as well as the total word frequency. This is conducted with the 'queries' function in

NVivo. The output from this data analysis is reported in Chapter 6. The theme development through the use of NVivo as a tool is illustrated in Table 4.1.

Table 4.1 Developing the Themes with NVivo

Process	Example				
<u>Coding of Transcripts</u> Nvivo provides a means to code (highlight), record, and organise subject matter from the transcripts. 15 interview transcripts (cases) were uploaded.	<p>“Well, when you look at the landscape, and you see all these players between the CCI, the gendarmerie, and ARIST”.</p> <p>“The consultants in CI are largely grouped together in the Ile de France, there are a lot of them”.</p>				
<u>Construction of Nodes</u> A node is a branch of the subject being investigated.	Name	Sources	References	Created by	Created on
	CI Advisors	15	41	J Smith	03/08/2009
<u>Development of Tree Nodes</u> A branch of nodes can be connected via a common topic	<p>CI Advisors</p>  <p>Consultants Gendarmerie MEDEF CCI Chartered Account.</p>				
<u>Development of Themes</u> Through the query function in NVivo the data set of references can be analysed. In this example, the ‘node’ CI Advisors is being queried. 13 out of the 15 CI directors named ‘consultants’ (87%). The word frequency for ‘consultants’ was 152 for the whole dataset.	French Entity	Who They Are	Percentage of CCI naming entity (n =15)	Total Word Frequency	
	Consultants	Individuals or companies which sell CI services	87%	152	
	Gendarmerie	A military body with police responsibilities	60%	24	
<u>Selection of Themes</u> Using the data output from NVivo, developed themes were finalised. In this list the top five CI advisors are presented in descending order of word frequency.	<p>Consultants CCI MEDEF Gendarmerie Chartered Accountants</p>				

A tree node was developed for 3 of the 5 research themes: terminology, CI advisors, and constraints. The fifth research theme, background factors, was later to be constituted from demographic data reported directly from the questionnaire respondents in the quantitative phase. It should be noted however, that while the perceived attitudes of the SME decision-makers were recorded, the attitudes tested in the questionnaire came from the literature and not directly from the qualitative data. The researcher judged that five attitudes towards CI behaviours emanating from the literature constituted a stronger base than the perceived attitudes reported through the CI programme directors. Nevertheless, through the use of the typologies (Harkleroad, 1996; Rouach & Santi, 2001) in the interviews data on attitudes was reported. This is discussed in the following section.

4.4 Eliciting CI Manifestations via Typologies in a Funded Environment

During the semi-structured interviews the Rouach & Santi (2001) typology was presented to the CCI CI directors. They were asked to identify which type of SME CI profiles they had seen within their CI programmes. In treating each of the Rouach & Santi (2001) types as a node in NVivo, a profile of quotes was developed for each of five SME types. This is reported in Chapter 6. Additionally, CI programme directors were asked to comment on the SME types witnessed in their programmes extending the Ostriches (Harkleroad, 1996) to include Mockingbirds (reactive), Doves (active), Kestrels (strategic) as well as Eagles (pro-active) types. This was effective in identifying potential manifestations for each SME type and any sense of movement from one type to another. The CI directors were quick to pick up the use of bird analogies when relating to SME types.

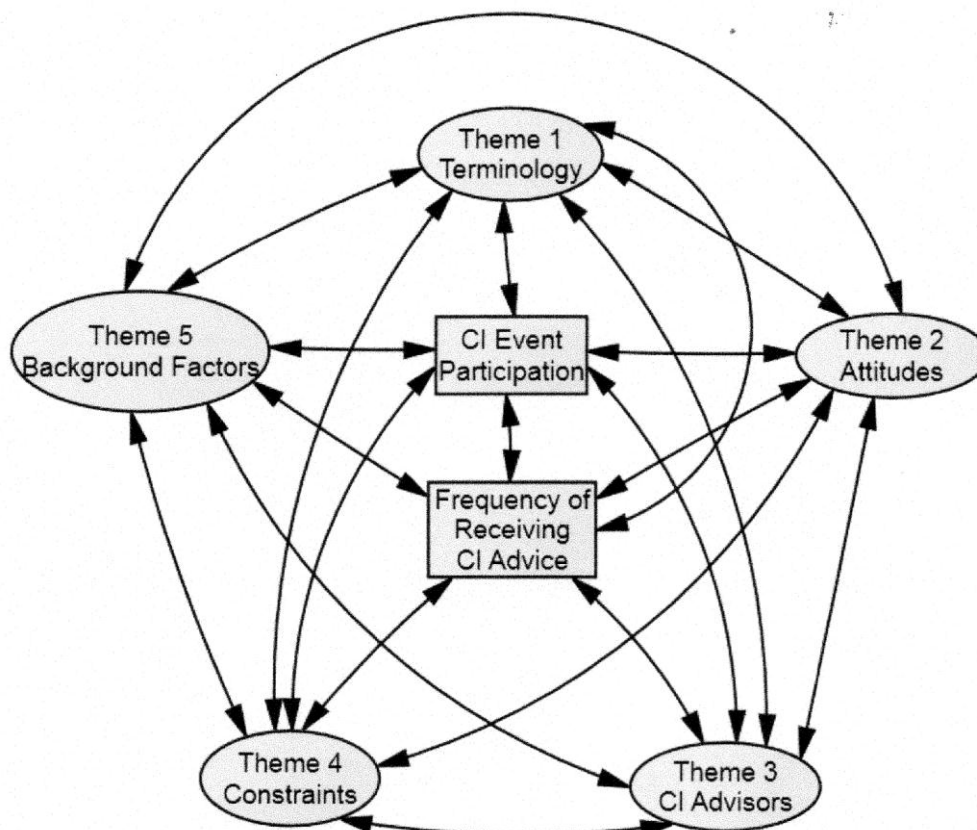
4.5 Purpose Statement for Research Design

The intent of this two-phase, sequential mixed methods study was to explore the behavioural and attitude antecedents of SME decision-makers in a funded environment. The first phase was a qualitative exploration of CI programmes by collecting qualitative data from CI programme directors at French CCI. NVivo was used as a tool to develop 3 of the 5 themes. Findings from this qualitative phase were then used in the quantitative stage to test research questions that relate attitudes, background factors, choice of CI advisor,

terminology, and perceived constraints (independent variables) to two CI practice behaviours: participation in a CCI event and the frequency of receiving CI advice (dependent variables).

The reason for collecting qualitative data initially is that there is little guiding theory and few research instruments for investigating SME CI attitude antecedents in a funded environment. Guided by the structure and Theory of Planned Behaviour the following research design summarises the relationships to be tested in the quantitative stage. Each element will be discussed in relation to the Theory of Planned Behaviour. The model is designed to investigate the relationships between measurable CI practices, attitudes towards those practices, and the antecedents to these attitudes. Figure 4.3 has the two dependent variables, participating in a CI event at the CCI and the frequency of receiving CI advice in the centre of the research model. These two behaviours originated as measurable variables identified in the qualitative stage of the study. Antecedents to these behaviours include the attitudes towards CI practices, the perceived pressure or desire to engage with key referents and the perceived constraints.

Figure 4.3 Research Model for Quantitative Analysis



Through the literature, theory development and qualitative phases of the research 5 themes have emerged. The order of the themes respects the presentation order of the TPB model, noting that terminology is deliberate addition for this study. Terminology is neither explicitly a particular behaviour nor an attitude. It is a manifestation of CI practice and has been built into the research model. The objective is to test terminology relationships with the other elements in the research model which correspond to the TPB model. The numbered order of the themes presented in figure 4.3 is constant throughout the data display in the thesis.

4.6 Research Questions

The research questions which follow have been informed from the research objectives stated in Chapter 2 and their justification in the literature review of Chapter 3. The exploratory qualitative phase had several objectives. First was to learn more about the programmes themselves and the SMEs served. Second was to develop the emerging research themes so that they could be tested in the quantitative stage. Third was to test the Rouach & Santi (2001) CI attitude typology in a funded environment for SMEs. Specifically, the following questions were the basis of the interview.

4.7 Qualitative (First) Stage

The interview guide can be found in Appendix 3 in English and French. The questions asked in the interviews were addressed to the CI programme directors in 14 separate CCIs. The CCI of Rennes had two CI programmes therefore the total number of interviews was 15. The interviews questions were to answer the following qualitative research questions presented in Table 4.2.

Table 4.2 Qualitative Research Questions

Section A: What is the substantive form of the CCI CI programmes?
A1. What constitutes the funded environment of CI public policy for SMEs in France?
A2.1 When did the CCI programme start?
A2.2 How many SMEs have attended the CI programmes?

A3.1 Who is responsible for CI in the SMEs? (CI programme director perspective)
A3.2 Who is responsible for CI in the SMEs? (SME decision-maker perspective)
A4. What type of actions do the CCI take to help SMEs with their CI practices?
A5. What types of firms are targeted in terms of size and sector?
A6. With which other organisations does the CCI collaborate with from either the public or private sectors?
A7. Which organisations have the most credibility for advising on CI practices?
Section B: What is the perceived awareness of CI concepts for the SMEs?
B1.1 What terminology is used by the SMEs to refer to CI practices? (CI programme perspective)
B1.2 What terminology is used by the SMEs to refer to CI practices? (SME decision-maker perspective)
B2. Can the SME decision-makers give a working definition of CI?
B3. What are the constraints which inhibit CI practice by the SMEs?
Section C: What are the Attitudes of the SMEs Towards CI practices?
C1. What SME CI attitude types can be identified according to the Rouach & Santi (2001) typology?
C2. What actions are taken by the CCI to change SME decision-makers' attitudes?
C3. What are the attitudes of the SMEs towards CI practices as perceived by the CI programme directors?

4.8 Quantitative (Second) Phase Questions

Many of these questions were grounded in the responses from the qualitative research phases as discussed previously in this Chapter. They are also shaped by the theoretical framework chosen. The questionnaire used to answer these research questions can be found in Appendix 4 (in English) and in Appendix 5 (in French). Table 4.3 presents the quantitative research questions.

Table 4.3 Quantitative Research Questions

Research Question Theme 1: Terminology
1. Is there a significant relationship between the SME's decision-makers use of terminology and the participation in a CCI CI event?
2. Is there a significant relationship between the SME's decision-makers use of terminology and the frequency of receiving CI advice?
3. Is there a significant relationship between the SME's decision-makers use of terminology and the SME's decision-maker's attitudes towards CI?
4. Is there a significant relationship between the SME's decision-makers use of terminology and the perceived constraints?
5. Do the background factors of age, gender, region, sector, internationalisation, company size, and employee function have a significant relationship with the SME's decision-makers use of terminology?
Research Questions Theme 2: Attitudes
6. Do the SME decision-makers attitudes have a significant relationship with the participation in a CCI CI event?
7. Do the SME decision-makers attitudes have a significant relationship with the frequency of receiving CI advice?
8. Do the SME decision-makers' attitudes have a significant relationship with the perceived CI constraints?
Research Questions Theme 3: CI Advisors
9. Is there a significant relationship between the SME's choice of CI advisor and the participation in a CCI CI event?
10. Is there a significant relationship between the SME's choice of CI advisor and the frequency of receiving CI advice?
11. Is there a significant relationship between the SME's choice of CI advisor and the SME's decision-makers use of terminology?
12. Is there a significant relationship between the SME's choice of CI advisor and the SME's decision-maker's attitudes towards CI?
13. Do the background factors of age, gender, region, sector, internationalisation, company size, and employee function have a significant relationship with the SME's choice of CI advisor?
Research Questions Theme 4: Perceived Constraints

14. Do the perceived constraints have a significant relationship with the participation in a CCI CI event?
15. Do the perceived constraints have a significant relationship with the frequency of receiving CI advice?
16. Is there a significant relationship between the SME's choice of CI advisor and each of the five constraints reported by the SME decision-makers?
Research Questions Theme 5: Background Factors
17. Do the background factors of age, gender, region, sector, internationalisation, company size, and employee function have a significant relationship with the SME's participation in a CCI CI event?
18. Do the background factors of age, gender, region, sector, internationalisation, company size, and employee function have a significant relationship with the frequency of receiving CI advice?
19. Do the background factors of age, gender, region, sector, internationalisation, company size, and employee function have a significant relationship with the SME's decision-maker's attitudes towards CI?
20. Do the background factors of age, gender, region, sector, internationalisation, company size, and employee function have a significant relationship with the SME's perceived constraints?

4.9 The Sample Frame

The CCI represented the population for the qualitative stage of the research. Only those CCIs which had an active CI programme for at least one year were included. Programmes younger than this were considered to lack experience, examples, and insight. The CCIs had different starting dates. It was considered unreasonable to include a programme which had been running for seven years to one that had just started. CI programmes constitute the sample frame. The exact number of CCIs with established CI programmes was unknown and most likely varied due to any number of administrative and policy issues. This research does not claim to have interviewed all CI programme directors at CCI in France. For example, despite repeated attempts to interview the CI director at the Essone CCI, due

to the maternity leave of the director and other administrative issues, no contact was achieved.

The sampling methods used were purposive and snowballing. Purposive sampling enables the researcher to build a sample frame around a specific subject matter (Denscombe, 2007). Riley *et al* (2003) considered that sample units which provide information about themselves and about other units (snowball sampling) an effective social science method to identify suitable respondents.

4.10 The Semi Structured Interviews

The interviews took place between December 2008 and August 2009. Eleven of the interviews were face-to-face and four were by telephone. The interview itself addressed the CCI employee responsible for the Competitive Intelligence programme. That is, the person who worked directly with the SME managers. The CI programme directors were chosen as they have unique competences and experiences in working with SMEs in a CI context. The interviews were conducted in French, recorded, transcribed, with the analysis conducted with the data in French language. Gilmore *et al* (2001) argued for a phenomenological approach to SME research with an emphasis on explanation and not prediction. A qualitative approach provides insight into the issue being explored (Creswell, 2007) illuminating the rich data found in local contexts (Johnson & Onwuegbuzie, 2004). CI itself has been defined as both art and science (Calof & Skinner 1998) and, essentially, being qualitative in nature (McGonagle & Vella, 2002). Interviewing can be focused on meanings and frameworks as well as events and processes (Rubin & Rubin, 2005), all of which were captured in this evaluation research.

The transcripts uploaded into NVivo for coding and analysis were in French language. Translation into English was conducted at the write up stage. The face to face interviews took place at the CCI facilities and each interview lasted between one and a half hours and two and a half hours. The transcripts had between 5200 and 7500 words each.

4.11 Piloting

Semi-structured Interview Question Development Process

1. Literature Review

The literature review identified the CCI as a key player in the funded environment of CI public policies in France. The Theory of Planned Behaviour surfaced as a well-established theoretical framework which could guide research design. CI typologies from Harkleroad (1996, 1998) and Rouach & Santi (2001) had been identified as a research instrument to entice insight and commentary from the interviewees. CI terminology was often reported as an obstacle in both practicing and academic spheres.

2. Development of research design

The CI programmes in France are relatively young and no academic literature in English had been published on their nature, content, effectiveness or goals. Even in French language little has been published on CCI CI programmes. The research design therefore had an exploratory character to examine these programmes in a general sense. Moreover, as key informants focused specifically on SME CI practices, the programme directors were considered well positioned to report on SME constraints, attitudes and use of terminology. As discussed earlier, the processing of the interview transcripts through NVivo developed specific factors for each of the themes.

3. Development of research questions

The research questions were predominantly driven by the above points identified in the literature review, enriched by the qualitative interviews and finally fully developed by using NVivo software. The overall framework of the research questions was shaped by the Theory of Planned Behaviour.

4. First pilot

The first pilot interview was with the CCI CI programme director in Lyon. This person directs the Competitive Intelligence programmes for a whole region (Rhône-Alpes) which includes 12 Chambers of Commerce and Industry. Piloting was

clearly necessary. Additional questions were added, as well as prompts, to lead in or deepen exploration.

5. Back translation

The piloting and final data collection was conducted in French language. To communicate with the PhD supervisors an English version was required. A back translation was conducted in the following manner. An English version was translated into French by a native speaking French academic. This French version was then translated into English by another individual, whose native language was English. The first and the second versions were examined by the researcher to identify grammatical, lexical, conative and equivalence issues, notably in regard to false friends which exist between French and English. Several points were re-edited.

6. Feedback from supervisors

Both the first and second supervisors reviewed the draft interview questions. It was recommended that the Rouach & Santi (2001) typology be handed to the CI directors so that they could comment directly on the types of SMEs they observe. Some clarity and minor corrections were also suggested as well as ideas on prompts to use when following up on an interview question response.

7. Second pilot

The second pilot was also with a regional Chamber, Rennes, with Fanny Dufour, who has a degree in CI and has played a central role in running the Rennes CI programme for over two years. No significant changes were made from this pilot but it did allow the researcher to improve confidence, to practice asking the questions, and overall to develop an interview technique. For example, some new prompts surfaced from this interview, which were to be used in subsequent interviews.

8. Final minor amendments with researcher's discretion

After very minor changes to punctuation and articles, the final French version was ready for use.

4.12 Quantitative Stage: Questionnaire Development Process

1. Grounding questions based on the CCI interviews

It was from the CI director interviews that 3 of the 5 research themes of CI advisors, terminology, and constraints were developed. As stated, the use of NVivo software facilitated this process. Moreover, behaviours, such as participating in a CCI CI event and the frequency of receiving CI advice were ideas which surfaced from the qualitative interviews.

2. Five attitudes towards CI practices

A fourth theme, attitudes, was identified from the literature review specifically from published empirical SME CI research.

3. A fifth theme, background factors, was developed based on the demographic variables of the respondents (age, gender, and function) and descriptors of the SMEs (sector, size, region and internationalisation).

4. Feedback from supervisors

The supervisors reviewed the English version making suggestions on scaling and question sequencing.

5. Translation

A back translation was constructed following the same procedures as the interview questionnaire guide described above.

6. Two pilots with SME managers

The first pilot was face to face with a colleague who has worked extensively in an SME with managerial experience. Feedback concerned not only word choice, grammar, and punctuation but also suggested question additions and removal due to overlap. The second pilot was with a practising SME owner-manager. The company is called Soppec, based in Picardi, manufacturing and distributing spray paint for industrial use. This company was chosen as it is an SME (80 employees) and the company competes internationally in a highly competitive market. The fact that the company was not in the targeted regions was not considered to be significant, and like the automobile and telecomm sectors, there was an element of manufacturing, technology, and marketing. The pilot took place on the phone with both researcher and respondent following the questionnaire online. This resulted in a very thorough review of the questionnaire and excellent communication between the researcher and the pilot interviewee. As with the first pilot interviewee, changes were made in terms of vocabulary.

7. Opinion from a CCI CI director on word choice

The opinion of a CCI CI programme director was sought. The CI programme directors communicate daily with SMEs and therefore have unique insight on word choice and its appropriateness for the target audience. Some final changes were made in reference to synonyms and tone of voice.

8. Redrafting and transfer to online panel

The final version was sent to ‘*Creatests*’ based in Lille, France. This marketing research company hosts an SME decision-maker panel. Once *Creatests* had transposed the questionnaire to its final online version the researcher reviewed the questionnaire line by line. *Creatests* added the postal code of each respondent, their date of birth and their gender.

4.13 Determining Validity: Quantitative Stage

The questionnaire comprised 21 items. A panel which included SME managers was accessed online for the data collection (*Creatests*, Lille, France; www.creatests.com).

Createst has put in place the following procedures to enhance validity:

- Verification of the coherence between responses
- Exclusion of respondents who take an excessive amount of time to respond
- Verification of the seriousness of responses to open questions
- Removal of respondents who answer more than once
- All initial respondents are awarded a 10/10 rating as panellists. When response behaviour does not meet the above standards the rating is lowered. All respondents with ratings below 10 are excluded from future studies for a specific duration.

Random mixed ordering of the online questionnaire items was used to remove any order bias. Primacy, that is, the tendency to respond to early order of self-response items without giving thought to other items, can be a problem in visually delivered questionnaires (Bowling, 2005). The French database *Diane* was used to identify the sectors of Automobile and Telecoms (NAF codes 29 and 61 respectively). Table 4.4 overleaf summarises the registered companies for the population which, using Boolean logic, narrowed down the number of companies to the sector, size and region concerned in France.

Table 4.4 Sample and Population (source: database *Diane*)

No. of companies with a normal legal status in France	1,346,783
In the brackets 10 to 249 employees	174,145
NAF Codes 29 (Auto) and 61 (Telecom)	3, 875
Regions: Ile de France & Rhone-Alpes	356

The total population for the study is 356 SMEs. The margin of error for a sample size of 176 is 5.26%, which was considered reasonable given the exploratory nature of the study. The resulting margin of error of 5.26%, with a confidence level of 95%, means data would be within a 5.26% band above or below the percentage reported in 95 of 100 surveys. The sample size of 176 is a consequence of budgetary constraints. The researcher had to pay for access to the panel. This sample size, while very acceptable, was at the upper limit regarding available resources.

This Chapter has provided a link between the gaps in the literature from the previous Chapter and the methodology in the next Chapter. The piloting process has resulted in two research instruments designed to collect data from the two respective samples of CI programme directors and SME decision-makers. Chapter 5 will discuss why certain courses of action were taken in terms of methodology and why others were not taken.

CHAPTER 5: Methodology

5.1 Introduction

After stating the central research problem the research methodology is presented as 4 inter-related levels. Starting with methodologies, the researcher examines the general approach of scientific enquiry, including world view and specific preferences. This has also been referred to as research methodology (Creswell & Miller, 1997) and belief system (Guba & Lincoln, 1989). Second, a paradigm approach is taken, investigating and positioning the research in terms of constructivism, pragmatism, and post positivism. The philosophical underpinnings of each are also elucidated. Third, the procedures for gathering, organising and analysing data, in a word “methods” are presented along a spectrum of quantitative, qualitative, and mixed methods approaches. It is recognised that mixed methods is both a methodology and a method (Creswell *et al*, 2006). The final level, analysis, is presented to justify the scrutiny and testing of data while respecting established realities and philosophies within the chosen mixed methods approach. The overall goal of this section is to justify and position the research design taking into account the historical development and recent debates of research methodology.

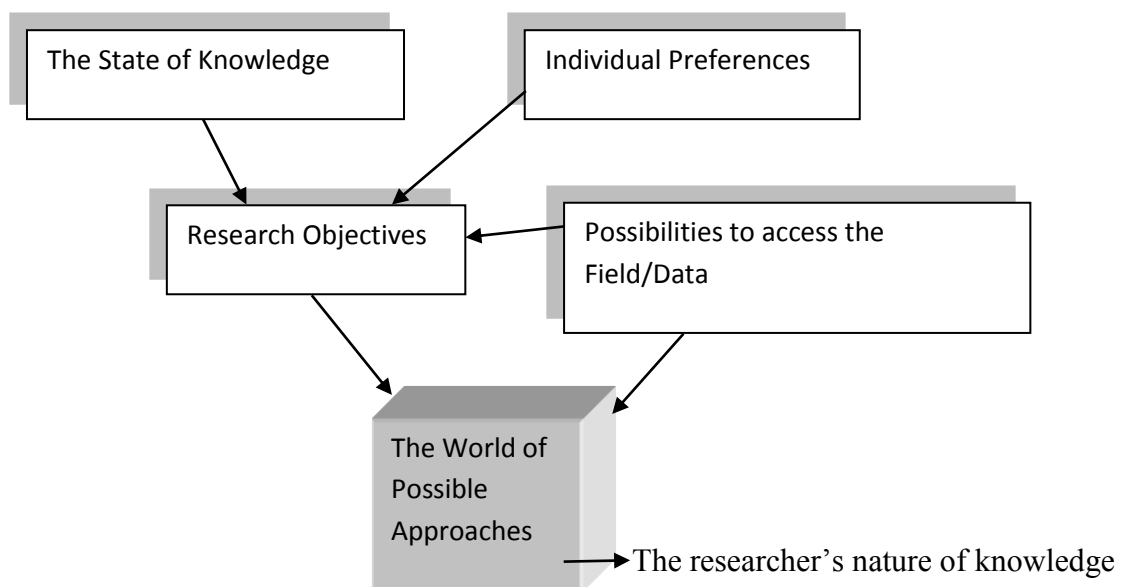
5.2 Declaration of the Central Research Problem

The overarching research problem is to identify the antecedents to SME CI practice (behaviours) and attitudes within a funded environment in France. To this end, the first qualitative phase was to investigate the nature, players, form, and practices as to what constitutes a funded environment. The second phase was to identify the significant relationships between the antecedents, notably SME decision-maker attitudes, CI advisors, and perceived constraints. The broader objective is to evaluate the effectiveness of CI as a public policy for SMEs and to identify manifestations of CI practice that can facilitate future programmes and future research.

5.3 The Inter-relation of Methodologies and Paradigms

Scientific research paradigms provide a ‘world view’ or ‘set of linked assumptions’ for a group of scientists studying a shared subject (Deshpande, 1983; Healy & Perry, 2000). A research paradigm however, is more than the philosophy underlying the methodology. In addition it constitutes the ontology (the nature of reality) (Healy & Perry, 2000) and the epistemology (nature of knowledge) (Guba & Lincoln, 1994; Sobh & Perry, 2005). There are many drivers which shape research design and research methodology. Wacheux (1996) proposes a framework whereby the determinants of epistemological positioning are identified in relation to the researcher. The state of knowledge is the starting point and the literature review is the process to investigate what this represents at the time of the study. Individual researchers bring personal preferences to research in terms of their own personality, experience, and ambitions. These two factors jointly lead to research objectives. It is conditioned however by data access and resource availability. The possible approaches ultimately constitute a researchers ‘nature of knowledge’. Wacheux (1996) identifies personal preferences, whereas in reality, in a PhD study, supervisor and university preferences are also determinants of research objectives. The access to field data is discussed later in this chapter. Figure 5.1 presents Wacheux’s epistemological positioning.

Figure 5.1 Epistemological Positioning (Wacheux, 1996)



5.4 Research Paradigms

A logical starting point would be a discussion of the two dominant research paradigms of positivism and constructivism. These philosophies have a fundamental influence on purpose and approach of business research (Adcroft & Willis, 2008). It should be stated from the outset that debates on social science paradigms have been on-going for hundreds of years and no categorical conclusions have yet been drawn. Positivism is perhaps the most mature of paradigms (Guba & Lincoln, 1994) but its position in the wider epistemology debate remains in a formative phase. Positivism is the most widely used paradigm (Orlikowski & Baroudi, 1991; Healy & Perry, 2000). The positivist researchers quantitatively measure real facts and investigate cause and effect. Philosophically speaking, they detach themselves from the world of study so that they can measure objectively, without imposing themselves on their findings. In their objectivity there is a one direction perspective whereby the assumption is that data does not change because it is being observed. Guba & Lincoln, (1994, pp 110), called this “a one way mirror”. The assumed outcomes of the positivist approach are findings which are generalizable, true, and have a predictive function.

The ‘scientific’ approach that positivism espouses inevitably leads to an emphasis on reliability. In other words, statistical methods can show if the researchers are measuring phenomena consistently. However, when researching complex social sciences such as Competitive Intelligence, treating respondents as independent non-reflective beings is most likely a falsehood. This is corroborated by Healy & Perry, (2000, pp 119) who stated “*a positivism view is inappropriate when approaching a social science phenomenon like marketing networks which involve humans and their real-life experiences*”. Furthermore, the positivism paradigm does not necessarily cater to the discovery dimensions of inquiry (Deshpande, 1983; Guba & Lincoln, 1994) and therefore is weak on theory generation. Sobh & Perry (2005) argue that positivism as a predominant paradigm in marketing and similar social sciences has had disappointing results.

Post-positivists have been trying to amend criticisms of positivism for some time. Popper (1959) postulated ‘falsification’ whereby while absolute truths cannot be found it is possible to reject false beliefs. In ontological terms, Popper identified a ‘third world’ that

was neither positivist (objective) nor critical theory and constructivism (subjective). This 'third world' is described by Healy & Perry, (2000, pp 120) as "*related to realism and consists of abstract things that are born of people's minds but exist independently of any one person*". Another influential post-positivist, Kuhn (1962), proposed entire 'paradigm shifts' to account for evidence and not only individual theories. That is to say, scientific revolutions are noncumulative. New paradigms emerge to replace or complement old ones and competing paradigms can exist simultaneously (Teddlie & Tashakkori, 2009). More recent 'paradigm wars' have not exhausted the question of what should be the epistemological and methodological foundation for marketing. Kavanagh (1994) identified Hunt and Anderson as two academic leaders in terms of output on this debate. Taking an ontological approach Kavanagh (1994) presented the debate in terms of territory, theology and technology, with the goal of refocusing debate rather than ending it. What can be stated unequivocally about research output in marketing is that it remains predominantly quantitative, and therefore positivist. Hanson & Grimmer (2007) concluded after an extensive study that quantitative research was dominant in major marketing journals. It is noteworthy that post-positivism is considered a better term for quantitative research than positivism for today's practicing researchers (Phillips & Burbules, 2000).

Constructivists as opposed to positivist or indeed post-positivist researchers can claim to believe in multiple even contradictory realities (Creswell, 2007; Onwuegbuzie *et al*, 2009). This paradigm emerged in the 1970s and 1980s (Denzin & Lincoln, 1994). In this paradigm people 'construct' the world and therefore they should be the focus of investigation (Sobh & Perry, 2005). A synonym of constructivism, interpretive research (Creswell, 2007), is so named as researchers interpret what they find knowing full well that their own background and experiences will shape their findings. Reality is linked to place and situation (Creswell & Miller, 2000). While this intimate sharing of multiple realities may explore individual views of the world, it is unlikely to contribute much to the wider phenomena of influence drivers on CI. A picture of many players making collective transactions in a market is needed. Moreover, constructivists do not believe in distinguishing cause from effects (Teddlie & Tashakkori, 2009). This study is investigating the roles (cause) of influence drivers on CI (effects).

A third research paradigm, pragmatism, has been proposed as the philosophical partner of mixed methods research (Johnson & Onwuegbuzie, 2004). In other words, research

methods should be combined in ways to answer research questions effectively (workable solutions) as opposed to defending dogmas or taking positions on traditional dualisms. The roots of this philosophy go back at least a hundred years with Peirce (1878), James (1907) and Dewey (1920) all guided by the principle that dualistic disputes are interminable and the real questions should address consequences and what next issues. The following synthesis of pragmatist philosophy advantages and disadvantages can help researchers position their approach. Johnson & Onwuegbuzie (2004) cautioned researchers to avoid or at least mitigate the potential weaknesses of pragmatism. Denscombe (2008) also cautioned researchers not to use pragmatism for expediency. Table 5.1 presents pragmatism as an alternative in a social science research.

**Table 5.1 A Pragmatic Alternative to the Key Issues in Social Science Research
(Morgan, 2007)**

Key Issues	Qualitative Approach	Quantitative Approach	Pragmatic Approach
Connection of theory and data	Induction	Deduction	<u>Abduction</u>
Relationship to research process	Subjectivity	Objectivity	Inter-subjectivity
Inference from data	Context	Generality	Transferability

In examining the implications of combining qualitative and quantitative methods Morgan (2007) stated that in practice researchers never operate in one direction when moving between data and theory. As Morgan (2007, pp 72) put it “*abductive reasoning moves back and forth between induction and deduction first converting observations into theories and then assessing those theories through action*”. The process of abduction in this study is fully documented in section 5.5.

The same logic applies to both subjectivity and objectivity: in practice researchers pass from one to the other which is named inter-subjectivity. Transferability refers to investigating the factors which would permit or obstruct the findings being transferable to other settings. Deduction, which is making logical correct conclusions from an argument, does not necessarily have to involve empirical data (Downward & Mearman, 2006). Nevertheless, this reasoning works best in closed systems, value free, which is seldom the

case in a CI context (Fleisher & Wright, 2008). Table 5.2 compares and contrasts positivist, pragmatist, and constructivist paradigms. The weaknesses to consider when using pragmatism (Johnson & Onwuegbuzie, 2004) include:

- Pragmatism may promote incremental change rather than more fundamental change, structural, or revolutionary change in society.
- What is meant by usefulness or workable can be vague unless explicitly addressed by a researcher.
- Pragmatic theories of truth have difficulty dealing with the cases of *useful but not true* beliefs or propositions and *non-useful but true* beliefs or propositions.

**Table 5.2 The Characteristics of Positivism, Pragmatism and Constructivism
(Johnson & Onwuegbuzie, 2004)**

Characteristic	Positivist	Pragmatist	Constructivist
Endorses fallibilism (current beliefs and conclusions are rarely if ever perfect, absolute)	No	Yes	Yes
Endorses eclecticism (different, even conflicting theories, can be useful)	No	Yes	Yes
Endorses reductionism (Reducing culture, thoughts and beliefs to nothing more than neurobiological processes)	No	No	Yes
Endorses dualisms (only one way is the right way)	Yes	No	Yes
Endorses a values oriented approach	No	Yes	Yes
Endorses truth as provisional (meaning and knowledge change over time)	No	Yes	Yes
Endorses multiple realities	No	Yes	Yes
Endorses inter-actionalism (research reflects social relationships which are inherently subjective, Downward & Mearman, 2006)	No	Yes	Yes

5.5 The Process of Abduction in a QUAL-QUAN Design

Abductive reasoning within the pragmatic paradigm as discussed earlier in this Chapter is quite typical with mixed method researchers who combine methods sequentially (Ivankova, Creswell, & Stick, 2006; Morgan, 1998; 2006). This is where inductive results

from qualitative research are used to develop a deductive method in quantitative approach, or vice versa. The underlying thesis is that researchers constantly move back and forth between inductive and deductive reasoning, or to put it in other words, between data and theory, one informing the other in iterative cycles. Table 5.3 illustrates how the process of abductive reasoning has informed and developed the qualitative and quantitative data collection. The development of Theme 3, CI advisors, is presented as an example. The same process was used to develop Theme 1, terminology and Theme 4, perceived constraints. Theme 2, attitudes, came from the literature as described earlier in Chapter 4. Theme 5, background factors, emerged from the context of the research and the demographic data collected by the questionnaire.

Table 5.3 The Process of Abductive Reasoning

Data Type	Data Description	Abductive Reasoning	Theory
QUAL			SME attitudes to CI can be changed by CI advisors (Subjective norms influence attitudes, TPB)
QUAL	Interview Transcripts		CI advisors can be identified in a funded environment
QUAL	An array of current SME CI advisors in a funded environment		Choice of CI advisor has a statistically significant relationship with attitudes to CI behaviours.
QUAN	Statistical data set from questionnaire		Confirmation that relationships exist or not

Bryman (2008) stated that inductive and deductive reasoning are rarely as linear and pure as is often suggested. That is to say that an element of induction often exists in a deductive study and vice versa. In this study however, there is an iterative to and throw between data and theory that neither an inductive nor a deductive positioning persuasively captures the research process. In a similar vein, *grounded theory*, has created controversy in terms of

what it is (Charmez, 2000; Bryman, 2008) and in how fully or partially it is being used (Locke, 1996; Bryman, 2008). In view that grounded theory is generally considered to be generating theory out of data it was not considered an appropriate descriptor for this research study.

A purely inductive reasoning approach, which was not taken, would have started with data collection and finished with a theory proposition. Using the Theory of Planned Behaviour as a guiding theoretical framework for research design and data interpretation has anchored the study in an established structure, and as such is defended. Nevertheless, qualitative data has developed the research themes and facilitated the structure of hypothesis, or research questions, which is in fact an inductive approach. Only abduction captures the reality of how theory and data have been related to each other. This abductive reasoning is consistent with the pragmatic paradigm (Morgan, 2007) and the research objectives of this thesis.

5.6 Positioning the Research on a Quantitative – Qualitative Spectrum

One approach to position a research philosophy is to conceptualise options on a quantitative to qualitative spectrum, which can be termed as positivist-constructivist paradigms. Table 5.4 overleaf is a self-evaluation by the researcher as to where choices are made on the constructivist – positivist spectrum, with the pragmatist paradigm situated between the two. The goal in mapping this is to communicate the thought processes of the researcher in regard to fundamental beliefs, research obligations and the aligned recommended methods. This self-evaluation on the positivist to constructivist continuum, with pragmatism nestled between the two, has permitted the researcher to conceptualise and position specific actions.

In terms of fundamental beliefs the quantitative research largely accepts that there is an external and objective world where the observer is independent. Specifically, the hypothesis that attitudes and behaviours are linked and this can be proven mathematically irrespective of the researcher's values. Concerning the quantitative interviews, there is a belief that CI programme directors can share subjective views on their socially constructed world with SMEs. As interviewer, as questioner, the researcher is an integral part of these

Table 5.4 Positioning the Research in the Pragmatist Paradigm
Adapted from Usunier J.-C., Easterby-Smith M. & Thorpe R. (1993)

	Positivist Paradigm	Pragmatist Paradigm (self eval.) ○ — Qual. □ — Quant.	Constructivist Paradigm
Fundamental Beliefs	<p>There is an external and objective world</p> <p>The observer is independent</p> <p>Science is independent and separate from values</p>		<p>There is a socially constructed and subjective world</p> <p>The observer is an integral part of what is observed</p> <p>Science is driven by human interests</p>
The Researcher Must	<p>Focus on the facts</p> <p>Research the causality links</p> <p>Reduce the phenomena to their most simple elements</p> <p>Formulate hypotheses and test them</p>		<p>Focus on the sense</p> <p>Try to understand the phenomena which are produced</p> <p>Observe each situation in its totality</p> <p>Develop ideas from induction and data</p>
The Recommended Methods Include	<p>Construction of the concept so that it can be measured</p> <p>Use of large samples</p>		<p>Use multiple methods to establish different perspectives of the same phenomena</p> <p>Use of small samples</p>

observations. For the questionnaire, science is independent of the researcher's values; for the interviews, science is driven by human interests.

In the positivist (or post-positivist) world the questionnaire focuses on the facts that SME decision-makers report. The causality links between SME attitudes, CI advisors, CI terminology and behaviours are the focus. These phenomena are reduced to their simplest elements. Hypotheses are formulated and tested. In the qualitative research the focus is on the sense, and the sense making of the interviewees to try to understand the context in which the phenomena are produced. Each interviewee for each programme is viewed in its entirety without attempts of simplification. An inductive approach surfaces ideas and theory from the data.

The quantitative research includes methods which construct a research model to measure concepts. The sample size was 176. Within the constructivist paradigm multiple methods are used to establish different perspectives on assisting SMEs with their CI practices. This includes describing programmes, giving examples of types of companies, sharing opinions, positioning SMEs on a typology and telling anecdotes. The sample size was 15. Neither approach is inherently superior to the other for the researcher. The goal is to provide a more complete picture by combining perspectives and information from complementary data sources. There are multiple realities which include both subjective and objective knowledge. The continuum also allows the researcher to express a degree of positioning within the pragmatic paradigm. For example, that science is independent and separate from values is not a strong belief for the researcher. Similarly the researcher does not take an extreme view that science is driven by human interests alone. Thus the two positions, while different, are presented as being closer on the continuum.

5.7 The Strengths and Weaknesses of Quantitative Research

Quantitative research essentially involves the collection, analysis, interpretation and illustration of numerical data (Teddle & Tashakkori, 2009). The advantages and disadvantages are weighed in regard to this study.

First, testing and validating established theories has an explanatory role. Attitudes and awareness, the areas of investigation for this study, are inaccessible to direct observation. It

is the inferred responses that are measurable (Ajzen, 2005). This will allow research question testing within the chosen samples and generalisation within the scope of sector and region stipulated. Building on this logic, research findings can be more widely generalised when they have been repeated on many populations and subpopulations, and more importantly, may have predictive value. The integration of quantitative methods into this study also permits the elimination of confluence which may arise when there are many variables. For example, significant relationships can be measured between use of different terminology and background factors, or the participation in a CCI CI event and the degree of internationalisation. Once sample frame issues and questionnaire design are finalised, the actual data collection is relatively quick. The interviews (qualitative research), took over 6 months to schedule and conclude, in contrast. The results from the quantitative study are relatively more independent of the researcher than can be said for the qualitative. There may be an argument that quantitative findings have more credibility with decision makers in funding and government.

The weaknesses of quantitative research include the possible mismatch between the researcher's categories and those of the local constituents. This is particularly sensitive point as this study is specifically about reporting the constituents' attitudes towards CI concepts. Additionally, the researcher's theories may not reflect the local constituents' understandings. There is also a danger in quantitative research to ignore phenomena occurring as the focus is on theory testing rather than theory generation. The exploratory nature of this thesis does however mitigate this point to some degree. The results of quantitative studies may be too abstract for direct application to local contexts and individuals. In light of this potential weakness this study has attempted to maintain an applied context, reporting findings back to constituents, and participating actively in research forums whether academic or practitioner in nature.

5.8 Qualitative Research

Qualitative research operates within three different concepts of what constitutes reality, namely, constructivism, critical theory and realism (Healy & Perry, 2000). Grounded theory, where the researcher builds a premise based on patterns discovered in data is constructivist. Here, the research is 'isolated' from outside influences and specific

‘realities’ are constructed. Critical theory emphasises ‘virtual reality’ shaped by social forces which form over time. The researcher engages in logical dialogue with participants to change the social world. Realism assumes that the reality is real (as with the positivists) but it is only imperfectly apprehensible. Case research, in-depth interviews and focus groups are all methodologies which follow this realism and so it is very relevant for this study.

At the methodological level qualitative research has come under three recurring criticisms: there is a lack of methodological rigour, there are no adequate software programmes to manage large data sets, and there are no or very few developments in methodology (Mayrhofer, 2009). The author that proposes these ‘misunderstandings’ goes on to dispel each in turn conveying perhaps a turning point in attitudes. Ganesh *et al* (2003) called for more qualitative research in CI to capture context and process aspects that cannot be attained from surveys.

5.9 The Strengths and Weaknesses of Qualitative Research

The qualitative research advantage of presenting data based on participants’ own categories of meaning is particularly pertinent in this study. In choosing CCI CI directors as key informants with unique field experience and unique qualifications, it is indeed their categories of meaning which count. There are not that many key informants with this profile so the appropriateness for studying a small number of cases in depth is persuasive. CI as public policy in the sphere of SMEs in France is indeed complex and fits the strengths emanating from qualitative research. At the same time, individual case information and insight is elicited, providing context and reference. The personal experiences of the CCI CI directors can be recorded, providing insight into innovative and unique practices not only in rich detail but also in local context. Qualitative research approaches also have the benefit of providing insight into dynamic, sequential patterns and change. These CI programmes are on-going, each with their own unique history, personalities and context. In-depth interviews, as qualitative research can permit grounded theory to generate a tentative but explanatory theory about phenomena. As participants, the CCI CI directors can help interpret constructs, whether they are terminology, constraints or other examples. The data can be collected in the naturalistic setting of the CCI CI

directors' offices where they can be responsive to local situations, conditions and other stakeholders' needs. Additionally, qualitative studies can record and respond to events and changes which occur during the study, whether that is the assistance with setting up a CI system in an SME or some other example. Most notably, qualitative research collects data presented in the words and categories of participants and therefore assists in the exploration of how and why phenomena occur. Finally, qualitative research allows the examination of specific events, such as a training session, or a specific case, such as an SME attitude towards certain practices.

The factors which generate the above strengths can also lead to disadvantages. The depth and relevance of case findings means that they may not be generalised to other people or other settings. Predictions are very difficult to construct and both theories and hypothesis are hard to test. Data collection in qualitative research is time consuming. This can and does create strains within research projects. Equally, the data analysis takes more time than in quantitative research. Finally, the results are more easily influenced by the researcher's personality, biases and idiosyncrasies.

5.10 Mixed Methods

While some researchers stay with either quantitative or qualitative research methods, others consider that using both may sometimes be appropriate. That said, there is no one way or even right way that methods can be mixed. Johnson and Onwuegbuzie (2004, pp 17) defined mixed methods as “*the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study*”. This state of affairs has however led to an abundance of terminology and typologies to describe mixed method approaches (Niglas, 2008). Table 5.5, presented on the following page, takes an inventory of labels for pure method and mixed method approaches.

Table 5.5 Classifications of Labels for Pure and Mixed Methods (Niglas, 2008)

Note: grey shaded areas indicate non-relevance for this study

Proposed classifications	Pure designs	Combined or Mixed Designs	
	Purely quantitative or purely qualitative designs (may involve the use of several data sources and/or data-gathering instruments from the same approach).	Designs where both quantitative and qualitative approaches are used, but they remain relatively independent until the interpretation stage.	Designs where elements of quantitative and qualitative approaches are combined in various ways within various stages of the study.
Creswell & Plano Clark, 2007	Quantitative study; Qualitative study; (studies in grey areas)	Triangulation design; Explanatory design; Exploratory design	Embedded design
Tashakkori & Teddlie, 1998	Monomethod studies	Mixed method studies	Mixed model studies
Creswell, 1995	Quantitative study; Qualitative study	Two phase design; Dominant-less Dominant designs	Mixed methodology design
Brewer & Hunter, 1989	Monomethod studies	Multi-method studies	Composite method studies
Bryman, 1988	Quantitative study; Qualitative study	Ten different ways of integration	Methodological hybrids
Mark & Shortland, 1987	Quantitative study; Qualitative study	Triangulation*; Bracketing model*; Complementary multiplism (more than one admissible interpretation of an object or observation)	
Patton, 1980	Quantitative study; Qualitative study	Triangulation	Mixed methodology design
*These models can be used within the purely quantitative or qualitative studies as well.			

5.11 The Strengths and Weaknesses of Mixed Methods

Quantitative and qualitative research methods are not mutually exclusive (Niglas, 2008). The combination of methods however, implies both advantages and disadvantages for the researcher. First, a researcher can approach more numerous research questions, have a broader scope, and can make up for deficiencies in one method by using another. All of these points are relevant for this study. Mixed methods can elicit insight that might be overlooked by a mono-method and can produce more complete knowledge contributions to theory and practice. To put it another way, Adcroft & Willis (2008 pp 317) stated “*Mixed methods is crucial because it can ferment debate and argument, a crucial catalyst in the knowledge production process*”. For example, mixed methods in this study allow the comparison of the verbal enunciation of attitudes with quantified scaled measurements. More conclusive evidence can be accumulated through convergence and confirmation which might result in increased generalisability.

On the practical level mixed methods proposes some disadvantages for the researcher. Multiple methods have to be learned (as well as how to mix them). It is more time consuming and expensive. In practice this has meant reaching a proficiency level in both NVivo software and XLstat programmes. Meanwhile methodological purists continue to assert that one should always work within one paradigm. The mixing of paradigms is unfinished business in the academic world and as Table 4.4 has illustrated there is little consensus on terminology. Nevertheless, recent work by Tashakkori (2010) acknowledges the identity and progress of the mixed method community and Denzin (2010, pp 420) recognizes that the “*the mixed-multiple emergent discourse is bold, innovative, energizing and disruptive*”. For many researchers the mixed method paradigm has emerged (Teddle & Tashakkori, 2009; Denscombe, 2008).

5.12 Causal Effects

Whereas quantitative oriented researchers emphasise their superiority in establishing causal effects (whether X caused Y), qualitative researchers claim to be better armed to investigate causal mechanisms (how did X cause Y) (Teddle & Tashakkori, 2009). A skilled mixed method researcher can address both causal effects and causal mechanisms.

The tests of significance between variables in this study will identify relationships that exist or not but they will not show cause and effect. The theory of planned behaviour will assist in inferring causal direction, linking behaviours to attitudes, subjective norms and perceived behavioural control.

5.13 The Role of Analysis in Mixed Method Research

The goal here is to review the theoretical underpinnings of analysis in mixed methods and propose a working framework. The data analysis itself and the justification of analytical methods used are presented in chapter 5 under findings. Purists will claim that mono-methods should not be mixed (Johnson & Onwuegbuzie, 2004; Cameron, 2009).

However, this non-compatibility claim has been challenged (Teddlie & Tashakkori (2009) in part due to the progress in integrating mixed methods into research projects. A good place to start would be reviewing a typology by Green *et al* (1989) proposing five mixed research purposes. These are briefly defined in Table 5.6, where a third column has been added to discuss relevance for this study.

Table 5.6 A Typology of Mixed Research Purposes for this Study (Green *et al*, 1989)

Research Purpose	Description	Application to this Study
Triangulation	Looking for convergence when comparing results from quantitative and qualitative data.	Commonality between CI directors (qual) and SME decision-makers (quant) perspectives examined.
Complementarity	Looking for elaboration, illustration, enhancement and clarification of the results when comparing findings from one method with another.	The qualitative results can deepen and extend the quantitative and vice versa.
Development	Using results from one method to develop another.	Questionnaire development partly grounded in CCI interview findings
Initiation	Discovering contradiction and paradox leading to new research questions.	CI programme directors suggest SMEs are hostile to the term CI whereas SME decision-makers are either neutral to or accommodating.
Expansion	Enlarging the breadth of the study by using different methods at different stages.	The quantitative survey enlarged the sample frame to include SME decision-makers.

While this study does not exclude any one of these purposes the emphasis is on development. Onwuegbuzie *et al* (2009) proposed that if the purpose of mixed research is development then concurrent and sequential mixed analysis should be used. In reviewing mixed method research output, Molina-Azorin (2009) found that development (referred to as facilitation) was the main purpose of mixed research. This will guide the researcher in choosing which method is dominant and the sequence of the analysis. Table 5.7 summarises mixed method research designs in terms of dominance and sequence.

Table 5.7 Mixed Method Research Designs

Paradigm Emphasis Decision	Concurrent	Sequential
Equal Status	QUAL + QUAN	<div>QUAL \Rightarrow QUAN</div> <div>QUAN \Rightarrow QUAL</div>
Dominant Status	QUAL + quan QUAN + qual	QUAL \Rightarrow quan qual \Rightarrow QUAN QUAN \Rightarrow qual Quan \Rightarrow QUAL

In Table 5.7 QUAL = qualitative and QUAN = quantitative. Capital letters signify higher priority and lower case letters signify lower priority. In this research study qualitative and quantitative approaches are on equal status. Qualitative research is undertaken first, followed by quantitative. Using this notation the research design can be summarized as **QUAL \Rightarrow QUAN**. This is the shaded area in table 5.6. The justification of the sequential approach lies essentially in the exploratory nature of this study. The influence drivers of attitudes and awareness on CI processes are fundamentally qualitative concepts. Therefore qualitative research is undertaken first to direct and inform the construction of the quantitative research instrument.

The research methodology of this study has been evaluated at four levels. Initially, the state of knowledge, individual preferences, research objectives, and data access has led the

researcher to an epistemological positioning. This “world view” represents the first methodology level. The study is anchored in the pragmatist paradigm with a mixed method approach. It has been argued that pure post-positivist and constructivist paradigms do not fit the nature of this research. In treating quantitative and qualitative approaches as a continuum, and not as being mutually exclusive, the study attempts to use the advantages of both. Equally, the research design is constructed to investigate both causal effects and causal mechanisms. It is neither purely inductive nor purely deductive. Rather the reasoning is abductive in that it swings back and forth between theory and observation. The essential premise is that mixed methods provide a better understanding of research problems (Creswell & Plano Clark, 2007). This Chapter bridges the research design in Chapter 4 to the results which follow in the next Chapter.

CHAPTER 6: Findings and Discussion

6.1 Introduction

The findings are presented in the sequential ordering established in Chapter 4 which is consistent throughout the thesis and respects data sequencing modelled on the Theory of Planned Behaviour. Findings and discussion have been amalgamated to facilitate the linkages between substantive statements and data. Separating quantitative and qualitative results however, is discouraged by Creswell & Tashakkori (2007) as it inhibits integration in mixed methods. Bryman (2008) suggests presenting results in terms of substantive issues as opposed to different methods, a position seconded by Bazely (2004). Therefore, while the sequencing follows the ordered logic named above, where research themes have been investigated by the perspectives of the CI programme directors (QUAL) and the SME decision-makers (QUAN), the data sets are integrated within themes. The 5 thematic groupings are terminology, attitudes, CI advisors, perceived constraints and background factors, presented in that order. Two behaviours were also checked for linkages, the participation in a CCI CI event and the frequency of receiving CI advice. Research questions for quantitative research results are numbered, whereas research questions for qualitative results have both a number and letter sequencing. Following the presentation and justification of the statistical tests undertaken, the data display starts with the substantive form of the CCI CI programmes which is research questions from Section A. Research questions are numbered throughout the data display to assist the matching of substantive statements with either qualitative or quantitative data.

Each of the 5 themes is related to all the other themes and the CI behaviours. The Theory of Planned Behaviour provides a framework for relating themes to each other and to behaviours. Discussion on the relevance of each theme as an influence driver is deliberated. At the end of the chapter a final table summarises the statistical analysis for all 5 themes and the 2 behaviours. This facilitates a discussion on the collective results as well as the contextual environment in which the study is embedded.

6.2 Quantitative Data Analysis

One challenge for researchers is to select the pertinent results and to accept that large parts may need to be left out (Bryson, 2008). In both quantitative and qualitative results only data that directly answer the research questions are presented. Where significant relationships were not found, summary results are presented. When there are statistically significant results for chi-square tests, contingency tables are presented. Similarly, when significant relationships are found by the Kolmogorov–Smirnov test, tables are presented to illustrate the results.

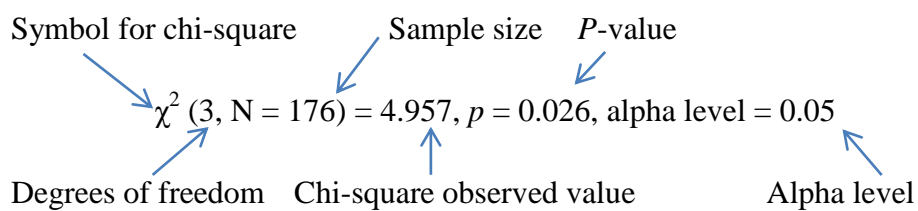
Depending on the data types, different statistical tests were conducted on the quantitative data to determine if significant relationships existed between themes and sub-themes. The three data types which were collected were nominal, ordinal and ratio. Table 6.1 illustrates all the themes and sub-themes that were tested for significant relationships and their corresponding data types. The code book for this data is in Appendix 6.

Table 6.1 Data Themes and Data Types

Data Themes	Data Types	Data Themes	Data Types
<u>Terminology (Theme 1)</u> Other Business Intelligence Market Research Environmental Scanning Competitive Intelligence Competitor Intelligence Strategic Intelligence Knowledge Management None	Nominal	<u>Attitudes (Theme 2)</u> CI needs analysis Monitoring the Competition Setting Up a CI System Monitored by Competitors Investing in Info. Mgt.	Ordinal
<u>CI Advisors (Theme 3)</u> Gendarmerie Chartered Accountants Consultants CCI None	Nominal	<u>Constraints (Theme 4)</u> Ambiguity of the CI Concept Lack of Financial Resources Lack of Technical Skills Lack of Time Not Knowing CI Needs	Ordinal
<u>Background Factors (Theme 5)</u> Size Sector Function Male or Female	Nominal	<u>Background Factors (Theme 5)</u> Internationalisation	Ordinal
<u>Background Factors (Theme 5)</u> Age	Ratio		
<u>Behaviours</u> Participation in a CCI CI event	Nominal	<u>Behaviours</u> Frequency of receiving	Ordinal

Chi-square was chosen as the analytical method for nominal data. It determines how confident we can be that there is a relationship between two variables. The test works by calculating the expected frequency that would occur by chance alone and comparing that to the actual frequency. It does not measure the degree of causality or the direction of causality. The number of categories of the two variables being measured can also influence results. These are referred to as the degrees of freedom, calculated by the number of columns minus 1 multiplied by the number of rows minus 1. A key for interpreting the chi-square results is presented in Figure 6.1.

Figure 6.1 Explanation of Chi-square Reporting



In addition to nominal data, ordinal data were collected for measuring attitudes constraints, frequency of receiving CI advice and internationalisation. The significance of relationships between ordinal values and the other themes and behaviours were tested using the Kolmogorov–Smirnov statistic. By splitting the nominal sample into two groups this test compares observed distributions to theoretical distributions (of the same variable but from two different populations). The *D*-value of the Kolmogorov–Smirnov indicates the distribution differences between two samples. Age of respondents, which is measured in ratio data, was tested for significance with the other themes and behaviours by using *t*-tests. This test compares the average mean between the sample responses and the known theoretical value. The confidence level for all the statistical tests was 95%. When the *p*-value is less than 0.05 we can consider the result to be statistically significant.

The Spearman rank order correlation coefficient was used to measure the level of association between two ordinal variables (for example, attitudes and constraints). Table 6.2 presents the type of statistical test to be used for both parametric and non-parametric samples (Jolibert & Jourdan, 2011). The tests conducted for this study are highlighted in blue.

Table 6.2 Parametric and Non-Parametric Adjustment and Inference Tests for 1, 2 or More Samples (Jolibert & Jourdan, 2011)

1 Sample, 1 Variable (Univariate Analysis)	2 Sample Independent or Matched 2 Variables (Bivariate Analysis)		More than 2 Independent or Matched Samples 2 Variables (Bivariate Analysis)	
	Independent	Matched	Independent	Matched
Parametric Tests for Interval or Ratio				
Student's <i>t</i> -test	<i>t</i>-test for two averages (proportions)	<i>t</i> -test on mean averages	<i>F</i> -test	<i>F</i> -test
Z-test	Z-test for two averages (proportions)	<i>F</i> -test		
		Pearson's Correlation Coefficient		
Non-Parametric Tests (Only Nominal Variables)				
Chi-square	Chi-square	Chi-square	Chi-square (<i>k</i> -samples)	Cochran's Q-Test
	Fisher's Test	McNemar's Test (before & after)		
	Contingency Coefficient			
	Cramer's Coefficient			
	Guttman's Lambda			
Non-Parametric Tests (Only Ordinal Variables)				
Kolmogorov–Smirnov	Kolmogorov–Smirnov	Sign Test	Kruskal and Wallis Test	Friedman Test
	Mann-Whitney Test (U Test)	Wilcoxon Test		
	Median Test	Spearman's Rank Order Correlation		
	Spearman's Rank Order Correlation			

6.3 Validity and Reliability of the Data Sets

Before presenting the sample profiles the validity and reliability of the collected data sets is discussed. Internal validity refers to how confident we can be that the causal relationships are driven by variables used in this study and not by external variables (Jolibert & Jourdan, 2011). Two types of internal confounding variables are pertinent in this study. The first one is instrumentation, which refers to whether the questions are well formulated or not, and whether they can be understood without ambiguity by the respondents. The second one is selection, which occurs when more than one type of person gets into a sample set or is excluded. For example, this could be SMEs which do not answer because they are trying to protect all their information.

One way to avoid bias through instrumentation is to use measurement scales which have already been used effectively. Nobody has specifically studied the variables in this study and so questions had to be formulated. Therefore, the questions asked in the research instruments were checked with experts and piloted. This has been discussed in Chapter four. In terms of section bias, no fool proof assurances can be provided with the data collection method used, other than the processes used by *Creatests*, also discussed in Chapter 4, to verify the seriousness of responses.

External validity, in other words, the generalisation potential, is limited to the populations identified in the two regions and the two sectors of the study. Reliability, also known as sampling error, has been discussed in Chapter four and the resulting margin of error of 5.26% is very good for an exploratory study of this nature.

6.4 CCI CI Director Sample Profile

The 15 directors had considerable exposure to SMEs in terms of CI needs, SME attitudes towards CI, and the effectiveness of the CCI activities. Most had interacted with over a hundred SMEs in some form of their programme implementation. There was an accumulated experience of 59 years for the interviewees in terms of directing CI programmes. Table 6.3 presents the participating CCIs, the year their programmes started and their estimates of how many SMEs have been involved in their programmes. This is in reference to research questions A1 and A2.

Table 6.3 Participating CCI (RQ A1 & RQ A2)

Chamber of Commerce	Year CI Programme Started (RQ A1)	Estimated Number of SMEs Involved in CI Programmes (RQ A2)
Bourgogne	2000	Over 100 in 2008
Chalons en Champagne	'activities' since 1989	Currently around 200
Chambery	2007	Around 12 companies
Colmar	2000	Around 250 in 2008
Dordogne	2008	50
Franche-Comté (regional)	2006	Around 150
Le Mans	1998	80 a year face to face
Lille	2006	Around 140
Paris	2004	Around 120
Rennes (regional) Dufour	2005	Around 100
Rennes (regional) Rodriguez	2007	Around 400
Rhone-Alpes (regional)	2006	Many hundreds
Rouen	2007	115
Tours	2007	Around 100
Versailles Val-d'Oise	2006	Between 300 and 400

The question of who is responsible for CI in SMEs was asked to the CI programme directors. Table 6.4 presents the responses from the CI programme directors, which was research question A3.1. The overall response to this question was that the owner/manager of the SME takes the initiative for CI. It is, however, related to the size of the enterprise, and many other managerial roles could be involved. Twenty employees are seen as a pivotal SME size for CI responsibility. Below twenty employees and the owner/manager takes on the task himself; above twenty a whole host of roles could take on a leadership role. Directors of Finance, Marketing, Sales and R&D were named as well as technical directors and project managers.

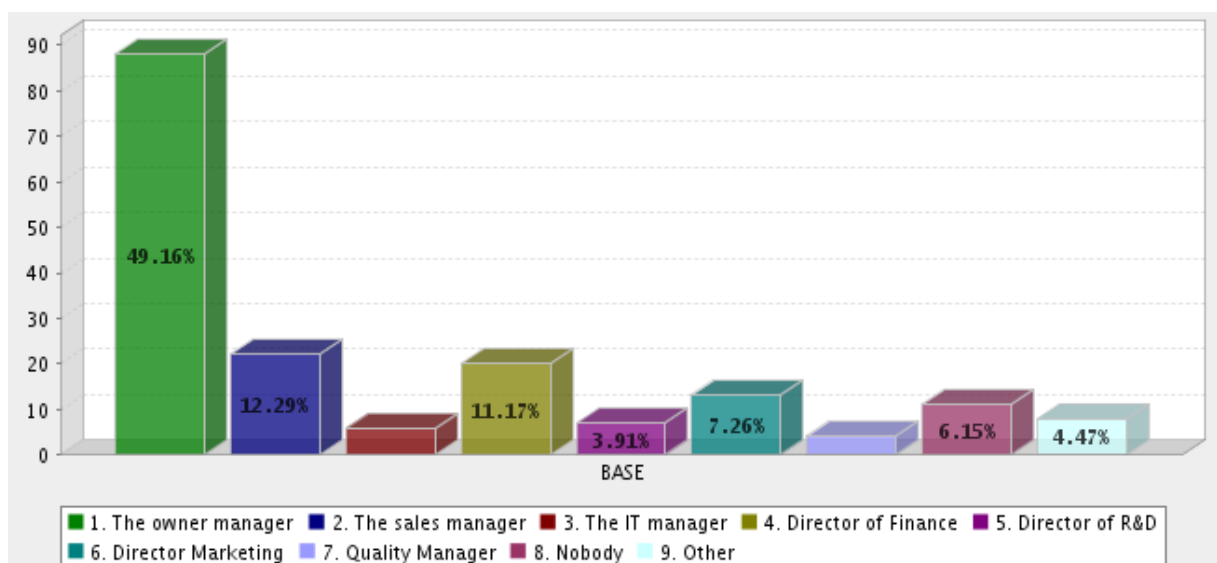
Table 6.4 Responsibility for CI in SMEs (RQ A3.1)

Who is responsible for CI in SMEs?	Frequency (n = 15)
The owner manager	15
The owner manager for SMEs ≤ 20 employees	3
Director of Finance	1
Director of Marketing	1
Director of R & D	1
Quality Manager	1
Technical Director	1

Whatever the company size, support from the owner/manager was seen as critical. Moreover, therein a dilemma was noted that the owner/manager, notably in the smaller companies, is so consumed by daily operations that he or she is often not deeply involved.

The perspective of the SME decision-makers is quite similar. Figure 6.2 illustrates the percentage responses of who is responsible for CI reported by SME decision-makers. This is to answer RQA3.2.

Figure 6.2 Responsibility of CI, SME decision-maker responses $n = 176$, (RQ A3.2)



Note: The IT manager = 3.63%; The Quality Manager = 1.96%

Each of the following functions was proposed only once when ‘other’ was selected: All employees, Director of Strategy, Director of Research, Two collaborators, Director of Human Resources. The function Commercial Director was named twice.

6.5 CCI Actions to help SMEs with their CI practices (RQA4)

The CI programmes are decentralised and do not take on a common format. However, as can be seen from Table 6.5, all the CCIs disseminate CI concepts through conferences and virtually all engage in training and workshops. Many provide a diagnosis of the SME CI practices to determine which training and assistance is appropriate. Many also speak of accompanying the SME with their CI needs, and this may go as far as setting up a CI system.

Table 6.5 Summary of CCI CI Programmes (RQ A4)

Interview Code	Conferences	Training/ Workshops	Sharing of Best Practices Amongst SMEs	Diagnosis of SME CI Practices	Assistance in Implementation of CI System
C1	✓	✓	✓	✓	
C2	✓	✓	✓		
C3	✓	✓			✓
C4	✓	✓		✓	
C5	✓	✓		✓	
C6	✓	✓			
C7	✓	✓			
C8	✓	✓	✓		✓
C9	✓	✓			
C10	✓	✓	✓	✓	
C11	✓		✓		
C12	✓	✓		✓	
C13	✓	✓			
C14	✓	✓			
C15	✓	✓		✓	

6.6 Types of Firms Targeted in Terms of Size and Sector (RQ A5)

The following findings are substantiated by quotes from the interviews with CCI CI programme directors, presented in italics within quotation marks. Size and sector were found to be pertinent factors for participation in CI programmes. The EU definition of SME, less than 250 employees (Eurostat, 2008), was the threshold for six of the fifteen CCIs “*The DRIRE only finances SMEs, therefore we only target those with less than 250 employees*”. However, two CCIs were targeting less than 50 employees “*The new target for this year is SMEs with less than 50 employees which are exporting*” and another two targeting 51 to 200 and 10 to 200. Others excluded nobody in terms of size of organisation. However, the financial assistance systematically excluded non-SMEs with the limit at either 250 or 200 employees “*A subsidy of 80% can be awarded providing the eligibility criteria are respected: that is less than 250 employees, turnover less than 50 million Euros and no more than 20% equity held by another group/company.*”

Sectors addressed clearly followed the economic profile of the CCI region. This was further nuanced by the poles of activity identified by the government. In many instances financial assistance is limited to 3 to 5 sectors. The level of financial assistance could vary between sectors.

6.7 Organisations from Private and Public Sectors Which Collaborate with CCI CI programmes (RQ A6)

Table 6.6 presents organisations and entities from both the private and public sector which were identified as sources of advice for Competitive Intelligence for SMEs in France.

Table 6.6 Collaborating Entities (RQ A6)

French Entity	Who They Are	% of CCI naming entity (n =15)	Total Word Frequency
State Organisations			
DRIRE	Regional government for industry, research, and the environment.	20%	12
DCRI	The intelligence department of the Ministry of the Interior (still known as DST by some)	53%	12

INPI	Intellectual property registry	13%	2
Gendarmerie	A military body with police responsibilities	60%	24
Alain Juillet	(Former)Inter-ministerial Representative for <i>Intelligence Economique</i>	53%	13
Quasi-state organisations			
CCI/ ARIST	Chambers of Commerce and Industry/ Agency for Strategic and Technology Research (part of CCI)	100%	137
ADIT	Agency for the Diffusion of Technology Information	13%	2
MEDEF	A French employers ‘union’ with 750,000 members	40%	32
CGPME	A French ‘union’ for SMEs	27%	
Private organisations			
Consultants - consultancies	Individuals or companies which sell CI related services	87%	152
Chartered Accountants	Known in France as <i>experts comptables</i> – state certified accountants	47%	15
Media	Internet, blogs and the press	87%	22

6.8 Organisations with Credibility for Advising on CI Practices (RQ A7)

The following findings are substantiated by quotes from the interviews with CCI CI programme directors, presented in italics within quotation marks. Three entities stand out as being particularly credible. First is the CCI, a public entity, trusted with qualified staff. “*We have a strong credibility because we come from the public sphere; I think they are reassured because of the aura of the CCI, a structure of support, a public organisation*”. Second, the chartered accountants, who work closely with the SMEs, provide expertise on a broad range of topics, and on the whole are well trusted. “*The chartered accountants are trusted; they (the SMEs) work closely with the chartered accountants and trust their advice*”. Third, other SME managers, especially from the same region and sector, share experiences and opinions. “*SME managers talking about their own CI stories, yes it works; SME managers trust each other on advice, they come from the same world*”. In terms of compliance to advice, the SME managers pay more attention to ‘defensive’, information

protection authorities such as the gendarmerie. Less attention and credibility is awarded to the subject of ‘offensive’ CI, such as strategy. Consultants are seen by the SMEs as being motivated to sell something, expensive, and not necessarily qualified, even though they play a critical role in most CCI CI programmes. *“If a CI consultant spoke to an SME independently of the CCI, I don’t think it would be well appreciated”*. The vast majority of CI programme directors work with consultancies at various stages of their activities.

This concludes Section A on the substance of the CCI CI programmes. Findings and discussion now turn to the 5 research themes. Theme 1 is terminology. First, the qualitative data is presented. This is followed by exploring the statistically significant relationships that terminology may have with the 4 other research themes and the two CI behaviours of participation in a CCI CI event and the frequency of receiving CI advice.

6.9 Theme 1: Terminology

Table 6.7 presents the translations of the terms in English into French language. While data display is in English language the data was collected in French. These translations were the judgement of the researcher. Nevertheless they have been verified by native French speakers who publish in this field. During the online questionnaire random ordering of terms was used to constantly change sequencing.

Table 6.7 Terminology Translations

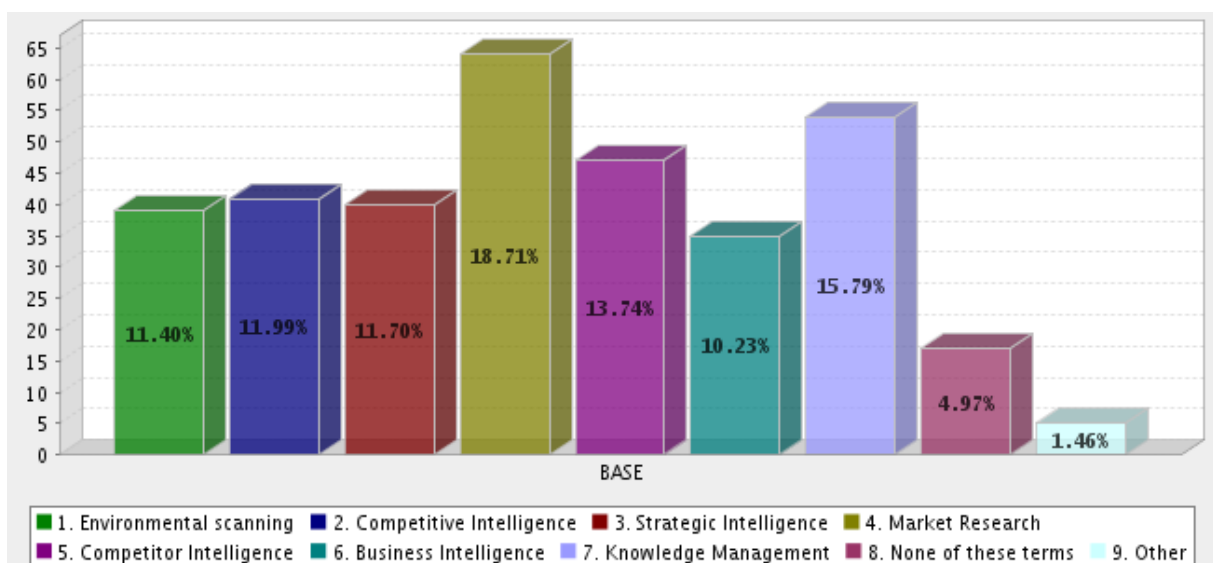
English	French
Market Research	Etude de Marché
Knowledge Management	Gestion de Connaissances
Competitor Intelligence	Veille Concurrentielle
Competitive Intelligence	Intelligence Economique
Strategic Intelligence	Intelligence Stratégique
Environmental Scanning	Veille
Business Intelligence	Business Intelligence
None of these terms	Aucun de ces termes
Other	Autres

6.10 The Terminology Used to Refer to the CI Practices (RQ B1.1)

The CCI CI programme directors gave a variety of responses in regards to SME terminology usage for SMEs. The following comments are substantiated by the quotes from programme directors. Associations with espionage and other pejorative behaviours were widely noted *“they consider CI to be some type of spying and ethically questionable”* even if a clearer, more credible appreciation of CI concepts is emerging *“Some of our SMEs are using the term CI; many think of it as a managerial function”*. Some CCI went as far as to refuse to use the term CI, fearing SME managers’ reactions *“We don’t use the term CI as it usually results in scepticism and funny looks”*. Other CCIs were implementing CI services and actions while using other names such as environmental scanning or strategic information. *“We prefer to use the term environmental scanning, it is more neutral”* Still others use the term CI without any hesitation *“My SMEs mostly use the term CI without hesitation”*. Overall, definitional and scope issues related to CI programmes were considered a problem *“To be honest we don’t know what to call it”*. The merging of CI programmes with Innovation or Sustainable Development programmes was seen as one way of circumventing or alleviating the issue *“Since we merged CI with innovation the question of what to call it has gone away”*.

Figure 6.3 shows the percentages of terms selected by SME decision-makers which they would use for ‘information management’. The respondents could chose more than one term, $n = 176$, and may use more than one term. This data is in reference to RQ B1.2

Figure 6.3 Percentages of Terminology Used by SME Decision-makers (RQ B1.2)



Each of the following terms was proposed only once when ‘other’ was selected: Technology Watch, Continuous Improvement, Management, Marketing, Information Sharing, Information Management and Marketing.

Despite all the use of the term Competitive Intelligence by the French government and support organisations like the CCI, Market Research and Knowledge Management were used more frequently by the SMEs surveyed to refer to ‘information management’. It is also noteworthy that **Competitor** Intelligence was also more frequently selected by the SME decision-makers than the term CI. The small percentage of ‘other’ terms chosen suggests that these terms collectively represent a good catalogue of current terminology. Furthermore, each term proposed in ‘other’ only appeared once

The CI facilitators unanimously stated that the SME managers could not give a precise CI definition but nevertheless understood globally. Table 6.8 shows a selection of responses from the CI programme directors concerning SME interpretations of CI. **This is in reference to Research Question B2 addressed to the CCI CI directors: Can the SME decision-makers give a definition of CI?**

Table 6.8 The Terminology of CI (RQ B2)

Interviewee Code	Selected Responses to the question: Can the SMEs give a definition of CI?
C14	“Not all, environmental scanning is used as a synonym”
C14	“The vocabulary is evolving, we don’t speak of CI but of Strategic Monitoring”
C5	“They are very defensive, for many it is associated with espionage and hacking which is often how the media have presented it”
C1	“Some have never heard of IE, they can all relate to environmental scanning, but IE, no”
C9	“No, one must explain it, in any case, I don’t believe in the definition myself”
C3	“Yes, but incompletely, they associate it with environmental scanning. Those who are aware of CI do relate it to anticipation and adaptation, that is, a strategic application”
C10	“You can associate everything to the word <i>economique</i> , it depends on the characteristics of the manager, protection is the priority”
C11	“No, we speak of environmental scanning, we do not use the term CI”
C12	“A complete definition no but I believe they are beginning to get a grasp as to what it’s all about”
C15	“If we ask they often say espionage or trickery”

Theme 1. RQ 1 Is there a significant relationship between the SME’s decision-makers use of terminology and the participation in a CCI CI event? Table 6.9 illustrates the Chi-square results.

Table 6.9 Terminology and Participation in a CI CCI Event

Term used by SME decision-maker	Chi-square (Observed value)	Chi-square (Critical value)	Degrees of freedom	P-value	Alpha	Sig.
Market Research	5.978	3.841	1	0.014	0.05	Yes
Knowledge Management	1.468	3.841	1	0.226	0.05	No
Competitor Intelligence	0.891	3.841	1	0.345	0.05	No
Competitive Intelligence	4.957	3.841	1	0.026	0.05	Yes
Strategic Intelligence	0.697	3.841	1	0.404	0.05	No
Environmental Scanning	0.932	3.841	1	0.334	0.05	No
Business Intelligence	0.109	3.841	1	0.741	0.05	No
No term used	6.242	3.841	1	0.012	0.05	Yes

Users of the term Market Research were more likely to participate in a CCI CI event. Contingency Table 6.10 illustrates the results.

Table 6.10 Market Research and CCI CI Event

Term	No CCI CI Event Participation	CCI Event Participation	Totals
Market Research used	31	27 (47%)	58
Market Research not used	85	33 (28%)	118
Totals	116	60	176

Users of the term Competitive Intelligence were more likely to participate in a CCI CI event. Contingency Table 6.11 illustrates the results. The percentages in brackets show that 18% of the SMEs not using the term CI participated in a CCI CI event. The usage rate of the term CI jumps to 33% for the SMEs which had participated in a CCI CI event.

Table 6.11 Competitive Intelligence and CCI CI Participation

Term	No SME Participation in CCI CI Event	SME Participation in CCI CI Event	Totals
Competitive Intelligence <u>not</u> used	97	21(18%)	118
Competitive Intelligence used	39	19 (33%)	58
Totals	136	40	176

SMEs which had no term were less likely to participate in a CCI CI event. Contingency Table 6.12 illustrates the results.

Table 6.12 No term and CCI CI Participation

Term	No SME Participation in CCI CI Event	SME Participation in CCI CI Event	Totals
No term used	16	1 (6%)	17
Term used	102	57 (36%)	159
Totals	118	58	176

Theme 1. RQ 2 Is there a significant relationship between the SME's decision-makers use of terminology and the frequency of receiving CI advice?

A chi-square test of independence was performed to examine the relation between use of the terminology and the frequency of receiving CI advice. The tests failed for all terms to indicate any significant differences.

Theme 1. RQ 3 Is there a significant relationship between the SME's decision-makers use of terminology and the SME's decision-maker's attitudes towards CI?

A Kolmogorov–Smirnov test was performed to examine the relation between use of all the terms and the all five attitudes (see Table 6.13).

Table 6.13 Terminology and Attitude: CI Needs Analysis

Term used by SME decision-maker	Statistic <i>D</i>	<i>P</i>-value	Alpha	Sig.
Market Research	0.144	0.081	0.05	No
Knowledge Management	0.034	0.885	0.05	No
Competitor Intelligence	0.026	0.962	0.05	No
Competitive Intelligence	0.179	0.044	0.05	Yes
Strategic Intelligence	0.277	0.001	0.05	Yes
Environmental Scanning	0.106	0.353	0.05	No
Business Intelligence	0.209	0.036	0.05	Yes
No term used	0.418	0.0001	0.05	Yes

SMEs using the term Competitive Intelligence are more likely to have positive attitudes towards a CI needs analysis. Table 6.14 illustrates the results.

Table 6.14 Competitive Intelligence and Attitude: CI Needs Analysis

Using Term Competitive Intelligence	No. of SMEs	Mean (4 point scale, 2.5 average)
No	136	2.992
Yes	40	3.375

SMEs using the term Strategic Intelligence are more likely to have positive attitudes towards a CI needs analysis. Table 6.15 illustrates the results.

Table 6.15 Strategic Intelligence and Attitude: CI Needs Analysis

Using Term Strategic Intelligence	No. of SMEs	Mean (4 point scale, 2.5 average)
No	136	2.962
Yes	40	3.475

SMEs using the term Business Intelligence are more likely to have positive attitudes towards a CI needs analysis. Table 6.16 illustrates the results.

Table 6.16 Business Intelligence and Attitude: CI Needs Analysis

Using Term Business Intelligence	No. of SMEs	Mean (4 point scale, 2.5 average)
No	145	3.042
Yes	31	3.258

SMEs using no term are less likely to have positive attitudes towards a CI needs analysis.

Table 6.17 illustrates the results.

Table 6.17 No Term and Attitude: CI Needs Analysis

Using Term	No. of SMEs	Mean (4 point scale, 2.5 average)
No	33	2.625
Yes	143	3.184

A Kolmogorov–Smirnov test was performed to examine the relation between use of all the terms and the attitude towards monitoring the competition. Table 6.18 illustrates the results.

Table 6.18 SME Terminology and Attitude: Monitoring Competition

Term used by SME decision-maker	Statistic <i>D</i>	<i>P</i> -value	Alpha	Sig.
Market Research	0.039	0.871	0.05	No
Knowledge Management	0.064	0.702	0.05	No
Competitor Intelligence	0.088	0.531	0.05	No
Competitive Intelligence	0.141	0.155	0.05	No
Strategic Intelligence	0.259	0.003	0.05	Yes
Environmental Scanning	0.129	0.220	0.05	No
Business Intelligence	0.175	0.107	0.05	No
No term used	0.104	0.455	0.05	No

SMEs using the term Strategic Intelligence are more likely to have positive attitudes towards monitoring the competition. Table 6.19 illustrates the results.

Table 6.19 Strategic Intelligence and Attitude: Monitoring the Competition

Using Term Strategic Intelligence	No. of SMEs	Mean (4 point scale, 2.5 average)
No	136	2.881
Yes	40	3.250

A Kolmogorov–Smirnov test was performed to examine the relation between use of all the terms and the attitude towards setting up a CI system. Table 6.20 illustrates the results.

Table 6.20 SME Terminology and Attitude: Setting up a CI System

Term used by SME decision-maker	Statistic <i>D</i>	<i>P</i> -value	Alpha	Sig.
Market Research	0.134	0.105	0.05	No
Knowledge Management	0.025	0.967	0.05	No
Competitor Intelligence	0.064	0.710	0.05	No
Competitive Intelligence	0.162	0.072	0.05	No
Strategic Intelligence	0.215	0.012	0.05	Yes
Environmental Scanning	0.087	0.461	0.05	No
Business Intelligence	0.243	0.010	0.05	Yes
No term used	0.221	0.112	0.05	No

SMEs using the term Strategic Intelligence are more likely to have positive attitudes towards setting up a CI system. Table 6.21 illustrates the results.

Table 6.21 Strategic Intelligence and Attitude: Setting up a CI System

Using Term Strategic Intelligence	No. of SMEs	Mean (4 point scale, 2.5 average)
No	136	2.962
Yes	40	3.400

SMEs using the term Business Intelligence are more likely to have positive attitudes towards setting up a CI system. Table 6.22 illustrates the results.

Table 6.22 Business Intelligence and Attitude: Setting up a CI System

Using Term Business Intelligence	No. of SMEs	Mean (4 point scale, 2.5 average)
No	145	2.979
Yes	31	3.452

A Kolmogorov–Smirnov test was performed to examine the relation between use of all the terms and the attitude towards being monitored by the competition. Table 6.23 illustrates the results.

Table 6.23 Terminology and Attitude: Monitored by Competition

Term used by SME decision-maker	Statistic <i>D</i>	<i>P</i> -value	Alpha	Sig.
Market Research	0.093	0.356	0.05	No
Knowledge Management	0.026	0.026	0.05	No
Competitor Intelligence	0.131	0.264	0.05	No
Competitive Intelligence	0.141	0.155	0.05	No
Strategic Intelligence	0.220	0.011	0.05	Yes
Environmental Scanning	0.218	0.022	0.05	Yes
Business Intelligence	0.137	0.266	0.05	No
No term used	0.378	0.003	0.05	Yes

SMEs using the term Strategic Intelligence are more likely to agree that they are being monitored by the competition. Table 6.24 presents the results.

Table 6.24 Strategic Intelligence and Attitude: Monitored by the Competition

Using Term Strategic Intelligence	No. of SMEs	Mean (4 point scale, 2.5 average)
No	136	2.812
Yes	40	3.125

SMEs using the term Environmental Scanning are more likely to agree that they are being monitored by the competition. Table 6.25 illustrates the results.

Table 6.25 Environmental Scanning and Attitude: Monitored by the Competition

Using Term Environmental Scanning	No. of SMEs	Mean (4 point scale, 2.5 average)
No	138	2.801
Yes	38	3.189

SMEs using no term are less likely to agree that they are being monitored by the competition. Table 6.26 illustrates the results.

Table 6.26 Using No Term and Attitude: Monitored by the Competition

Using Term	No. of SMEs	Mean (4 point scale, 2.5 average)
No	17	2.294
Yes	159	2.949

A Kolmogorov–Smirnov test was performed to examine the relation between use of all the terms and the attitude towards investing in information management. Table 6.27 illustrates the results.

Table 6.27 Terminology and Attitude: Investing in Information Management

Term used by SME decision-maker	Statistic <i>D</i>	<i>P</i> -value	Alpha	Sig.
Market Research	0.091	0.349	0.05	No
Knowledge Management	0.044	0.833	0.05	No
Competitor Intelligence	0.102	0.325	0.05	No
Competitive Intelligence	0.181	0.050	0.05	No
Strategic Intelligence	0.230	0.008	0.05	Yes
Environmental Scanning	0.150	0.133	0.05	No
Business Intelligence	0.208	0.040	0.05	Yes
No term used	0.187	0.191	0.05	No

SMEs using the term Strategic Intelligence are more likely to agree that investing in information management will improve their financial performance. Table 6.28 illustrates the results.

Table 6.28 Strategic Intelligence and Attitude: Investing in Info. Management

Using Term Strategic Intelligence	No. of SMEs	Mean (4 point scale, 2.5 average)
No	136	2.872
Yes	40	3.275

SMEs using the term Business Intelligence are more likely to agree that investing in information management will improve their financial performance. Table 6.29 illustrates the results.

Table 6.29 Business Intelligence and Attitude: Investing in Info. Management

Using Term Business Intelligence	No. of SMEs	Mean (4 point scale, 2.5 average)
No	145	2.901
Yes	31	3.258

Theme 1. RQ 4 Is there a significant relationship between the SME's decision-makers use of terminology and the perceived constraints?

Kolmogorov–Smirnov tests were performed between all five constraints and all eight terms. Only one relationship was found to be significant. All the other tests failed to find any significance. The term Business Intelligence was significant with the lack of time constraint (D -value: 0.222, $p = 0.042$, $\alpha = 0.05$). SMEs using the term Business Intelligence were more likely to consider a lack of time as a big constraint to conducting CI. Table 6.30 illustrates the results.

Table 6.30 Business Intelligence Constraint: Lack of Time

Using Term Business Intelligence	No. of SMEs	Mean (4 point scale, 2.5 average)
No	145	2.945
Yes	31	3.290

Theme 1. RQ 5 Do the background factors of age, gender, region, sector, internationalisation, company size, and employee function have a significant relationship with the SME's decision-makers use of terminology?

Only internationalisation, out of all background factors, was found to have a significant relationship with the terms Competitive Intelligence, Market Research and Business Intelligence. All other significance tests failed. See Table 6.31 for the results.

Table 6.31 Terminology and Internationalisation

Term used by SME decision-maker	Statistic <i>D</i>	<i>P</i> -value	Alpha	Sig.
Market Research	0.229	0.005	0.05	Yes
Knowledge Management	0.061	0.743	0.05	No
Competitor Intelligence	0.108	0.386	0.05	No
Competitive Intelligence	0.260	0.004	0.05	Yes
Strategic Intelligence	0.096	0.556	0.05	No
Environmental Scanning	0.084	0.639	0.05	No
Business Intelligence	0.277	0.007	0.05	Yes
No term used	0.114	0.629	0.05	No

SMEs using the term Marketing Research were more likely to have a higher percentage of sales as exports. Table 6.32 illustrates the results.

Table 6.32 Marketing Research and Internationalisation

Using Term Marketing Research	No. of SMEs	Mean (4 point scale, 2.5 average)
No	116	2.233
Yes	60	2.483

SMEs using the term Competitive Intelligence were more likely to have a higher percentage of sales as exports. Table 6.33 illustrates the results.

Table 6.33 Competitive Intelligence and Internationalisation

Using Term Competitive Intelligence	No. of SMEs	Mean (4 point scale, 2.5 average)
No	136	2.206
Yes	40	2.700

SMEs which use the term Business Intelligence are more likely to have a higher percentage of sales as exports. Table 6.34 illustrates the results.

Table 6.34 Business Intelligence and Internationalisation

Using Term Business Intelligence	No. of SMEs	Mean (4 point scale, 2.5 average)
No	145	2.207
Yes	31	2.839

6.11 Investigating Terminology Through the Theory of Planned Behaviour Framework

Four of the 5 themes of the research design relate to the components of the TPB model as discussed in Chapter 4. Terminology has been added to the model to test whether significant relationships exist between terminology use and the 4 other themes. This discussion will follow the sequence of the 5 themes. Attitudes, theme 2, were particularly sensitive to terminology. Thirteen statistically significant relationships were found between the 9 terms and the 5 attitudes. This was notably true with ‘intelligence’ terms, whether that be Competitive, Business, or Strategic Intelligence. Equally telling, the SME decision-makers which had no term for their information management were less likely to have positive attitudes towards setting up a CI system and conducting a CI needs analysis. Based on this evidence, terminology choice would appear to be a manifestation of attitudes towards CI practice.

Theme 3, CI advisors, was found to have 8 statistically significant relationships with terminology. This suggests that choice of CI advisors can have some bearing on terminology usage although the Chi-square tests do not indicate cause and effect direction. Those SME decision-makers who have no term for information management were more

likely to have no CI advisors. Terminology would appear to be a manifestation of CI advisor selection.

Theme 4, perceived constraints, was found to have no significant relationships with terminology. Despite the reportage from the CI programme directors, the SME decision-makers do not appear to be driven by constraints in any way in terms of the CI terminology they use.

Background factors, theme 5, had 3 significant relationships linking 3 terms to 1 background factor, which was internationalisation. SME decision-makers using the terms BI, CI and MR were more likely to be exporting. None of the other background factors had any significant relationships with terminology choice, suggesting that background factors are overall a weak influence driver.

The participation in a CCI event related to CI was found to have statistically significant relationships with the terms MR and CI. In that CI is the terminology choice of the CCI this is hardly surprising but it does confirm the state choice of terminology being used with conviction, albeit by a small percentage of SMEs (11.99%, Fig. 6.3). No relationships were found between terminology and the frequency of receiving CI advice.

6.12 Discussion: Terminology

Both the SME survey and the CCI interviews were cross sectional, at a point in time, and not measuring evolving usage of the terms. Nevertheless, the CCI CI directors expressed a movement in terminology, speaking of “*evolving vocabulary*” and “*they are beginning to grasp what CI is about*”. Brody (2008) discussed the transitory nature of the CI concept, whereby players are moving forward in dynamic environments, and that the heterogeneity of terms may be a reflection of constant change. The perceived movement in France in CI terminology is in a positive direction, which is to say towards a managerial science. In the English speaking world, terms have evolved from the private sector, with heavy Influence from the USA to elsewhere (Wright *et al*, 2004), or even to France (Martre *et al*, 1994; Favier, 1998; Jakobiak, 2006; Moinet, 2010). What is evident and unique in France, is that a government inspired policy, with CI programmes in the field, is a major change agent for CI terminology. The French term *Intelligence Economique*, the chosen but problematic translation for this study, is used in French speaking Canada (Mallowan & Marcon, 2010), Switzerland (Bégin *et al*, 2007) and Portugal (Franco *et al*, 2011). A noteworthy finding

was the statistical significance of the terminology which included the word ‘intelligence’. This correlated positive attitudes towards CI practices.

From the CI programme directors’ perspective, terminology is problematic. Nevertheless there is a consensus that attitudes towards the CI concept have evolved. Although there is an abundance of discussion and conceptualisation of CI terminology, few studies have empirical research to explore the underlying meaning and behaviours which may or may not be attached to a terms use in the field. Brody (2008) explored the definitions and descriptions of CI through document and document surrogate analysis. Little, if any research has examined the antecedents of decision-maker terminology use in the field, whether that be a funded environment or not.

The results from the CI director interviews presented in this Chapter confirm terminology as a problem area in implementing CI programmes. This has been true in Belgium too (Larivet, 2012) and had been identified as an obstacle for CI more widely in earlier times (West, 1999). Equally insightful was the sense that the use of terminology was evolving towards a managerial science orientation and away from more nefarious concepts such as espionage and trickery. The overall message from both data sets is that terminology matters. A number of significant relationships were found between usage, behaviours, and choice of advisors.

No consensus on terminology emerged from the CI directors’ view or the SME decision makers’ perspective. Marketing Research, Competitor Intelligence and Environmental Scanning were more widely used terms by the SMEs than CI. When we add in terms stipulated under ‘other’ by the SMEs a total of 15 terms were used to define the generic ‘information management’. The nine classifications of terms which were used by more than 10% of the SME sample are discussed below.

6.12.1 Market Research

Users of the term Market Research, the term most frequently chosen name by SME decision-makers, were more likely to participate in a CCI CI event. They were also more likely to have a higher percentage of sales as exports and more likely to use the gendarmerie as CI advisors. No relationships were found between this term and the

attitudes SMEs have towards CI practices. It was also found that background factors, outside of exports, had no bearing on the use of this term. No relationships were found between Market Research and the perceived constraints. It would appear that the simplicity of the term suits many SMEs.

6.12.2 Knowledge Management

The second most popular term, Knowledge Management, was found to have very few relationships with behaviours and none whatsoever with attitudes or background factors. Users of Knowledge Management were more likely to use chartered accountants as CI advisors.

6.12.3 Competitor Intelligence

Competitor Intelligence, despite being the third most used term at 13.74%, had no significant relations with any of the five themes in the study. It would seem that while some SMEs are ready to use this term, usage of this term does not connote any specific intention.

6.12.4 Competitive Intelligence

As the chosen term for government sponsored programmes, Competitive Intelligence was used by 11.99% of the SME sample. SMEs using the term Competitive Intelligence were more likely to have attended a CCI CI event, had a higher percentage of sales as exports and were more likely to agree that a CI needs analysis would improve the performance of their company. They were also more likely to have the CCI as a CI advisor. In that sense the term has established itself as a credible function with underlying meaning. Nevertheless, despite all the governmental actions to promote the term, it does not distinguish itself notably from Business Intelligence or Market Research. In contrast to the insight of the CCI CI directors, who themselves were sometimes sceptical about the term; there was a core and loyal following among the SMES, albeit in a relatively small percentage. Despite its difficult naissance, usage of the CI term has positive connotation in the SMEs participating in this study. As Carayon stated (2003, pp 12) “*Both an Anglicism and a neologism, ‘Competitive Intelligence’ remains a brand around which everyone can agree, lacking any other credible alternative*”.

For SMEs, it would appear that Competitive Intelligence is a long way from being universal or even widely used as a term. If an SME decision-maker conducts CI but wishes to call it another name, does it matter? The CCI CI directors often took this course of action finding that using the term Competitive Intelligence led to resistance (see responses to the question in Chapter 6: Can the SMEs give a definition of CI? *“we speak of Environmental Scanning, we do not use the term CI; we don’t speak of CI but Strategic Monitoring; No, one must explain it, in any case, I don’t believe in the definition myself”*). The scepticism of the term Competitive Intelligence is present by the providers of CI as a public policy as well as with the SMEs.

6.12.5 Strategic Intelligence

Strategic Intelligence had the most significance of all the terms with the SME attitudes towards CI practices. SME users of this term were more likely to agree that a CI needs analysis, setting up a CI system, and investing in information management would all lead to improved company performance. They were also more likely to agree that they were being monitored by the competition. There were no significant relationships with any of the background factors. Of the SMEs sampled 11.70% declared to be using this term.

6.12.6 Environmental Scanning

SMEs which use the term Environmental scanning are more likely to agree that they are being monitored by the competition. The term was popular with the CCI CI directors as a substitute for Competitive Intelligence. Users of the term Environmental Scanning, itself a component of the French managerial definition of CI (Larivet, 2009; Dufour, 2010), were almost as numerous (11.34%) as those of CI (11.92%). Environmental Scanning is widely recognised as monitoring information from the external environment that is relevant for the internal environment (Fleming, 1998; Brouard, 2006). Qiu (2008) had demonstrated that scanning, as a precursor to CI, is more of an entrepreneurial activity than a routine activity, although the sample was neither in France nor based on SMEs.

6.12.7 Business Intelligence

The SMEs which used Business Intelligence were more likely to agree that a CI needs analysis and investing in information management would improve company performance. Users of this term were more likely to have a higher percentage of sales as exports and to use Chartered Accountants as CI advisors. As the only English language term (it was not translated in the survey), it was a relatively popular choice with 10.23% of the SMEs acknowledging its usage.

6.12.8 No Term

Of the SMEs sampled 4.97% declared that they have no term to describe their ‘information management’. These SMEs were more likely to have no CI advisor and also more likely to not have attended a CCI CI event. Additionally, these SMEs were less likely to agree that they were being monitored by the competition. One CCI CI director had spoken of ‘Ostriches’ of which he had ‘a lot’. These observations could be presented as disadvantages, suggesting that having no term is undesirable.

6.12.9 Other Terms

When other terms were proposed by the SME decision-makers they were only proposed once. The 7 terms are written in the results chapter. They are all very generic by nature but none of them are pejorative. Despite the reference to ‘trickery’, ‘espionage’ and ‘protection’ by the CCI CI directors, none of the SME decision-makers proposed any negative terminology. The geopolitical school of thought in France that associates CI with economic warfare showed no signs of existence in the SME sample.

6.13 Theme 2 Attitudes

6.13.1 Positioning the SMEs on the Rouach & Santi CI Typology (RQ C1)

In the face to face interviews the Rouach and Santi (2001) CI attitude typology was presented to the CI programme directors. This typology was chosen as it has been

developed and used previously for data research including France and SMEs. They were asked to identify which typologies exist for their enterprises served. Overall every typology was referenced but not by every CCI. This would reflect the diversity of economic fabric represented regionally. Types 4 and 5 were very rare but cases could be noted. A significant insight is the sense of movement from one type to a more progressive stage, often accompanied by the CCI programme. Table 6.35 illustrates the principle commentary for each type. The following sections (6.13.1, 6.13.2 & 6.13.3) of data display are discussed further in sections 6.14 and 6.15.

Table 6.35 Identifying SME Attitude Types (Rouach & Santi, 2001) RQ C1

Company Typology	CI directors' commentary
Type 1. Sleepers/Immune/Passive No fear of competition No interest in CI Not invented here syndrome Minimal or no support from Management	“I'm not sure if type 1 exists, they are all afraid of the competition” “I don't know of any for the first type” “I would phrase this type differently, I think there are a lot of enterprises who don't express their needs effectively” “We call these ostriches and we have a lot of them” “I'm sure at least half of our enterprises are either type 1 or 2”
Type 2. Reactive/Task Driven Only responds when competitors are hostile Opportunists Very limited budget for CI Task driven attitude Ad hoc basis Top management doesn't believe in the benefits of CI	“It's important but not a priority” “They expect CI to be free” “They decide quickly without a lot of reflection” “SME managers have a very nebulous concept of CI, not least of all because it remains nebulous at the state level” “I've never had an SME come to me ask – I need help with Competitive Intelligence” “If there is no immediate need the message passes slowly – if there is an urgent need the message passes quickly” “We have the majority in type 2”

Table 6.35 Continued: Identifying SME Attitude Types (Rouach & Santi, 2001) RQ C1

Company Typology	CI Directors' Commentary
Type 3. Active/Operational Actively observing the competition/Limited resources Beginning of an operational network Trying to understand, analyse and interpret markets Unwilling or unable to have a long term vision on CI Management can see that CI could increase profit	"There are a lot that have passed from type 2 to type 3". "I have some type 3 enterprises I work with for CI, they are going towards type 4" "I think type 3 is the most common type we have"
Type 4. Strategic/Assault/Pro-active Hunt for strategic information/Professional, ethical approach Significant resources/Human intelligence valued Monitoring competitors moves/Top management support An integrated procedure and Scenario planning	"Type 4 exists but it is the SME that belongs to a bigger group, they are well structured" "I had one SME that I would position between type 4 and 5, the only hesitation is they had limited resources" "We have types 1, 2 & 3, rarely type 4, never type 5"
Type 5. Highly Proactive/Value Creation An offensive stance/war mentality Very pro-active in managing the CI process Sophisticated tools/Experts/Unlimited resources Team approach/CI integrated into decision-making	"An SME with a war mentality, no, we don't have that" "I've seen this mentality but never this level of pro-activity" "They exist as SMEs but they are the sub-contractors in defence" "Type 5 exists but not in SME, it's the big companies" "I had a type 5, he managed a company with 1500 employees" "We had a type 5 in an SME, he had gone to 'l'école de guerre', a real case, but I'm not sure if he is still in business, it was absolutely exceptional"

6.13.2 Actions Taken to Change the SME Decision-makers' Attitudes (RQ C2)

Approaches towards changing attitudes and behaviours surfaced during the interviews. As can be seen, the CCI were using both conventional and nonconventional means.

Theatre

The CCI in Lille used professional actors and a play to convey the importance of strategic information and other CI concepts to SMEs. The head of the programme was convinced it worked but more senior officials were reluctant to continue such an alternative method.

SME managers sharing experiences

Many CCI invite SME managers who have implemented CI programmes to forums to share their experiences with other SME managers. SME counterparts are considered by the CCI as the most credible source.

A CI animator split between 4 SMEs each in a different industry

In Le Mans the CCI created an original employment contract for a qualified CI specialist to work in four different SMEs. The consultant, who has a degree in *Intelligence Economique*, spent one day a week with each enterprise to set up tools and systems and train employees on CI techniques. As the four SMEs were from different industries there were no confidentiality issues. The four SMEs jointly paid 50% of the consultant's salary, the other 50% paid by the CCI. The result was very successful. It was considered that a person who came every week becomes familiar with people and practices and therefore can be more sensitive to needs than a consultant who comes for three days and then leaves. In this case, the exceptional nature of the consultant trained and certified in CI, trilingual with 8 years overseas experience, clearly contributed to the success. In fact, the arrangement only came to an end, after one year, because the consultant moved on to other opportunities. The SMEs wanted to continue and were willing to pay 100% of the salary.

Education/Training

Many CCI fund and work closely with business schools. There are instances where SME managers will follow a CI module. More targeted training for using CI tools is often part of a CI programme.

Conferences

Seminars, speeches, ‘breakfasts’, are all approaches to creating awareness for the SMEs. The CCI believe that over the recent years these have contributed to a change of attitude. However, this type of activity is limited to creating awareness or changing attitudes. More structured and customised actions such as training, needs analysis, and setting up systems, are required to change behaviours.

Financial Assistance

The more advanced programmes of the CCI such as setting up a CI unit, following up after a needs analysis, or training, are financed by the state (funds are distributed through the regional government). The subsidy can be implemented in different ways and typically represents 50% to 80% of total cost but sometimes it is 100%. One programme stated that the first year the SME paid almost nothing, much more in the second year and 100% in the third year. They will not participate if there is no financial assistance. Many CCI fear however that they are giving the SME managers the false impression that information is free.

6.13.3 Attitudes of the SME Decision-makers towards CI Practices (RQ C3)

Table 6.36 presents the results.

Table 6.36 SME Attitudes towards CI

CCI Code	Principle Responses of CI Programme Directors
C 13	“It’s important but not the priority, they are over-stretched by daily operations”
C13	“In France, they expect information to be free”
C 14	“It’s always the personality of the SME owner that plays the biggest role”
C 13	“They think it is necessary but they haven’t got the time”
C 5	“There is scanning, protection, and networks. They are always strong on one but never at all three, they are either technical, managerial, or sales oriented”
C 5	“For now they don’t see a return on investment for information”
C 4	“They are not disappointed, it is rather a question of non-comprehension at the beginning”
C 1	“It depends more on the personality of the manager than the sector”

Table 6.36 SME Attitudes towards CI Continued

CCI Code	Principle Responses of CI Programme Directors
C 6	“There are two attitudes, those that are really enthusiastic and think it will solve all their problems, and those who might be curious but lack conviction”
C 6	“ For those SME we accompany who ask for help, we have never had one dissatisfied”
C 6	“Now, for them, they understand that information is important, in fact, they want information on everything, which is not possible”
C 8	“They are sceptical before starting, but once we get going they really get on board”
C 7	“It’s always the same problem, everyone has their own interpretation of Competitive Intelligence”
C 9	“Often the SMEs are run by engineers who have no notion as to what is a market”
C 9	“They are a lot more open than they used to be”
C 9	“I don’t think they are structured in their attitudes”
C 9	“They don’t know their needs, that’s why we do the needs analysis”
C 2	“Now they are much more involved because of the economic crises”
C 2	“They state that they cannot have these competences internally”
C 2	“When it is put in place correctly they see right away the benefits”
C 3	“For them it remains conceptual, it is for large companies”
C 15	“For many SMEs it takes an event, a lost client, a burglary, poor performance, they are very reactive”
C 15	“They are interested, the more examples I give the more convinced they are but when they leave they drop right back into their world”
C 10	“They only commit if there is financial assistance”
C 12	“What is missing is a global approach, everyone in the company is in their corner, and that is not how CI works”
C 12	“It depends a lot on who helps them with their CI, if it was someone questionable, well, CI is to blame”

While the perceived attitudes of SMEs towards CI are heterogeneous certain themes can nonetheless be identified. First, attitudes can be and have been changed. Second, evidence of benefits and the provision of support are necessary in both the short and the long term. Third, two recurring perceived handicaps are the lack of resources of SMEs and lastly, the lack of conceptual clarity surrounding CI processes from an SME perspective.

Theme 2. RQ 6 Do the SME decision-makers attitudes have a significant relationship with the participation in a CCI CI event?

A Kolmogorov–Smirnov test was performed to examine the relation between all five attitude types and the participation in a CCI CI event. Only one attitude was found to be significant. SMEs which participated in a CCI CI event were more likely to have positive attitudes towards conducting a CI needs analysis ($D = 0.189$, $p = 0.016$, $\alpha = 0.05$).

Table 6.37 illustrates the results.

Table 6.37 CI Needs Analysis and Participation in a CCI CI event

Participation in a CCI CI Event	No. of SMEs	Mean (4 point scale, 2.5 average)
No	58	2.940
Yes	118	3.368

Theme 2 RQ 7 Do the SME decision-makers attitudes have a significant relationship with the frequency of receiving CI advice?

Spearman’s correlation test was performed between all five attitudes and the frequency of receiving CI advice. None of the relationships was significant.

Theme 2 RQ 8 Do the SME decision-makers attitudes have a significant relationship with the perceived CI constraints?

Spearman’s correlation test was performed between all five attitudes and all five constraints. None of the relationships was significant.

6.14 Interpreting Attitudes through the Theory of Planned Behaviour

Theme 1, terminology, has already been discussed in relation to attitudes, noting the emphasis on ‘intelligence’ concepts having statistical significance with positive attitudes

towards CI practices. Theme 3, advisors had a total of 9 statistically significant relationships with the CI attitudes. Consultants had significance with all of the attitudes except investing in information management. Both chartered accountants and the CCI had 1 statistically significant relationship, with setting up a CI system for the former and the CI needs analysis for the later. Those SMEs without CI advisors were less likely to have positive attitudes towards the CI needs analysis, setting up a CI system, and investing in information management. This underlines the importance of having a CI advisor. The Theory of Planned Behaviour presents attitudes and subjective norms (advisors) as antecedents to behaviours, recognising that they can influence each other bi-directionally. The CCI do have the stated aim of changing SME attitudes towards CI, which gives credence to the influence driver direction. Nevertheless, consultants as CI advisors would seem to play a larger role.

There were no statistically significant relationships between any of the attitudes and the perceived constraints. The Theory of Planned Behaviour holds that perceived behavioural control (perceived constraints) can influence and be influenced by attitudes. No statistical evidence was found to substantiate this.

None of the background factors had any statistical relationships with any of the attitudes. Fishbein & Ajzen (2010) stated that background factors are often mediated through attitudes and subjective norms.

One attitude, the CI needs analysis, had a positive statistical relationship with participating in a CCI CI event. This is one of the behaviours which were measurable. The Theory of Planned Behaviour is not being used as a predictive model of when and how this behaviour occurs, but rather as a framework for exploring the named themes and the relationships between them. There were no statistical relationships between the frequency of receiving CI advice and attitudes.

6.15 Attitudes: Discussion

Significant relationships were found between the CI advisors and attitudes as well as between terminology and attitudes. No significant relationships were found between

constraints and attitudes and none between background factors and attitudes. These points will be discussed in more detail together with a reflection on the qualitative results, notably the application of the Rouach and Santi typology.

As discussed under the CI advisors section, SMEs using consultants were more likely to have positive attitudes towards the effectiveness of a CI needs analysis as well as the setting up of a CI system, and were more convinced they were being monitored by their competitors. The causal direction of these relationships is not clear statistically, and could be argued both ways. The SMEs which participated in a CCI CI event were more likely to have positive attitudes towards the effectiveness of a CI needs analysis. The predominant role of a CI needs analysis as a precursor to conducting CI (Salles, 2006) is consistent with this finding. Users of the CCI as advisors were also more likely to have positive attitudes towards the effectiveness of a CI needs analysis. The theory of planned behaviour suggests that key referents, together with the individual's predisposition to engage and follow the referents advice, shape attitudes and intentions. It is therefore argued here that the consultants and the CCI are the cause and conducting the CI needs analysis is the effect.

The lack of significance between background factors and attitudes towards CI practices is also a valuable finding. Size of company, sector, function, internationalisation, gender, and age of SME decision maker, all had no bearing on the attitudes towards CI practices. The CCI CI programmes are in effect attitude change and behaviour change interventions. According to the theory of planned behaviour (Fishbein & Ajzen, 2010) attitude change is a means to behavioural change. That the antecedents tested, and summarised above, show no evidence of significance with the attitudes can help future behaviour change interventions, at least in terms of what not to target. The frequency of receiving CI advice had no significance with the attitudes towards CI practices.

The Rouach & Santi (2001) typology was an effective research instrument in eliciting the CCI CI directors' opinions and insights about positioning SMEs in terms of five attitude categories. First, all five attitude types were relevant to all of the CCI CI directors, even if they did not claim to work with or witness a particular type. The original work by Rouach & Santi (2001) only placed French SMEs in two of the five types (Reactive and Active). Second, it encouraged the interviewees to reflect and categorise. Third, as a technique it encouraged the provision of examples. Fourth, the categorisation permitted the comparison of one type to another. A key finding of this approach was the sense of movement that CI

programme directors perceived of SMEs progressing from one level to a more advanced one within the scope and efforts of the CCI CI programmes. Specifically this referred to type 1 SMEs: Sleepers, Immune, Passive to type 2 SMEs: Reactive, Task Driven, and this Type 2 to Type 3: that is Active and Operational. No cases of higher order advances from type 3 to type 4, or from type 4 to type 5 were reported.

An overarching question with CI public policy programmes is whether they create value or not (Wright, 2011). The findings of this study have shown that SMEs can and do progress in identifiable stages of CI practices within a funded environment.

CI processes can be modulated and observed in SMEs (Dou, 2004; Wright *et al*, 2012). It was the underlying logic of the CI typology of Wright *et al* (2002) which has since been applied in an SME context (Wright *et al*, 2012). Modulating stages of CI development was an approach by Bulinge (2002) to transfer CI competencies to SMEs in a research action project. The modulation of processes with incremental steps was theoretically sound but the approach proved to be heavy in terms of administration and cost. It may be that the minimal bureaucracy and high levels of role overlap that are typical in SMEs (Spickett-Jones & Eng, 2006) create resistance to overly prescriptive approaches of transferring CI competencies.

The innovative approaches to assisting SMEs by the CCI would seem to be having results. The diversity of approaches accentuates the decentralisation of the CCI CI programmes and the relative liberty local chambers have in stimulating awareness, transferring skills and messages and sharing best practices. Even the financial assistance varied from one chamber to another, with different percentage contributions. Nevertheless, the sustainability of the innovative approaches remains questionable. The theatre of CI was a one-time event. The shared CI animator/consultant between 4 SMEs ended when the highly skilled individual decided to move on. Conferences and training, together with the CI needs analysis would seem to be more continuous and evolving practices. It could also be argued that new and innovative approaches may replace the ones that have ended.

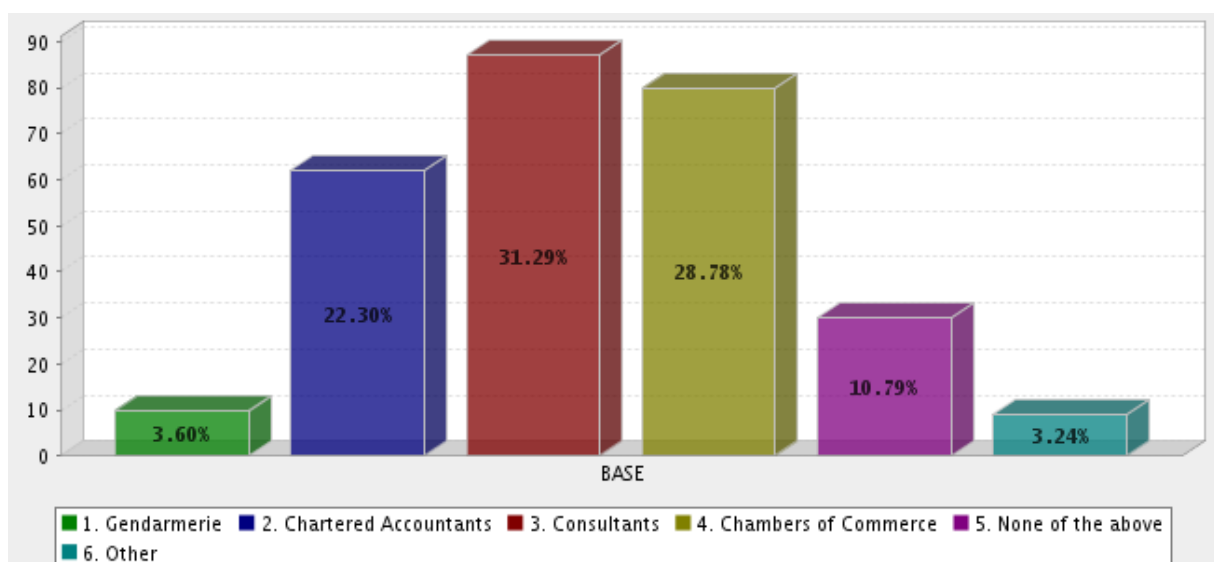
The informal decision making of SMEs (Bulinge, 2002; Salles, 2006; Bégin *et al*, 2007), plus the observed link between structure and strategy in SMEs (Spickett-Jone & Eng, 2006) suggest that the supportive role of the CCI should not be overly prescriptive. Moreover, SME decision makers are taking decisions at both operational and strategic levels (Salles, 2006). This requires flexibility and spontaneity. The responses of the CCI CI

directors of the open question ‘What are the attitudes of the SME decision makers towards CI practices?’ emphasised the resistance many small businesses still hold. On the one hand, they highlighted the lack of time, CI not being their priority, and that they are very reactive to events. On the other hand, a sense that attitudes can and have been changed is conveyed, and that the roles of the CCI has played a part in this transition. According to the CCI CI programme directors the conceptual ambiguity of the CI concept proposed a sizable barrier for the SMEs. The CI programme directors struggled to some degree not to agree with them. No significant relationships were found between attitudes and constraints however, from the SME decision-makers. On this point, there is disagreement in findings between the CCI CI directors and the SME decision-makers. That the programmes have created movement, and that it is in a positive direction, is not in doubt.

6.16 Theme 3 CI Advisors

The SME decision-makers were asked which entities furnished their SMEs with CI advice. Figure 6.4 shows the advisors selected by SME decision-makers ($n = 176$). This data complements the research questions related to CI advisors.

Figure 6.4 SME Choice of CI Advisor



Each of the following terms was proposed only once when ‘other’ was selected: Internet, Director General, Internal source, Ubifrance, Professional Magazine and Intelligence Agency.

Theme 3. RQ 9 Is there a significant relationship between the SME's choice of CI advisor and the participation in a CCI CI event?

A chi-square test of independence was performed to examine the relations between the five CI advisors and the participation in a CCI CI event. Table 6.38 illustrates the chi-square test results for CI advisors and participation in a CCI CI event. The advisors are listed from most often selected choice at the top to least selected choice at the bottom.

Table 6.38 SME CI Advisors and CCI CI Event Participation

Source of CI Advice	Chi-square (Observed value)	Chi-square (Critical value)	Degrees of freedom	P-value	Alpha	Sig.
Consultants	3.703	3.841	1	0.054	0.05	No
CCI	26.680	3.841	1	0.0001	0.05	Yes
Chartered Accountants	0.277	3.841	1	0.599	0.05	No
No Advisor	13.296	3.841	1	0.0003	0.05	Yes
Gendarmerie	3.510	3.841	1	0.061	0.05	No
Other	0.746	3.841	1	0.388	0.05	No

Note: Sig. = significant

SMEs which participated in a CCI CI event were more likely to use the CCI as an advisor. Contingency Table 6.39 illustrates the results. The percentages in brackets show that 17% of the SMEs which participated in a CCI CI event did not use the CCI as a CI advisor. This compares to 54% of SMEs which participated in a CCI CI event for those SMEs which did use the CCI as a CI advisor.

Table 6.39 Participation in a CCI CI Event and CCI as Advisor

Behaviour	SME does <u>not</u> use CCI as CI Advisor	SME uses CCI as CI Advisor	Totals
No participation in a CCI CI event	83	35	118
Participation in a CCI CI event	17 (17%)	41 (54%)	58
Totals	100	76	176

SMEs which had not participated in a CCI CI event were more likely to have no CI advisors. Contingency Table 6.40 illustrates the results.

Table 6.40 No Participation in a CCI CI Event and No CI Advisor

Behaviour	CI Advisor	No CI Advisor	Totals
No Participation in a CCI CI event	87 (31%)	31 (94%)	118
Participation in a CCI CI event	56	2	58
Totals	143	33	176

Theme 3. RQ 10 Is there a significant relationship between the SME's source of CI advice and the frequency of receiving CI advice?

A Kolmogorov–Smirnov test was performed to examine the relation between SME choice of CI advisor and the frequency of receiving CI advice. None of the CI advisors had significant relationships with the frequency of receiving CI advice.

Theme 3 RQ 11 Is there a significant relationship between the SME's choice of CI advisor and the SME's decision-makers use of terminology?

All 8 terms were tested for significant relationships with the CI advisor Gendarmerie. Two of the relationships were found to be significant. Table 6.41 summarises the results.

Table 6.41 Terminology and Gendarmerie

Term used by SME decision-maker	Chi-square tests: advisors: Gendarmerie	Sig.
Market Research	$\chi^2 (1, n = 176) = 6.085, p = 0.014, \alpha = 0.05$	Yes
Knowledge Management	$\chi^2 (1, n = 176) = 0.492, p = 0.483, \alpha = 0.05$	No
Competitor Intelligence	$\chi^2 (1, n = 176) = 0.267, p = 0.606, \alpha = 0.05$	No
Competitive Intelligence	$\chi^2 (1, n = 176) = 0.319, p = 0.572, \alpha = 0.05$	No
Strategic Intelligence	$\chi^2 (1, n = 176) = 0.319, p = 0.572, \alpha = 0.05$	No
Environmental Scanning	$\chi^2 (1, n = 176) = 5.055, p = 0.025, \alpha = 0.05$	Yes
Business Intelligence	$\chi^2 (1, n = 176) = 2.267, p = 0.132, \alpha = 0.05$	No
No term used	$\chi^2 (1, n = 176) = 1.134, p = 0.287, \alpha = 0.05$	No

Users of the term Market Research were more likely to use the Gendarmerie as CI advisors. Contingency Table 6.42 illustrates the results.

Table 6.42 Advisor Gendarmerie and Market Research

Term	Gendarmerie as advisor	Gendarmerie <u>not</u> an advisor	Totals
Market Research <u>not</u> used	3 (3%)	113	116
Market Research used	7 (12%)	53	60
Totals	10	166	176

SME users of the term Environmental Scanning were more likely to use the Gendarmerie as CI advisors. Contingency Table 6.43 illustrates the results.

Table 6.43 Gendarmerie and Environmental Scanning

Term	Gendarmerie as advisor	Gendarmerie <u>not</u> an advisor	Totals
Environmental Scanning <u>not</u> used	5 (4%)	133	138
Environmental Scanning used	5 (13%)	33	38
Totals	10	166	176

A chi-square test of independence was performed to examine the relation between use of Terminology and the use of the CI advisor Chartered Accountants. Knowledge Management and Business Intelligence were found to have significant relationships with the choice of Chartered Accountants as CI advisors. Table 6.44 illustrates the results.

Table 6.44 Terminology and Chartered Accountants

Term used by SME decision-maker	Chi-Square Tests: Advisors: Chartered Accountants	Sig.
Market Research	$\chi^2 (1, n = 176) = 0.506, p = 0.477, \alpha = 0.05$	No
Knowledge Management	$\chi^2 (1, n = 176) = 4.740, p = 0.029, \alpha = 0.05$	Yes
Competitor Intelligence	$\chi^2 (1, n = 176) = 2.167, p = 0.141, \alpha = 0.05$	No
Competitive Intelligence	$\chi^2 (1, n = 176) = 0.290, p = 0.590, \alpha = 0.05$	No
Strategic Intelligence	$\chi^2 (1, n = 176) = 2.167, p = 0.141, \alpha = 0.05$	No
Environmental Scanning	$\chi^2 (1, n = 176) = 0.022, p = 0.882, \alpha = 0.05$	No
Business Intelligence	$\chi^2 (1, n = 176) = 4.428, p = 0.035, \alpha = 0.05$	Yes
No term used	$\chi^2 (1, n = 176) = 2.549, p = 0.110, \alpha = 0.05$	No

Users of the term Knowledge Management were more likely to use the Chartered Accountants as CI advisors. Contingency Table 6.45 illustrates the results.

Table 6.45 Advisor Chartered Accountant and Knowledge Management

Term	Chartered Accountants as CI Advisor	Chartered Accountants <u>not</u> used as CI advisor	Totals
Knowledge Management <u>not</u> used	37 (31%)	86	123
Knowledge Management used	25 (47%)	28	53
Totals	62	114	176

Users of the term Business Intelligence were more likely to use the Chartered Accountants as CI advisors. Contingency Table 6.46 illustrates the results.

Table 6.46 Advisor Chartered Accountants and Business Intelligence

Term	Chartered Accountants used as CI Advisors	Chartered Accountants <u>not</u> used as CI Advisors	Totals
Business Intelligence <u>not</u> used	46 (32%)	99	145
Business Intelligence used	16 (51%)	15	31
Totals	62	114	176

A chi-square test of independence was performed to examine the relation between use of terminology and the use of the CI advisor Chartered Accountants. Only the relationship between use of no term and the use of consultants as advisors was significant. All other tests failed. Table 6.47 overleaf, illustrates the results.

Table 6.47 Chi-Square Tests for Terminology and Consultants

Term used by SME decision-maker	Chi-Square Tests: Advisors: Consultants	Sig.
Market Research	$\chi^2 (1, n = 176) = 0.910, p = 0.340, \alpha = 0.05$	No
Knowledge Management	$\chi^2 (1, n = 176) = 0.027, p = 0.869, \alpha = 0.05$	No
Competitor Intelligence	$\chi^2 (1, n = 176) = 0.795, p = 0.373, \alpha = 0.05$	No
Competitive Intelligence	$\chi^2 (1, n = 176) = 1.165, p = 0.280, \alpha = 0.05$	No
Strategic Intelligence	$\chi^2 (1, n = 176) = 2.071, p = 0.150, \alpha = 0.05$	No
Environmental Scanning	$\chi^2 (1, n = 176) = 0.134, p = 0.714, \alpha = 0.05$	No
Business Intelligence	$\chi^2 (1, n = 176) = 3.172, p = 0.075, \alpha = 0.05$	No
No term used	$\chi^2 (1, n = 176) = 7.879, p = 0.005, \alpha = 0.05$	Yes

Users of the no term were less likely to use the consultants as CI advisors. Contingency Table 6.48 illustrates the results.

Table 6.48 No term and Consultants

Term	Consultants used as CI Advisors	Consultants not used as CI advisors	Totals
Term used	85 (54%)	74	159
No term used	3 (18%)	14	17
Totals	88	88	176

A chi-square test of independence was performed to examine the relation between use of Terminology and the use of Consultants as the CI advisor. Competitive Intelligence and the use of no term were found to have significant relationships with the choice of Consultants as CI advisors. Table 6.49 overleaf illustrates the results.

Table 6.49 Terminology and CCI

Term used by SME decision-maker	Chi-Square Tests: Advisors: CCI	Sig.
Market Research	$\chi^2 (1, n = 176) = 3.824, p = 0.051, \alpha = 0.05$	No
Knowledge Management	$\chi^2 (1, n = 176) = 0.001, p = 0.970, \alpha = 0.05$	No
Competitor Intelligence	$\chi^2 (1, n = 176) = 1.407, p = 0.235, \alpha = 0.05$	No
Competitive Intelligence	$\chi^2 (1, n = 176) = 10.043, p = 0.002, \alpha = 0.05$	Yes
Strategic Intelligence	$\chi^2 (1, n = 176) = 0.981, p = 0.322, \alpha = 0.05$	No
Environmental Scanning	$\chi^2 (1, n = 176) = 1.764, p = 0.184, \alpha = 0.05$	No
Business Intelligence	$\chi^2 (1, n = 176) = 0.416, p = 0.519, \alpha = 0.05$	No
No term used	$\chi^2 (1, n = 176) = 7.570, p = 0.006, \alpha = 0.05$	Yes

Users of the term Competitive Intelligence were more likely to use the CCI as CI advisors. Contingency Table 6.50 illustrates the results.

Table 6.50 Competitive Intelligence and CCI

Term	CCI used as CI Advisor	CCI <u>not</u> used as CI advisor	Totals
Competitive Intelligence <u>not</u> used	14 (14%)	86	100
Competitive Intelligence used	26 (34%)	50	76
Totals	40	136	176

Users of no term were less likely to use the CCI as CI advisors. Contingency Table 6.51 illustrates the results.

Table 6.51 No Term and CCI

Term	CCI used as CI Advisor	CCI <u>not</u> used as CI Advisor	Totals
Term used	74 (47%)	85	159
No term used	2 (12%)	15	17
Totals	76	100	176

Chi-square tests were performed on SME CI terminology and the SMEs who have no CI advisors. Table 6.52 summarises the results.

Table 6.52 Terminology and No CI Advisors

Term used by SME decision-maker	Chi-Square Tests: Advisors: No Advisors	Sig.
Market Research	$\chi^2 (1, n = 176) = 1.753, p = 0.185, \alpha = 0.05$	No
Knowledge Management	$\chi^2 (1, n = 176) = 0.200, p = 0.655, \alpha = 0.05$	No
Competitor Intelligence	$\chi^2 (1, n = 176) = 0.099, p = 0.753, \alpha = 0.05$	No
Competitive Intelligence	$\chi^2 (1, n = 176) = 1.327, p = 0.249, \alpha = 0.05$	No
Strategic Intelligence	$\chi^2 (1, n = 176) = 4.300, p = 0.038, \alpha = 0.05$	Yes
Environmental Scanning	$\chi^2 (1, n = 176) = 0.003, p = 0.953, \alpha = 0.05$	No
Business Intelligence	$\chi^2 (1, n = 176) = 0.170, p = 0.680, \alpha = 0.05$	No
No term used	$\chi^2 (1, n = 176) = 19.836, p = 0.0001, \alpha = 0.05$	Yes

Users of the term Strategic Intelligence were less likely to have CI advisors. Contingency Table 6.53 illustrates the results.

Table 6.53 Strategic Intelligence and No CI Advisor

Term	No Advisors	Advisors used	Totals
Strategic Intelligence <u>not</u> used	30 (22%)	106	136
Strategic Intelligence used	3 (8%)	37	40
Totals	33	143	176

SMEs which use no term were more likely to have no CI advisors. Contingency Table 6.54 illustrates the results.

Table 6.54 Use of No Term and No CI Advisors

Term	No Advisors	Advisors used	Totals
Term used	7 (5%)	136	143
No term used	10 (30%)	23	33
Totals	17	159	176

Theme 3.R Q 12 Is there a significant relationship between the SME's choice of CI advisor and the SME's decision-makers' attitudes towards CI?

Table 6.55 shows the Kolmogorov–Smirnov test results for CI advisors and the attitude towards a CI needs analysis.

Table 6.55 SME CI Advisors and Attitude: CI Needs Analysis

Advisor	Statistic <i>D</i>	<i>P</i> -value	Alpha	Sig.
Consultants	0.157	0.032	0.05	Yes
CCI	0.219	0.003	0.05	Yes
Chartered Accountants	0.143	0.081	0.05	No
Gendarmerie	0.202	0.339	0.05	No
No Advisors	0.418	0.0001	0.05	Yes
Other	0.195	0.587	0.05	No

SMEs which use the CCI or Consultants as a source of CI were more likely to have positive attitudes towards conducting a CI analysis. Table 6.56 illustrates the results. The mean average of 3.227 for those SMEs which use consultants as advisors compares to the mean average of 2.893 for those SMEs which do not use consultants. The attitude scale had four points from 1 (not positive) to 4 (very positive) regarding attitudes towards a CI needs analysis.

Table 6.56 Consultants as CI Advisors and Attitude: CI Needs Analysis

Consultants as CI Advisors	No. of SMEs	Mean (4 point scale, 2.5 average)
No	84	2.893
Yes	88	3.227

Note: 4 observations with missing data

SMEs with the CCI as CI advisors were more likely to have positive attitudes towards CI needs analysis. Table 6.57 illustrates the results.

Table 6.57 CCI as CI Advisors and Attitude: CI Needs Analysis

CCI as CI Advisors	No. of SMEs	Mean (4 point scale, 2.5 average)
No	100	2.929
Yes	76	3.280

SMEs without a CI advisor were less likely to have positive attitudes towards a CI needs analysis. Table 6.58 illustrates the results.

Table 6.58 No CI Advisors and Attitude: CI Needs Analysis

CI Advisors	No. of SMEs	Mean (4 point scale, 2.5 average)
No	33	2.625
Yes	143	3.184

Table 6.59 shows the Kolmogorov–Smirnov test results for CI advisors and the attitude towards monitoring the competition.

Table 6.59 SME CI Advisors and Attitude: Monitoring the Competition

Advisor	Statistic <i>D</i>	<i>P</i> -value	Alpha	Sig.
Consultants	0.115	0.191	0.05	No
CCI	0.062	0.636	0.05	No
Chartered Accountants	0.080	0.475	0.05	No
Gendarmerie	0.168	0.489	0.05	No
No Advisors	0.104	0.455	0.05	No
Other	0.268	0.361	0.05	No

No significant results were found between choice of advisor and the attitude towards being monitored by the competition.

Table 6.60 shows the Kolmogorov–Smirnov test results for CI advisors and the attitude towards setting up a CI system.

Table 6.60 SME CI Advisors and Attitude: Setting up a CI System

Advisor	Statistic <i>D</i>	<i>P</i> -value	Alpha	Sig.
Consultants	0.194	0.005	0.05	Yes
CCI	0.124	0.125	0.05	No
Chartered Accountants	0.177	0.023	0.05	Yes
Gendarmerie	0.090	0.830	0.05	No
No Advisors	0.220	0.020	0.05	Yes
Other	0.124	0.802	0.05	No

SMEs which use Consultants as CI advisors were more likely to agree that setting up a CI system would improve their financial performance. Table 6.61 illustrates the results.

Table 6.61 Consultants as CI Advisors and Attitude: Setting up a CI System

Consultants as CI Advisors	No. of SMEs	Mean (4 point scale, 2.5 average)
No	88	2.893
Yes	88	3.227

SMEs which use Chartered Accountants as CI advisors were more likely to agree that setting up a CI system would improve their financial performance. Table 6.62 illustrates the results.

Table 6.62 Chartered Accountants as CI Advisors and Attitude: Setting up a CI System

Chartered Accountants as CI Advisors	No. of SMEs	Mean (4 point scale, 2.5 average)
No	114	2.946
Yes	62	3.283

SMEs without a CI advisor were less likely to agree that setting up a CI system would improve their financial performance. Table 6.63 illustrates the results.

Table 6.63 No CI advisors and Attitude: Setting up a CI System

CI Advisors	No. of SMEs	Mean (4 point scale, 2.5 average)
No	33	2.710
Yes	143	3.142

Table 6.64 shows the Kolmogorov–Smirnov test results for CI advisors and the attitude towards being monitored by the competition.

Table 6.64 SME CI Advisors and Attitude: Monitored by Competition

Advisor	Statistic <i>D</i>	<i>P</i> -value	Alpha	Sig.
Consultants	0.229	0.001	0.05	Yes
CCI	0.047	0.847	0.05	No
Chartered Accountants	0.037	0.894	0.05	No
Gendarmerie	0.113	0.740	0.05	No
No Advisors	0.161	0.140	0.05	No
Other	0.317	0.196	0.05	No

SMEs which use Consultants as a source of CI were more likely to agree that competitors monitored their company's activity. Table 6.65 illustrates the results.

Table 6.65 Consultants as CI Advisors and Attitude: Monitored by Competition

Consultants as CI Advisors	No. of SMEs	Mean (4 point scale, 2.5 average)
No	88	2.686
Yes	88	3.080

Table 6.66 shows the Kolmogorov–Smirnov test results for CI advisors and the attitude investing in information management.

Table 6.66 SME CI Advisors and Attitude: Investing in Info. Management

Advisor	Statistic <i>D</i>	<i>P</i> -value	Alpha	Sig.
Consultants	0.142	0.065	0.05	No
CCI	0.128	0.117	0.05	No
Chartered Accountants	0.148	0.066	0.05	No
Gendarmerie	0.264	0.179	0.05	No
No Advisors	0.201	0.033	0.05	Yes
Other	0.131	0.653	0.05	No

SMEs with no advisors were less likely to have positive attitudes towards investing in information management. Table 6.67 illustrates the results.

Table 6.67 No CI Advisors and Attitude: Investing in Info. Management

CI Advisors	No. of SMEs	Mean (4 point scale, 2.5 average)
No	33	2.688
Yes	143	3.028

Theme 3. RQ 13 Do the background factors of age, gender, region, sector, internationalisation, company size, and employee function have a significant relationship with the SME's choice of CI advisor?

A chi-square test of independence was performed on the background factors of gender, sector, size employee function and each of the five CI advisors. Only one relationship was found to be significant. This was the relationship between size and consultants. All other tests failed. A *t*-test was performed on age and the five advisors. None of the relationships was significant. A Kolmogorov–Smirnov test was performed between internationalisation and each of the five advisors. None of these relationships was significant.

A chi-square test of independence was performed to examine the relation between SME size and having consultants as CI advisors. The relationship between these variables was significant, $\chi^2(1, N = 176) = 5.114, p = 0.024$, alpha level = 0.05. SMEs of size 10 to 49 employees were more likely to use consultants as CI advisors than SMEs of size 50 to 249. Contingency Table 6.68 illustrates the results.

Table 6.68 SME Size and Consultants

Size	SME uses consultants as advisors	SME <u>does not</u> use consultants as advisors	Totals
10 to 49 1	51 (59%)	36	87
50 to 249 2	37 (41%)	52	89
Totals	88	88	176

6.17 Interpreting CI Advisors through the Theory of Planned Behaviour

The CI advisors do have meaningful relationships with the terminology and the attitudes towards CI behaviours as discussed in the prior two themes. No significant relationships were found between CI advisors and perceived constraints. In this study, the CI advisors are by definition change agents for the SME behaviours. In that sense it is reasonable to assume that the cause is from the CI advisors to terminology and attitudes, although the Theory of Planned Behaviour does not show cause and effect direction between attitudes, subjective norms and perceived behavioural control. Conceptually, an SME with a certain attitude towards CI may therefore choose a certain type of CI advisor. It is also feasible that influence direction passes backwards and forwards between attitudes and advisors depending on any number of contextual factors.

The background factor of size had statistically significant relationships on whether consultants were chosen or not as CI advisors. Small sized SMEs (11 to 49 employees) were more likely to use consultants than the larger sized SMEs (50 to 249 employees). This suggests that smaller-sized SMEs have certain growth needs in terms of CI advice than larger ones. It is also consistent with the observation from CI directors that 20 employees is a pivotal size in terms of structuring CI practice and overall involvement. None of the other background factors had any significant relationships with CI advisors.

In terms of behaviours, SMEs with no advisor were less likely to participate in a CCI CI event. As expected, SMEs which did not use the CCI as an advisor were less likely to participate in the CCI CI event and the SMEs which did use the CCI as an advisor were more likely to participate in the CCI CI event.

6.18 CI Advisors: Discussion

The CCI CI directors have considerable exposure to SMEs in terms of CI needs, SME attitudes towards CI, and the effectiveness of the CCI activities. Most have interacted with over a hundred SMEs in some form of their programme implementation. Ganesh *et al* (2003) spoke of the importance of identifying “key informants” for CI field research. The CI programme directors of the CCI have proved to be a rich source for qualitative research into SME CI practices. This research has been dependent on the unique experiences that the CI directors have had in the field. No explicit CI programme funded by public money can be found in English speaking countries even if more general SME support is widespread (Bergeron, 2000a).

The SME decision makers’ perspective corroborates this finding. Those SMEs which participated in a CCI CI event were more likely to use the CCI as an advisor. Equally, those SMEs which had the CCI as an advisor were more likely to participate in a CCI event. In this research design, the CCI are in fact both a key referent, which can shape SME attitudes, but also a type of behaviour, when an SME participated in a CCI CI event. Causal direction may indeed vary between SMEs unique experiences and could be bi-directional even for one specific SME. The CCI was ranked as the second most popular advisor, after consultants. While the attitudes of the CCI CI directors suggested Consultants were poorly viewed by SMEs, SMEs themselves had more favourable views. Consultants were the most commonly chosen advisor by SMEs and three positive attitudes of the SME decision-makers were linked to Consultants while there was only one (CI needs analysis) for the CCI. Those SMEs which had not participated in a CCI CI event were more likely to have no CI advisors. The importance of having a CI advisor was underlined. Those SMEs without a CI advisor were less likely to have positive attitudes towards conducting a CI needs analysis or setting up a CI system.

The relative acceptance of the CCI as advisors is important. A study by Burke & Jarratt (2004) found SMEs bypassing formal professional advisory services due to a lack of relevance given specific industry context. The CCI in France, a priori, have not suffered from this point of view. The anchorage of the CCI in the regions enhances the development of locally based competences. The role of financial assistance should be kept in mind

however. The CCI CI directors did not hide the fact that the SMEs would not participate without this incentive.

6.18.1 Consultants as CI Advisors

The CCI work closely with CI consultancies and are not at all in competition with them. Consultants were the most commonly chosen advice entity by the SME decision-makers (31%). The SMEs which use CI consultancies were more likely to consider that a CI needs analysis and setting up a CI system would improve company performance. They were also more likely to believe that they were themselves being monitored by the competition. Whether it is the CI attitudes which causes the SMEs to choose the consultancies or whether the positive attitudes are an outcome of consultancy advice is an open question. The theory of planned action postulates that key referents are an antecedent of attitudes but using Consultancies could also be considered an intention and a type of behaviour.

The only background factor which had significant relations with consultancies was company size. Perhaps surprisingly, the small sized companies, 10 to 49 employees, were more likely to use consultancies than the larger sized companies. This would suggest that the smaller sized companies were at a stage of growth with more needs, which would be a worthy area for future investigation.

6.18.2 Chartered Accountants as CI Advisors

The chartered accountants were named by 47% of the CCI CI directors and chosen as advisors by 22% of the SMEs. Those SMEs which use Chartered Accountants as CI advisors were more likely to agree that setting up a CI system would improve their company performance. SMEs using Chartered Accountants were more likely to use the terms Knowledge Management and Business Intelligence. As one of only two identified private sector CI entities, Chartered Accountants would seem to be a viable source of CI advice for SMEs.

6.18.3 Gendarmerie as CI Advisors

With 60% of the CI programme directors naming the Gendarmerie this entity clearly has a role in the French mind set of CI. It is additional evidence that in France the CI concept has a heavy protection connotation. In a PhD thesis examining the role of state bodies in French CI programmes, Leonetti (2008) considered the Gendarmerie a key player in both information security and as an important bridge between public and private informational exchanges. Less than 4% of the SMEs however, considered the Gendarmerie as a CI advisor. It would appear that the public policy of CI considers the Gendarmerie as a key player but that the SME community is much less convinced. There were no significant relationships between the users of the Gendarmerie as advisors and the attitudes towards CI practices.

6.18.4 No CI Advisor

SMEs with no CI advisors were more likely not to attend a CCI CI event and were less likely to agree that a CI needs analysis and setting up a CI system would improve their company's performance. They were also less likely to agree that they are monitored by the competition. Overall, there appears to be a minority of SMEs which are unconvinced about CI practices. Of the sampled SMEs, 10.79% declared not to have a CI advisor. Those SMEs with no CI advisor are more likely to use no term for their information management.

6.18.5 Other Entities Identified

Six entities were named by the SME respondents under 'other' in reference to choice of CI advisor. The internet, internal source, and professional magazine, each of which was named only once, were not considered real options as CI advisors. UbiFrance was named once as well. It is a public organisation to aid French businesses with their exports. Intelligence agency would appear to be a synonym for consultancy, although the ambiguity of this term resulted in it staying in the 'other' classification. Only 3.24% of the responses were under the 'other' section.

6.19 Public and Private CI Advisors

The broader picture of collaborating entities from which SMEs seek advice highlights the role of the state. The CI directors' perspective emphasised the role of state organisations or quasi-state organisations, although this view needs tempering in light of the acknowledged roles of consultants and chartered accountants from the private sector. The government inter-ministerial representative for CI at the time, Alain Juillet, was mentioned by 53% of the programme directors. When asked which organisations participate in the CCI CI programmes 12 out of 15 were either state or quasi-state entities. This emphasises the broad scope of CI programmes in France which encompass many more public entities in addition to the CCI.

None of the five CI advisors had any significant relations with the frequency of seeking CI advice. This would suggest that SMEs, even those with established CI advisors like the CCI and consultants, do not drive SMEs to increase the frequency of interaction. Half (51%) of the SMEs questioned sought advice on CI every month, 24% once a year and a surprising 23% stated 'never'. The 2% who chose 'other' spoke of seeking CI advice 'all the time' or quarterly.

Within the broader picture of Territorial Intelligence the findings show some light on the evolving public-private partnership in France. In that a stated goal of Territorial Intelligence is to build synergy between public and private sectors (Pautrat & Delbecque, 2009) the 28% of the SMEs surveyed who use the CCI as a CI advisor together with a private sector CI advisor (Consultant or Certified Accountant), represents tangible progress. If we include the Gendarmerie, as the French approach to CI as public policy would do, the percentage rises to 31%. Territorial Intelligence is much more than a theory in France.

A Kolmogorov–Smirnov test was performed to examine the relationships between the five SME perceived constraints to conducting CI and the five sources of CI advice. None of the relationships was significant.

6.20 Theme 4 Perceived Constraints

Table 6.69 presents selected quotes from the semi-structured interviews with the CCI CI directors. These are the responses to the question addressing the perceived constraints of the SMEs.

Table 6.69 Selected Quotes of Perceived Constraints (Theme 4. RQ B3)

Interviewee Code	Ambiguity of the CI Concept
C14	"It is a very nebulous vision, nebulous because le message is not necessarily very clear from the French State"
C3	"We always come up against the same problem: everyone has their own definition of what is CI"
C5	"For them it remains conceptual and they believe it doesn't really concern them"
	Lack of Financial Resources
C10	"They are curious, it is not the priority, they don't have the resources. It's interesting but there are emergencies"
C9	"Because it involves personnel, CI comes a long way behind in terms of priorities"
C3	"They follow on when it is free but the minute you ask them to put the hand in the pocket..."
	Lack of Technical Skills
C5	"They know they need to scan but they haven't a clue how to structure their data collection"
C7	"In the training sessions we see that technically they are mostly limited to an internet search"
C12	"I think they are conscious that they lack the technical skills and it acts as a brake"
	Lack of Time (Bulinge, 2002)
C4	"They have the desire but in the end they are consumed by their daily tasks"
C1	"It is not their priority"
C5	"When they leave they are full of good intentions but when it comes to follow we see that daily tasks took over..."
	Not Knowing CI Needs (Salles, 2006)
C8	"The main focus for us is identifying their CI needs, which they more often than not don't know"
C7	"They have a global idea of the CI concept but then the question come up: what exactly do they want from CI?"
C8	"They need help in determining their CI needs"

Theme 4. RQ 14 Do the perceived constraints have a significant relationship with the participation in a CCI CI event?

A Kolmogorov–Smirnov test was performed between all five constraints and SME participation in a CCI CI event. None of the relationships was significant.

Theme 4. RQ 15 Do the perceived constraints have a significant relationship with the frequency of receiving CI advice?

Spearman's correlation test was performed between all five constraints and the three frequencies. Only one of the constraints had a significant relationship. The constraint of not knowing CI needs had statistical significance with higher frequencies of receiving CI advice. The results for all five constraint tests are illustrated in Table 6.70.

Table 6.70 Frequency and Constraint Spearman Correlation Tests

Constraint	Ambiguity of The CI concept	Lack of financial resources	Lack of technical skills	Lack of time	Difficulty of understanding CI needs
Frequency	P = 0.634	P = 0.586	P = 0.448	P = 0.253	P = 0.044

Theme 4. RQ 16 Is there a significant relationship with the choice of CI advisor and each of the five constraints?

A Kolmogorov–Smirnov test was performed to examine the relationships between the five SME perceived constraints to conducting CI and the five sources of CI advice. None of the relationships was significant.

6.21 Interpreting Perceived Constraints through the Theory of Planned Behaviour

The perceived constraints had no statistically significant relationships with any of the 5 themes. The Theory of Planned Behaviour states that an individual's perceived control is likely to take into consideration some of the realistic constraints which might exist (Ajzen, 2005). That is, it can play a motivational role on intentions and therefore behaviours. Despite the fact that the CI directors considered the perceived constraints of the SME decision-makers to be consequential there is no corroborating statistical findings. On the contrary, it would seem that perceived constraints are convenient excuses for inaction by SMEs.

A statistically significant relationship was found between the perceived constraint of not knowing CI needs and the frequency of receiving CI advice. The logic of this finding was

that the more an SME decision-maker considered that they didn't know their CI needs the more frequently they were seeking advice. No statistical relationships were found between any of the perceived constraints and the participation in a CCI CI event.

6.22 Constraints: Discussion

Constraints had no significant relationships with terminology, attitudes, advisors, background factors, or participation in a CCI CI event. While there is much discussion of SME constraints in regards to CI (Bulinge, 2002; Guilhon, 2004; Salles, 2006), this study has not identified them as an antecedent to attitudes, terminology, or to the participation in a CCI CI event. Like background factors, it would seem they are contextual and on SMEs' minds (they have opinions about constraints) but not determinant in behaviours or attitudes. Nevertheless, the SMEs which receive CI advice more frequently perceive the difficulty of understanding their needs to be a serious constraint. In other words, the SMEs which do not know their own needs seem to be seeking advice more frequently. Salles (2006) confirmed that SMEs have difficulty knowing their needs.

6.23 Theme 5 Background Factors

Theme 5. RQ 17 Do the background factors of age, gender, region, sector, internationalisation, company size, and employee function have a significant relationship with the SME's participation in a CCI CI event?

A chi-square test of independence was performed to examine the relation between the SME background factors of size, sector, region and employee function. A Kolmogorov-Smirnov test was performed for internationalisation and participation in a CCI CI event. A *t*-test was performed on employee age and the participation in a CCI CI event. None of the factors had significant relationships with the participation in a CCI CI event.

Theme 5. RQ 18 Do the background factors of age, gender, region, sector, internationalisation, company size, and employee function have a significant relationship with the frequency of receiving CI advice?

A Kolmogorov–Smirnov test was performed to examine the relation between the SME background factors of size, sector, region and employee function against the frequency of receiving CI advice. Frequency of receiving CI advice and internationalisation were tested with Spearman’s correlation. Age was tested with a *t*-test. Three of the factors, size and sector, had significant relationships with the frequency of receiving advice.

The SMEs sized 10 to 49 received CI advice more frequently than the 50 to 249 size ($D = 0.955$, $p = 0.0001$). Table 6.71 illustrates the results.

Table 6.71 SME Size and Frequency of Receiving CI Advice

SME Size	No of SMEs	Mean (4 point scale, 2.5 average)
10 to 49	87	3.034
50 to 249	89	1.573

SMEs in the Telecoms sector were receiving advice more frequently than SMEs in the Automobile sector ($D = 0.500$, $p = 0.001$). Table 6.72 illustrates the results.

Table 6.72 Sector and Frequency of Receiving CI Advice

SME Sector	No of SMEs	Mean (4 point scale, 2.5 average)
Automobile	83	1.940
Telecom	93	2.620

Theme 5. RQ 19 Do the background factors of age, gender, region, sector, internationalisation, company size, and employee function have a significant relationship with the SME’s decision-maker’s attitudes towards CI?

A Kolmogorov–Smirnov test was performed to examine the relation between the SME background factors of size, sector, region, employee function, and gender against each of the five SME attitudes towards CI. None of the factors had significant relationships with any of the attitudes. No significant relationships were found between age, internationalisation, and SME CI attitudes.

Theme 5. RQ 20 Do the background factors of age, gender, region, sector, internationalisation, company size, and employee function have a significant relationship with the SME's perceived constraints?

A Kolmogorov–Smirnov test was performed to examine the relation between the SME background factors of size, sector, region, employee function, and gender against each of the five CI constraints. None of the factors had significant relationships with any of the constraints. No significant relationships were found between age, internationalisation, and CI constraints.

6.24 Interpreting Background Factors through the Theory of Planned Behaviour

All of the statistically significant relationships between background factors and the 5 themes have already been discussed. Overall, very little influence of background factors has been established and none at all between background factors and attitudes towards CI behaviours. Nevertheless, a statistically significant relationship was found between both size and sector in regard to the frequency of receiving CI advice. Smaller-sized SMEs were receiving CI advice more frequently and the SMEs from the Telecoms sector were receiving CI advice more frequently than the Automobile sector.

In the Theory of Planned Behaviour there are no direct linkages between background factors and behaviours. Background factors can influence behaviours but they are normally mediated through beliefs, attitudes, subjective norms, and perceived behavioural control (Ajzen, 2005).

6.25 Discussion of Background Factors: Size

Size was found by Larivet (2002) to have no significant bearing on CI practice, an observation seconded by Begin *et al* (2007) who found few differences between small and large companies in terms of intelligence practices. Other CI research in France has highlighted different practices between large and small firms (Bulinge, 2001; Saayman *et al*, 2008; Salles, 2006), with larger sizes having more effective practices. This study has not found size to be a significant determinant of SME CI attitudes, CI terminology, and frequency of receiving CI or constraints. One finding concerns Consultants as advisors,

and then it is a counter-intuitive result. The smaller sized SMEs were more likely to use consultants as CI advisors than larger SMEs. This would suggest that smaller SMEs have greater need for consultancy advice. It was also found that the smaller sized SMEs (10 to 49 employees) were receiving CI advice more frequently than the larger SMEs. The CCI's policy of favouring small businesses for financial assistance with CI practice may have had an influence on the second observation. The inconclusive nature of SME size and CI practices would imply that size on its own is not an overwhelming driver of SME CI attitudes or behaviours.

The CCI CI directors considered 20 as a pivotal employee count. Above this number SME management engagement becomes more intense. This has been corroborated by research on SMEs in Belgium (Larivet & Brouard, 2012). The question of size remains a contentious issue for CI practices in SMEs. The research suggests that as a factor on its own it is not a good predictor of CI practices. Unfortunately, in following the EU definition of size bands, the question of 20 employees was not examined in the SME survey.

6.26 Discussion of Background Factors: Sector

Sectorial differences on CI practices have been acknowledged in SMEs (Tarraf & Molz, 2006). Telecoms were receiving CI advice more frequently than the automobile sector. Telecommunications has been identified as a very active sector in terms of CI importance (Marceau & Sawka, 1999; West, 1999; Harkleroad, 1998). Automobile seemed to value CI practices but not to the same degree. No other significant relations were found between sectors and the themes in the funded environment. Only two sectors were in the sample frame so it would be inappropriate to claim sectorial differences. Sector, whether Automobile or Telecom, had no measurable effect on CI attitudes, terminology, participation in a CCI CI event or any of the constraints.

6.27 Discussion of Background Factors: Region

Tests of statistical significance were performed between the two regions, Ile de France and Rhone-Alpes and all of the other research variables. No statistical significance was found

between the variable 'region' and any of the other research variables. Even if the study started as a regional comparison, it would appear that the two most economically dynamic regions in France do not differ significantly in their SME CI practices in a funded environment. This is in itself a finding, suggesting that a relative degree of heterogeneity may exist in France, at least for the more economically developed regions.

6.28 Discussion of Background Factors: Function

Function, defined as owner manager, upper manager, professional, and employees, was not found to have any significant relationships with any of the five themes. The owner/managers represented 11.73 % of respondents, skilled professionals 60.89%, middle management 18.44% and employees 8.94%.

6.29 Discussion of Background Factors: Internationalisation

Internationalisation has received quite a lot of attention in the literature as it is a goal of most governments to increase exports through SME activity (Ruzzier *et al*, 2006). As aforementioned under the terminology section, internationalisation had significance with three terms. It also had a significant relationship with the frequency of receiving CI advice, but not perhaps as one might expect. SMEs with a higher percentage of sales as exports were receiving CI advice less frequently. Callot (2006) found that while a theoretical link between CI practices and internationalisation can be established the empirical evidence had not confirmed the relationship. Other research in this area however, has found exporting SMEs very active with external information needs (Bournois & Romani, 2000; Julien & Ramamangahy, 2003) and that managing the external informational needs is the core problem (Leonidou, 2004; Léo & Philippe, 2006).

6.30 Discussion of Background Factors: Gender and Age

Gender and age of the SME respondents were tested for significant relationships with all themes and behaviours but no significant relationships were found.

6.31 Summarising the Findings

Table 6.73 summarises all the statistical test results for the 5 themes and the two behaviours. Both positive significant relationships and negative significant relationships are illustrated. This is followed by a discussion of the collective findings from both qualitative and quantitative findings in regards to the contextual environment of the study.

Table 6.73: Summary Table of Statistical Test Results

Caption																															
Terminology Theme 1	T1	T2	T3	T4	T5	T6	T7	T8	T9	Att1	Att2	Att3	Att4	Att5	Av1	Av2	Av3	Av4	Av5	Av6	C1	C2	C3	C4	C5	Bh1	Bh2	S1	S2	I	
	Business Intelligence T1	↗	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Market Research T2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Environmental Scanning T3	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Competitive Intelligence T4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Competitor Intelligence T5	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Strategic Intelligence T6	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Knowledge Management T7	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Other T8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
None T9	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
Attitude Theme 2	CI needs analysis Att1	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Monitoring the competition Att2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Setting up a CI system Att3	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Monitored by the competition Att4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Investing in information mgt. Att5	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
Advisors Theme 3	Gendarmerie Av1	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
Chartered Accountants Av2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Consultants Av3	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	CCI Av4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	None Av5	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Other Av6	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
Constraints Theme 4	Ambiguity of the CI Concept C1	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Lack of financial resources C2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Lack of technical resources C3	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Lack of time C4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Not knowing CI needs C5	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
Behaviour 1	CCI Event Participation																														
Behaviour 2	Freq. of Rec. CI Advice	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
Theme 5	Background: Size	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
Theme 5	Background: Sector	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
Theme 5	Background : International	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	

↗ = Positive significant relationship
(both items vary in the same direction)

↘ = Negative significant relationship
(items vary opposite directions)

○ = no significant relationship

Caption

↗ = **Positive** significant relationship
(both items vary in the same direction)
↘ = **Negative** significant relationship
(items vary opposite directions)
○ = no significant relationship

6.31 Debating the Findings in the Contextual Environment of the Study

The summary Table 6.73 emphasises that terminology can be a CI manifestation, that terms with the word ‘intelligence’ signify greater influence on attitudes and advisors, and that not having any term corresponds to passive behaviours and attitudes. The CI advisors of the CCI and consultants had significant relationships with positive attitudes towards CI behaviours. Whereas the qualitative data suggested that perceived constraints do indeed shape SME attitudes and behaviours this was not substantiated by the statistical analysis.

These findings suggest that the CI attitudes, behaviours and manifestations of SME decision-makers are influenced and shaped by external advisors. The CCI and consultants have showed more numerous significant relationships than other advisors. For the SMEs, the CCI represent the 'human face' of French CI public policy programmes and their integration with SMEs and private sector players, such as consultants, has tangible results.

The programmes themselves are innovative, decentralised, constantly evolving and original. This undoubtedly allows them to adapt to their various environments. The awareness and attitudes of SMEs towards CI have indeed changed since these programmes were initiated a decade ago. The snowball effect of multiple players should however be acknowledged. The CCI is but one of numerous public and private entities that influence SME CI practices. Collectively, they have changed attitudes towards CI practices. A theme that permeates the CI directors' responses is that despite resistance SME attitudes towards CI have evolved in a positive manner. The perceived resistance from SMEs is due to limited resources, limited time, and an inability to know their CI needs. It can also be claimed that resistance may be born from the terminology used. This at least, was the perspective of the CI programme directors. The lack of statistical significance on the issue of constraints from the SME decision-makers suggests however, that it is not constraints which are driving SME CI practices. The fact that constraints may be used as an excuse for inaction, rather than being a legitimate factor is a point which deserves further investigation.

Both data sets confirmed the owner manager of the SME as the individual most likely to be responsible for CI. The SME decision makers however, had a more dispersed view on who is responsible. Split between 49% stating the owner manager and 51% for other managers, with a total of 15 positions named. Only one SME named 'all employees', a rare but thought provoking insight. The need for centralisation of the role is clearly understood and widely practiced. The location of the role however, tended to vary widely. Sales Managers and Finance Managers were the two main positions after the owner manager. The use of CI on one individual in an SME was the general rule. The literature has emphasised this point as CI in SMEs depends on the personality of the individual (Bulinge; 2002; Dou, 2004; Burke & Jarratt, 2004; Larivet, 2009; Tarraf & Molz, 2006) and their attitudes (Tarraf & Molz, 2006; Smith *et al*, 2010). It should be kept in mind however that attitudes are

evaluative in nature towards a person, object, or target. Personality traits are not necessarily evaluative and they focus on the individual him or herself (Ajzen, 2005).

Whether the funding of SMEs is justified in terms of the opportunity costs is of course a matter for legitimate debate. Nevertheless, whether the SMEs started behind or ahead of their international competitors in terms of CI practices, those that have participated actively have progressed in terms of the attitudes and manifestations which constitute this study.

Despite all of these observations, the provision of financial assistance is necessary to win commitment from SMEs. Without the funded environment, which from the SME perspective is largely channelled through the CCI, the SMEs engagement to training, awareness and attitude changes would have been very limited. The next Chapter links back the results to the research objectives named in Chapter 2 and the research questions from Chapter 4 to present the contributions of the thesis to the literature. In addition to discussing these contributions a typology is presented which proposes a continuum of practices and manifestations for SMEs in a funded environment.

CHAPTER 7: Contributions to Knowledge

7.1 Introduction

The research objectives from 1 to 7 presented in Chapter 2 are revisited in Table 7.1 aligned with corresponding research questions, subject development, and contribution subjects. Each contribution subject is presented in this Chapter, first by stipulating how the research questions have been answered and second, how this adds value to the literature.

Table 7.1 Linking Research Objectives, Research Questions and Contributions

No.	Research Objectives	Research Questions/ Subject Development	Contribution Subjects
1.	Describe and explore the funded environment of CI public policy for SMEs in France.	<u>Development</u> : Literature review	See contribution subject No. 9 in table 7.2
2.	Describe the nature of the CI programmes implemented through the CCI in France.	A1, A2.1, A2.2, A3.1, A3.2, A4, A5, C2	CI Programmes at French CCI
3.	Identify the major public and private sector players in the French CI public policy programme.	A6, A7,	Public and Private Sector Players
4.	Identify and develop themes which drive SME decision-makers' CI behaviours.	A6, A7, B1.1, B1.2, B2, B3, C3	CI Influence Drivers and Manifestations
5.	Underpin research design with an established theoretical model that relates behaviour to attitudes and their antecedents.	<u>Development</u> : Research design modelled on the Theory of Planned Behaviour	See contribution subject No. 10 in table 7.2
6.	Test existing CI typologies to account for SME attitudes and behaviours in a funded environment.	C1	Positioning SMEs on prior work Typologies
7.	Analyse the relationships between the influence drivers and the SMEs CI behaviours.	Research questions 1 through 20	Evaluating the relationships between CI attitudes, behaviours, and manifestations in French SMEs

The findings and discussion from Chapter 6 enables the remaining research objectives, numbered from 8 to 11, to be answered. This includes a CI typology which uses bird analogies to identify 5 SME types on a continuum of attitudes and manifestations. The

context of the study presented in Chapter 2 is revisited in light of the findings. To complement the alignment of research objectives and contributions, both CI public support policy and methodology contributions are presented. Finally, the published literature contributions from this thesis are summarised. Table 7.2 aligns the remaining research objectives from 8 to 11, the subject development, and the contribution subjects.

Table 7.2 Linking Research Objectives, Subject Development and Contributions

No.	Research Objectives	Subject Development	Contribution Subjects
8.	Propose an original CI typology with original SME type labels, substantiated by qualitative and quantitative data, to facilitate both managerial and research objectives in a funded environment.	<u>Development:</u> Formulating 5 SME types from prior work and the qualitative and quantitative data sets.	The Contribution of the Manifestations Typology: From Mockingbirds to Doves
9.	Debate the findings from the study in the contextual environment in which the thesis is studied.	<u>Development:</u> Referencing the findings to the contextual environment in which the study is embedded.	Relating the Findings to the Contextual Environment of the Study
10.	Discuss how the theoretical underpinnings of the study have shaped analysis and findings.	<u>Development:</u> Relating data to the theoretical framework.	Evaluating the findings through the Theory of Planned Behaviour
11.	Contribute to the literature on CI as a public policy	<u>Development:</u> Write up and publications	Contributions to Literature

7.2 The Funded Environment of CI Public Policy in France

7.2.1 How Research Objective 1 Has Been Answered

This research question has been predominantly answered in the literature review which was overwhelmingly based on French language sources. The public and private actors have been discussed, the environment has been conceptualised from the top of the state level to the company level and the key government reports debated. This included a chronological mapping of the emergence of the French CI public policy and how notably North American thinking has influenced its development. The CCI are only one player, albeit a critical one for SMEs. The funded environment is synonymous with the contextual environment of the study. Research objective 9 specifically addresses the findings referenced to the context in which the study is embedded.

7.2.2 How the Findings for Research Objective A1 Adds Value to the Literature

As stated in Table 7.1 research objective 1 is predominantly a development phase and the contribution is best reflected when comparing the findings to the contextual environment, which is research objective 9. While France provides an excellent case study on CI public support policy the country specific environment should be emphasised. There has been a national effort in France from the executive branch at the head of government, through ministry, regional and local players as well as much media coverage. In Belgium, conversely, the Walloon regional CI public policy was initiated by a local actor and not by a top-down process (Larivet & Brouard, 2012). The budgetary resources and semi-public status of the French CCI are distinguishing features that may not be present in other countries. Despite these indigenous factors, France highlights many lessons for all countries trying to facilitate SME CI performance. CI public support initiatives require close relationships with SMEs in order to identify manifestations and facilitate targeting. Financial resources may be necessary to overcome perceived constraints and a web of CI support entities, whether from public or private sectors, needs coordination and facilitation. Therefore, not only should attitude change interventions lead the way, but public sector initiatives should recognise that effective coordination of existing players can make a difference.

The question posed by Martre *et al* (1994) as to whether one nation implementing a CI national policy would encourage others to follow or not can now be partly evaluated. The question was asked within the context of all five levels of CI as identified by Jakobiak (2006), that is to say, from the company level all the way up to state influence and state lobbying. This study has focused on the interaction between the SME company level and inter-profession level of which the CCI are a prominent example. As such, commentary is restricted to this level. France was the natural benchmark for Belgium in terms of the CI public policy; however, Belgium does not claim to have a state CI policy (Larivet & Brouard, 2012), even if state organisations are involved. France does appear to be unique with a specific multi-level state CI structure, at least in a European context. While there is evidence that other countries have been inspired by French programmes - French speaking Canada (Mallowan & Marcon, 2010), Switzerland (Bégin *et al*, 2007) and Portugal (Franco *et al*, 2011) – it is clearly not an off the shelf model to copy. Bergeron (2000a) noted that some cultural traits may facilitate CI programme implementation. This study has

emphasised the uniqueness of French CI public policy, which is far more ingrained at the state level than programmes in neighbouring countries.

7.3 CI Programmes at French CCI

7.3.1 How Research Objective 2 Has Been Answered (RQs A1, A2.1, A2.2, A3.1, A3.2, A4, A5, C2)

This research objective was answered by 8 sub-questions which were addressed directly to 15 CI programme directors at CCIs in France. This field data, which was further developed in themes using NVivo as described in Chapter 4, has been particularly rich and well-timed. While some questions, such as the number of participating SMEs (RQ A2.1) or the date of commencement (RQ 2.2) had direct one-dimensional answers, other questions were answered through examples, cases, and vivid description. This would include the questions addressing who is responsible for CI in the SMEs (RQ A3.1) and the types of actions taken to help SMEs with their CI practices (RQ A4). Moreover, this qualitative data collected through in-depth interviews allowed the detail of decentralised programmes to be recorded. Thus the types of firms targeted (RQ A5) and the other collaborating entities (RQ A6) in the programmes reflected local context and unique regional profiles. Above all, the questions were answered by experts in the field with on hand experience raising the richness and credibility of the thesis findings. RQ A7, which addressed the directors' views on credibility of collaborating entities, notably benefited from these key informants.

7.3.2 How the Findings to Research Objective 2 Adds Value to the Literature (RQs A1, A2.1, A2.2, A3.1, A3.2, A4, A5, C2)

Whereas the doctoral thesis by Dufour (2010) documented the emergence of the CI programme for 1 CCI (Rennes) in France, this thesis has collected data from 15 separate programmes. The programmes evaluated in this thesis are decentralised, adapted to regional economic and demographic needs. They encourage local innovation in training and learning, integrate themselves into local private public partnerships, and largely win over SMEs in terms of trust, earning them a credible place as CI advisors. One finding in this study has been the sense of movement of SMEs from one level of CI behaviour and attitude to a higher level. Not only does this thesis document the CCI CI programmes,

which is a contribution in itself, but it also presents tangible positive outcomes for French CI programmes at the company level.

The French SME CI support programmes are essentially part of Territorial Intelligence programmes (Clerc, 2004) of which the CCI are a key player. Pelissier (2009, pp 291) presents Territorial Intelligence as “*a nomadic concept, with content and contours still fluctuating*”. Two divergent approaches can be identified for Territorial Intelligence (Pelissier, 2009). First, an institutional approach, following the state instigated programmes named in the government reports of Martre *et al* (1994) and Carayon (2003) which have laid the bedrock of the programmes under investigation in this thesis. Pelissier (2009, pp 298) defines the second approach as “*essentially constructed in the academic field mixing research from economics, geography, technology sciences, communication, and knowledge management*”. The lack of integration between these potentially highly complementary approaches is a distinct feature in France (Pelissier, 2009). In fact, this thesis is one of the few studies that explicitly bridge the two approaches. The first approach is interested in the national competitiveness of France and views the regions as a means to an end. The second examines how a region can facilitate local development through building private public partnerships locally with a bottom up approach. The empirical data presented on these CCI CI programmes complements the theoretical and abstract literature on Territorial Intelligence.

7.4 Public and Private Sector Players

7.4.1 How the Research Objective 3 Has Been Answered (RQs A6 & A7)

The 15 CCI CI programme directors each gave their perspective on who are the collaborating entities from both public and private sectors (RQ A6) and which ones have the most credibility (RQ A7). In that CI as a public policy is fundamentally about public private partnerships, this is a critical question when exploring the French CI programmes. The questions were answered by dividing the responses into state, quasi-state, and private sectors entities. Using NVivo as a processing tool, both the number of times the entity was named and the percentage of CCI naming the entity was reported. This allowed a global assessment of collaborating entities which varied within decentralised programmes anchored in unique local economic environments. On the other hand the questions have

been answered subjectively, albeit by experts, who worked themselves for a key entity. In that sense there was a degree of self-evaluation by the CCIs. This may have been more of an issue for QA7, on credibility, than for Q6. The use of quotes to substantiate the answers on credibility permitted the views of the programme directors to be interpreted directly.

7.4.2 How the Findings to Research Objective 3 Adds Value to the Literature (RQs A6, A7)

The literature on collaborating entities in CI public policy is extremely thin on the ground. Bergeron (2000a) touched on the subject and more recently Larivet & Brouard (2012) conducted a study encompassing CI public policy in Belgium. In both cases, collaborating entities and their credibility were not primary research objectives. The empirical data on this topic presented in this thesis is a small beginning on a potentially rich topic. The insight on the CCI having more credibility than consultants, or that consultants without CCI backing are suspect, should be interpreted with care. The SME decision-makers had different opinions on this which will be reported in research questions related to theme 3, CI advisors.

7.5 CI Influence Drivers and Manifestations

7.5.1 How Research Objective 4 Has Been Answered (RQs A6, A7, B1.1, B1.2, B2, C3)

Research objective 4 encompassed 7 research questions. These all addressed the influence drivers and manifestations of SME decision-maker CI behaviours. RQs A6 and A7 addressed the choice of CI advisors, RQs B1.1 was to record the terminology used by SME decision-makers as perceived by the CCI CI directors. RQ B1.2 addressed terminology usage by SME decision-makers themselves collected through a questionnaire. RQ B3 investigated the constraints perceived by the CCI CI programme directors vis a vis SMEs and their CI practices. The CCI CI directors' opinion on SME decision-maker attitudes towards CI was a research question (RQ C3) but it was not used to develop the 5 attitudes used in the quantitative study. They came from the literature. The theoretical underpinning of the study, which is research objective 5, shaped the research design.

The responses from the CCI CI programme directors were processed and developed in NVivo as described in Chapter 4. While the research design cannot claim to encompass all potential influence drivers (personality is one notable absence), it can be claimed that the influence drivers are based on an established theoretical model and that the source of the data is from expert key informants.

7.5.2 How the Findings to Research Objective 4 Adds Value to the Literature (RQs A6 & A7)

The contributions from RQs A6 and A7, which examined CI advisors, have already been discussed. RQ B1.1 catalogued the terminology used by SME decision-makers to refer to information management. Terminology is presented as a manifestation of CI practice in this study and not necessarily as an influence driver. RQ B1.1 is in fact a development question whereby the array of terms reported was used in the questionnaire design, so that terminology could be tested against other themes and behaviours. Therefore the literature contribution at this stage is arguably limited, even if a catalogue of CI terminology in a funded environment is original, whether in French or English literature. RQ B1.2 quantified the CI terminology usage of the SME decision-makers thus permitting the testing of terminology against other research themes. This is reported in research objective 7 and its related RQs.

Terminology had been reported as a problem area in CI in France (Bulinge, 2002; Carayon 2003; Jakobiak, 2006; Larivet 2009; Moinet, 2010) due to the ambiguity of the concept and the often related negative activities such as industrial espionage. This study reports on a positive movement of CI terminology, towards a managerial science, with relatively few references to unethical or illegal practices. This sense of movement, that the CI concept is a dynamic construct, is consistent with findings by Brody (2008). Nevertheless, the CCI CI directors were mostly very sceptical and wary about using the term CI with SMEs, often choosing synonyms. The term CI remains a delicate issue for public policy. Despite the efforts of the CCI to promote CI awareness and concepts, many of the CCI CI directors found using the term counterproductive.

Research objective 5, which consisted of building a research design based on an established theoretical model, was a research development objective. This was defended in Chapter 4 on research design. Research objective 10 evaluates this approach, which is presented later on this Chapter.

7.6 Positioning SMEs on the CI Typologies

7.6.1 How Research Objective 6 Has Been Answered (RQ C1)

The typology from Rouach & Santi (2001) was used as a research instrument to entice insight and commentary from the interviewees. Additionally, CI programme directors were asked to comment on the SME types witnessed in their programmes, extending the Ostriches & Eagles typology (Harkleroad, 1996; 1998) to include Mockingbirds (reactive), Doves (active) and Kestrels (assault) types. This was highly effective in identifying potential manifestations for each SME type and any sense of movement from one type to another. The two typologies were complementary in that Rouach & Santi (2001) provided appropriate scope and depth and Harkleroad (1996; 1998) initiated vivid and meaningful bird analogies which facilitated communication.

7.6.2 How the Findings to Research Objective 6 Adds Value to the Literature (RQ C1)

The suitability of the Rouach & Santi (2001) attitude typology for examining SME CI behaviours is an important contribution from the qualitative research in this study. The continuum of 5 attitude types fit the varying profiles of SMEs participating in programmes even if some were particularly rare. The sense of movement and progress from one stage to another is a noteworthy finding. Additionally, the Harkleroad (1996; 1998) bird analogies, which were extended from 2 to 5 types in this study, provide a constructive communication tool for programme directors and SMEs alike.

7.7 Evaluating the relationships Between CI attitudes, Behaviours and Manifestations French SMEs

7.7.1 How Research Objective 7 Has Been Answered (RQs 1 to 20)

Research objective 7 comprised 20 research questions which tested whether statistically significant relationships existed or not between the 5 research themes (terminology, attitudes, advisors, constraints and background factors) and 2 behaviours. This involved

several hundred statistical tests as each theme had multiple sub-themes as illustrated in Chapter 6. While the statistical tests do not prove cause and effect directional influence, they do uncover how the themes are related, or indeed unrelated, to each other. This quantitative objective insight complements the qualitative research of the in-depth interviews with CCI CI programme directors. Specifically, it permits a comparison between programme director perspectives and the responses from SME decision-makers.

7.7.2 How the Findings to Research Objective 7 Adds Value to the Literature 5RQs 1 to 20)

Bergeron (2000a) summarised the French approach to CI before a coherent public policy of CI had been implemented. This is largely true for the doctoral thesis of Larivet (2002) and Bulinge (2002) which both addressed CI and SMEs in France. Smith *et al* (2008) presented a panoramic vision of French CI policies from both private and public sectors based on secondary data sources. The empirical data analysis from the 20 RQs which constitute research objective 7 provide an evaluation of key CI influence drivers in an environment whereby CI programmes have been active for several years. The inclusion of terminology as a theme is an original contribution, whereby attitudes have been investigated as influence drivers in prior work (Rouach & Santi, 2001; Wright *et al*, 2002; Taraff & Molz, 2006; Larivet & Brouard, 2012), albeit not in France. CI advisors are a focus of this study and the CCI programmes are themselves a key data set. Little research has directly dealt with CI advisors. Clerc (2004) described the role of the CCI in French CI public policy and Dufour (2010) documented the emergence of the CCI CI programme in Rennes, France. The analysis of influence driver, behaviour and manifestation relationships is new ground in CI public policy. The following sections detail the specific theme contributions.

7.7.3 Theme 1 Terminology

Terminology has been the Achilles' heel of CI whether in a funded environment (Moinet, 2010; Smith *et al*, 2010; Larivet & Brouard, 2012) or not (Fleisher & Bensoussan, 2007; Brody, 2008). The contribution of this thesis is to examine terminology from the underlying attitudes, behaviours, and affiliations that correspond to choice of CI terminology. To the best of the author's knowledge no previous research has established significant relationships of managers' terminology use to their attitudes and behaviours.

This has significance for identifying CI manifestations and linking them to specific mentalities and practices. Moreover, it lends credibility to CI public programmes because a state chosen name has been implanted, with positive connotations for most of the stakeholders. No matter which terminology is used, the findings suggest strongly that they can be associated to specific attitudes towards CI.

The transitory nature of the CI construct (Brody, 2008) should be born in mind when interpreting the role of terminology. The findings of this study indicate that terminology is a valid manifestation of attitudes towards CI. It is not however an influence driver as such. Concurring with Larivet & Brouard (2012) CI terminology in public policy can be state led but this does not necessarily diminish the panoply of terms in usage. In France nevertheless, the imposition of the term *Intelligence Economique* has coincided with improved connotations and perceptions towards the subject.

In answer to the question, do differences in terminology actually have an impact upon the activity undertaken, caution is needed. In truth, provided the CI work is being undertaken, does it really matter if an SME decision-maker finds another term for the task to be either more culturally acceptable or linguistically more appealing? The findings have shown that terminology choice can be a CI manifestation with linkages to attitudes and choice of CI advisor. It is not an influence driver in and of itself. The added value is the ability to identify and position SME types.

7.7.4 Theme 2 Attitudes

This study adds to the limited amount of research that has investigated attitude antecedents in CI (Tarif & Molz, 2006; Qiu, 2008) and the role of attitudes in CI public policy (Larivet & Brouard, 2012). The analysis conducted for RQs 12 shows that a positive attitude towards the CI needs analysis is more likely when consultants or the CCI are used as advisors. Conversely, those SMEs with no CI advisor were more likely to have negative attitudes towards a CI needs analysis. This is consistent with the findings of Salles (2006) and Bégin (2007) that the CI needs analysis is an essential starting point for SMEs and their CI processes. It also emphasises the importance of having a CI advisor. The attitude towards monitoring the competition to improve strategic decision-making had only one significant relationship, that being with consultants as advisors. The premise by Herring

(1992) and Prescott (1995) that monitoring the competition improves strategic decision making was not substantiated by the findings. This was equally true for the attitude towards whether or not the competition were monitoring the SMEs, which also only had statistical significance with consultants as advisors, but no other linkages were found. The attitude towards investing in information management had no significance with any CI advisors.

That the background factors were found to have no bearing on attitudes is consistent with TPB studies. Ajzen & Fishbein (2010) noted that background factors are mediated through attitudes and subjective norms rather than being drivers of them. The absence of any statistical relationships between constraints and attitudes came as a counter-intuitive finding. The CCI CI programme directors identified SME constraints in conducting CI. The SME decision-makers themselves showed no evidence of this influencing their attitudes or their behaviours. This is discussed further in theme 4.

7.7.5 Theme 3 Advisors

The role of CI advisors is complex. CI Advisors have significant statistical relationships with CI attitudes towards CI practices. The first assumption is that advisors influence attitudes, as indeed the qualitative results suggest. As one CI director stated: *'I have never had an SME manager come to me and ask can you help me with CI?'* An SME could however still approach an advisor for a particular need or opportunity that has emanated from their own initiative. CI Advisors also seem to be drivers of terminology. For example, the SMEs with the CCI as an advisor are more likely to use the term CI. The contribution of the study was to identify which advisors, whether from the public or private sector, was a driver of a particular attitude or a particular term. That said, the cause and effect relationship may be bi-directional between these themes, which is what the TPB suggests.

7.7.6 Theme 4 Constraints

In this study, constraints in and of themselves do not appear to be decisive in CI mind set, even if they are manifestations of SME CI practices. The literature suggests that the constraints typically found in SMEs restrict their CI abilities (Bulinge, 2002; Salles, 2006).

The lack of statistical significance between perceived constraints and the other elements of the funded environment suggests however, that these constraints may be mere excuses for inaction rather than underlying drivers of behaviour. Therefore, declared constraints state a positioning of CI mind-set but do not actually determine CI outcomes.

7.7.7 Theme 5 Background Factors

The background factors are conspicuous by their absence. The age, gender and function of the respondents had no significance at all with any of the manifestations. Size had little influence, only significant for frequency of receiving CI advice and the choice of consultants as advisors. Neither size nor sector had any significance with attitudes. As with Larivet, 2002, this study has found no significant role in company size. This contradicts work by Saayman *et al* (2008) and Levet (2008) who both determined that company size does influence SME CI processes. Internationalisation, in the context of exports, had no significance with attitudes either. This finding is consistent with that of Callot (2006). Neither sector nor region had any meaningful bearing on the research themes. As studies with the theory of planned behaviour have found in the past (Fishbein & Ajzen, 2010), background factors tend to be mediated through beliefs, attitudes and perceived behavioural control. The background factor observations are integrated into the implications for public support policy later on in this chapter.

7.8 A CI Manifestation Typology for SMEs in a Funded Environment

7.8.1 How Research Objective 8 Has Been answered

Table 9.1 presents the SME manifestations of CI practices on a multi-level typology. Building on the attitude typology of Rouach & Santi (2001) and extending the bird analogies of Harkleroad (1996, 1998) from 2 to 5 types. The data to substantiate the 4 manifestations has come from the qualitative interviews with CI programme directors for the constraint mind-set. The statistical analysis conducted between the research themes holds the terminology, advisor, and attitude manifestations into distinct types. For example, SMEs with no term for CI were more likely to have no advisor, and had either no positive significant relationships with attitudes or negative significant relationships with attitudes. To give another example, Doves represent SMEs which use some intelligence

terms, use the CCI and consultants as advisors, and were likely to have positive significant relationships with the attitudes towards a CI needs analysis and setting up a CI system. Additionally, Doves were perceived by CI programme directors to consider that limited resources restricted their CI action. Table 7.3 presents the Manifestations Typology. It is followed a description of the 5 SME types.

Table 7.3 Typology of CI Manifestations in a Funded Environment

Manifestations	Ostriches	Mocking Birds	Doves	Kestrels	Eagles
Terminology	No term	Scanning/Market Research	Business Intelligence/ Competitor Intelligence	Market Research/ Competitive Intelligence	Competitive Intelligence
Constraint Mind Set	Limited resources block vision	Limited resources restrict intention	Limited resources restrict action	Resources seen as investments	Resources seen as opportunities
Advisors	None	CCI, Chartered Accountants,	CCI, Consultants	CCI, Consultants	Consultants
Attitudes Towards CI Practices	Unaware	Mostly Indifferent	Positive attitudes toward a CI needs analysis and CI system	Positive attitudes towards all CI practices.	Positive attitudes towards all CI practices taken for granted
Attitudes (Rouach & Santi, 2001)	Passive No fear of competition No interest in CI Not invented here syndrome Minimal or no support from management	Reactive Only responds when competitors are hostile Opportunists Very limited budget for CI Task driven attitude Ad hoc basis Top management a non- believer in CI	Active Actively observing the competition Limited resources Operational network Trying to analyse and interpret Unwilling or unable to have a long term vision on CI	Strategic Hunt for strategic information Significant resources Human intelligence valued Monitoring competitors Top management support	Pro-active An offensive stance/war mentality Very pro-active in managing the CI process Sophisticated tools/experts Team approach/CI integrated into decision making

Overlaying the five attitude types, all of which were found present by the CI programme directors in this study, are four manifestations of CI, presented in the grey shaded area.

- **Terminology** positions the CI concept in the mind of the SME decision maker and expresses probable relationships with advisors, constraints, and attitudes.
- **Constraint mind-set** refers to SME visions on resources, such as time, expertise, finance, software or ambiguity but these are more likely to be perceptions than realities.
- **Advisor(s)** denotes the likely source of advice to which SME decision makers will turn for their CI needs.
- **Attitudes** are presented in two sets. First the attitudes towards specific CI practices, and second, the attitudes identified by Rouach and Santi (2001).

Five analogies have been chosen to label the progressive manifestations and attitude types. Birds were chosen as a thematic categorisation as they are short, easy to remember, meaningful, and easily related to SME managers. Ostriches and Eagles have been used in the past to indicate company attitudes towards CI practices (Harkleroad, 1996) albeit in a North American corporate context. One CI programme director interviewed in this study referred to a passive SME as being an ostrich, sowing the seed of this classification. Sadok & Lesca (2009, pp.181) stated that: *‘The proposed environmental intelligence model to the SMEs must be built on the simplest possible formalisation.’*

Ostriches are in a state of denial. They consider that they have no need of a term to refer to information management and they are likely to have no CI advisor. They did not exist for all 15 of the CI programme directors but for others they were the most typical. **Ostriches** are blinded by a lack of resources. Information is considered free, omnipresent, and not particularly relevant for the entity’s future.

Mocking Birds are likely to use the terms Scanning or Market Research. Resource constraints however restrict the SME’s intentions to conduct CI practices. Despite their reactive attitudes they probably have some contact with CI advisors, such as chartered accountants and possibly the CCI. The key insight from the CI programme directors was that many **Mocking birds** had been transformed into **Doves**.

Doves are numerous. They are willing to use ‘intelligence’ terms whether that be Business, Competitor, Strategic or Competitive Intelligence. They have a desire for action but limited resources inhibit progress. They are likely to be working with the CCI and consultants to some degree. Going beyond scanning and other data collection there is an attempt at insight management, to interpret information, to change behaviours but ultimately limited resources hold them back.

Kestrels are at ease with intelligence terms and concepts but may still refer to their practices as Market Research. Resources are seen as investments. The use of consultants is more likely than that of the CCI but both could be solicited. Collectively these manifestations are very desirable but the transition from Doves to Kestrels may be too much to instigate by public policy intervention alone. None of the CI programme directors spoke of witnessing this transition.

Eagles use intelligence terms, most likely Business or Competitive Intelligence. Their war mentality, unlimited resources and selective use of consultants are all features which make them exceptional as SMEs. They are likely to be partly owned by a larger company. They were rarely seen by the CI programme directors but their existence was confirmed.

7.8.2 How the Findings to Research Objective 8 Adds Value to the Literature

The Manifestations Typology builds on the work of Rouach & Santi (2001) and Harkleroad (1996; 1998) to provide a means to identify SME types in a publically funded SME support environment for CI practices. It permits a segmentation of SMEs, a road map for advancement, and an alignment between CI manifestations and specific actions which may be appropriate by public or private interventions. The conferences, SME manager exchanges of shared experiences together with the widespread media coverage of CI concepts in France have contributed to transforming Ostriches into Mocking Birds. The CCI has been an instigator and witness of this trend. While transformation of Doves into Kestrels and of Kestrels into Eagles is both conceptually and economically desirable, it may not be the primary goal of public policy intervention. The CCI had not spoken of these higher order transformations. The resources needed for these higher order transformations are substantial and the expertise to facilitate these transitions may not be available in the public sector.

This research postulates that public policy intervention should focus on transforming Mocking Birds into Doves. Conducting a CI needs analysis and setting up a CI system are feasible interventions which are consistent with this goal. Additional applications of the Manifestations Typology are presented when discussing public policy contributions in this Chapter.

7.9 Relating the Findings to the Contextual Environment of the Study

7.9.1 How Research Objective 9 Has Been Answered

The contextual environment of the study discussed in Chapter 2 is reviewed here in light of the findings and the manifestations typology. Specifically, the contextual environment encompasses the origins of the CI concept, CI in France, the French CI state system, the CCI, SMEs, and the role of attitudes and awareness. That said, all firms, especially SMEs, are the main target for French CI policy.

7.9.2 How the Findings to Research Objective 9 Adds Value to the Literature

The Origins of the CI Concept

While the origins of CI vary from one country to another France has clearly demarked itself over the past two decades with government sponsored initiatives. The state inspired programmes, of which the CCI CI programmes are an integral part, have helped to implant the term CI in both the CCI programmes and to some degree with the SME decision-makers. The findings of this study underline the originality of the French CI construct. The ‘funded’ environment explored in this thesis does not exist in the English speaking world. In addition to the military, economic, ethical, and technological roots discussed in Chapter 2, France has added a government policy heritage to CI.

CI in France

Recent French governments have been pro-CI as public policy but at the same time, hesitant to go beyond the third phase of CI evolution identified by Prescott (1995). That is, CI as decision making. CI as a ‘core capability’, the fourth, and predicted current phase of CI is arguably only present in Kestrels and Eagles, of which relatively few existed in the SME communities of the two most economically vibrant regions constituting his study. Ostriches do not consciously practice CI. Mocking Birds and Doves are more numerous, represent CI as decision-making, and are the primary targets of the CI programmes. That CI as a core

capability exists in the larger companies of the French corporate world is of course a legitimate postulation.

The higher order levels of CI in France, as proposed by Jakobiak (2006), include the national, transnational and international levels. These have not been the focus of this study. Nevertheless, there is interaction between all levels and the sample frames of SMEs and the CCI, respectively the company and intermediate levels, are an integral part of CI in France. Evidence to substantiate this interaction surfaced mostly through the interviews with the CCI CI programme directors. The former inter-ministerial representative for CI, Alain Juillet, was mentioned by 53% of the CCI interviewed. That said, only a few of the CCI spoke about the 'poles of competitiveness' chosen by the government for strategic emphasis. No compelling evidence was found linking the CI programmes directly with these chosen industries and clusters. In contrast, financing of SMEs for CI facilitation was often targeting those firms which exported. National economic aspirations of France would appear to be mediated through the relative autonomy of the CCI in how they implement their CI programmes.

Efforts to extend French thinking and practice internationally underline this nationalist dimension and the inherent ingrained constraints. French attempts to integrate the term and practice of *Intelligence Economique* at the EU level in the 1990's failed (Masson, 2004). In a green paper intended to stimulate debate *Intelligence Economique* was translated literally as Economic Intelligence, a term which has little or only negative connotation in English (Masson, 2004). In more recent EU discussion papers Masson (2004) noted the more neutral terms of technology watch, business watch, and economic information have been used.

Former Prime Minister François Fillon (Premier Ministre, 2011) stated that the objective for the State was not to practice CI for businesses, but to aid them to practice CI, notably by setting up training programs. No evidence was found to suggest that the CCI CI programmes distort competition. It is more a question of assisting small enterprises which lack CI awareness and basic CI skills.

The French SME CI support programmes are essentially part of Territorial Intelligence programmes (Clerc, 2004) of which the CCI are a key player. The programmes evaluated in this thesis are decentralised, adapted to regional economic and demographic needs. They encourage local innovation in training and learning, integrate themselves into local private

public partnerships, and largely win over SMEs in terms of trust, earning them a credible place as CI advisors. One finding in this study has been the sense of movement of SMEs from one level of CI behaviour and attitude to a higher level. Statistically significant relations exist between SMEs attending a CCI CI event and positive attitudes towards CI practices. Both findings are defended as tangible positive outcomes for French CI programmes at the company level.

Pelissier (2009, pp 291) presents Territorial Intelligence as “*a nomadic concept, with content and contours still fluctuating*”. Two divergent approaches can be identified for Territorial Intelligence (Pelissier, 2009). First, an institutional approach, following the state instigated programmes named in the government reports of Martre *et al* (1994) and Carayon (2003) with have laid the bedrock of the programmes under investigation in this thesis. Pelissier (2009, pp 298) defines the second approach as “*essentially constructed in the academic field mixing research from economics, geography, technology sciences, communication, and knowledge management*”. The lack of integration between these potentially highly complementary approaches is a distinct feature in France. In fact, this thesis is one of the few studies that explicitly bridge the two approaches. The first approach is interested in the national competitiveness of France and views the regions as a means to an end. The second examines, sometimes abstractly, how a region can facilitate local development through cross-functional applications of social sciences in a CI context.

The Chambers of Commerce and Industry

The conferences, at which SME managers exchange shared experiences along with the widespread media coverage of CI concepts in France have contributed to transforming Ostriches into Mocking Birds. The CCI has been an instigator and witness of this trend. Whilst the transformation of Doves into Kestrels and of Kestrels into Eagles is both conceptually and economically desirable, it is unlikely to be the primary goal of public policy intervention. Indeed no CCI had spoken of desiring such. The resources needed for these higher order transformations are substantial and the expertise to facilitate these transitions is most likely not easily acquired within the public sector scenario.

The evidence suggests that public policy intervention, such as the CCI programmes, can be highly effective in transforming Mocking Birds into Doves. Conducting a CI needs analysis

and setting up a CI system are feasible and achievable interventions which are consistent with this goal. The theory of planned behaviour suggests that key referents, together with the individual's predisposition to engage and follow the referents advice, shapes attitudes and intentions. It is therefore argued here that the CCI is a prime mover in this scenario and that they can work alongside other actors both public and private, to achieve a better result for their SME community.

By consulting the typology, it would be possible for both CCI CI programme directors and SME decision makers to diagnose their current and desired position. This would provide a platform for the production of a goals and milestone plan which would identify the required resources and investment requirements. These need not be large scale and may be satisfied in the early transformation stages by a mix of both public and private sources, internships and contract specific staff appointments. Private sector resources would most likely be required for the higher order transformation and CCIs would be well advised to allow that to happen. In fact it would free up their time to concentrate on those SMEs making their first or second transformation. Having already gone through a similar process in preceding stages the SME aiming for higher order performance would be in a better position to successfully secure such resources from private bodies.

The CCI CI programmes were found to be innovative, relatively autonomous, unafraid to experiment, and trusted by the SMEs. The CCI in other European countries may not be so well positioned to promote CI concepts. The researcher was surprised how little each chamber knew about other chambers' CI programmes. The practitioner publication which summarised the findings from the 15 interviews was circulated to the participating chambers. It can therefore be claimed that this study has in fact disseminated CI public policy best practice in France.

SMEs

The informal nature of decision making in SMEs (Bulinge, 2002; Salles, 2006; Bégin *et al*, 2007) suggest that the supportive role of the CCI should not be overly prescriptive and should embrace flexibility and spontaneity. The responses of the CCI CI directors emphasised that resistance from many small businesses still hold. They highlighted the lack of time, CI not being their priority, and that they are very reactive to events. Conversely, a sense that attitudes can, and have, changed is conveyed, and that the roles of the CCI have played a part in this transition. According to the CCI CI programme directors the conceptual ambiguity of the CI

concept was a sizable barrier for their SMEs. However, no significant relationships were found between SME attitudes and SME perceived constraints yet there is disagreement in findings between the CCI CI directors and the SME decision-makers. What is not in doubt, is that implementation of the CI programmes has created both movement and improvement within the SME community. The findings of this study have shown that SMEs can and do progress in identifiable stages of CI practices within a funded environment. The implications for securing competitiveness in countries which do not support their SME community in this way are significant. The findings of this research have revealed that public funds are best deployed on a specific SME profile. A “one-size fits all” approach simply does not work so greater effort has to be put into tailoring and customising programmes to secure best practice. The manifestations typology presented in this thesis provides a means for SMEs to position themselves and for CI policy bodies to target specific profiles.

The Role of Attitudes and Awareness

The central role of attitudes and awareness, substantiated by the literature, was the starting point of this thesis. Prior work typologies have integrated attitudes and awareness either implicitly (Harkleroad, 1996; 1998; Larivet, 2002) or explicitly (Rouach & Santi, 2001; Wright et al, 2002). The semi-structured, exploratory interviews, focused on the Programme Director’s impression of SME manager attitudes towards CI concepts as well as the nature of the CI programme itself. The opportunity was also taken to explore how the CCI had tried to change attitudes and behaviours. The typology from Rouach & Santi (2001) was used as a research instrument to entice insight and commentary from the interviewees. Additionally, CI programme directors were asked to comment on the SME types witnessed in their programmes, extending the Ostriches & Eagles typology (Harkleroad, 1996; 1998) to include Mockingbirds (reactive), Doves (active) and Kestrels (assault) types. This was highly effective in identifying potential manifestations for each SME type and any sense of movement from one type to another. This study has substantiated the value of typologies to examine SMEs in a funded environment.

Awareness of CI has also been elucidated by the inclusion of terminology in the research design. The statistically significant relationships between those SMEs which have no term and the other elements of the research design suggest that unawareness is potentially disastrous for an SME. These Ostriches have no CI advisor, negative attitudes towards CI behaviours, and are overly swayed by perceived constraints. Conversely, those SMEs using ‘intelligence’

terms to describe their information management are more likely to have positive attitudes towards CI behaviours. The CCI CI programmes can claim tangible results as CI awareness generators and attitude change interventions. Despite this, the promotion of the term CI to SMEs has only had limited success with only 11% of them using it. Indeed, many CCI were circumventing use of the term CI themselves.

SMEs used a total of 15 terms to define the generic ‘information management’ activity which can only add further to the view that SMEs are really not clear as to precisely what CI activity comprises. Inevitably, this makes the task of CCI CI Programme Directors more complex and difficult, especially as a number of significant relationships were found between terminology usage, attitudes and choice of advisors.

7.10 Evaluating the Findings through the Theory of Planned Behaviour

7.10.1 How Research Objective 10 Has Been Answered

As a guiding theoretical framework the Theory of Planned Behaviour has assisted in research design, data collection and in interpreting results for cause and effect exploration. It is argued therefore that the CI Manifestations typology presented as an outcome of this thesis is theory laden. The addition of terminology as a theme has permitted a thorough exploration of its role in relation to the other themes. The research design directly measured two behaviours in place of intention, not as a predictive model but rather as an exploratory model for investigating influence drivers and manifestations. The TPB framework has instilled consistency into the data analysis and display in terms of themes and sequencing. The analysis of the relationships between the themes and the behaviours has identified the presence or not of statistically significant relationships but not the direction of cause and effect. The themes have been defended by their anchorage in the qualitative data from in-depth interviews and their presence in the literature. While the background factors are not exhaustive, they have permitted the testing of influence factors in multiple scenarios, contributing to the comprehensiveness of the study. It is acknowledged nevertheless, that the TPB has not been used as a predictive model.

7.10.2 How the Findings to Research Objective 10 Add Value to the Literature

The results from this study suggest that demographic characteristics have little bearing on CI behaviours or attitudes towards CI practices. Neither personality traits nor demographic

characteristics account for much variance for human behaviour in general (Fishbein & Ajzen, 2010). The results from this study have uncovered the significant relations that exist between attitudes towards CI practices and Manifestations of CI. To that end, this is a new application for the Planned Behaviour Theory even if its precursor, the Theory of Reasoned Action, has been used to predict behavioural intention in small businesses (Thompson & Panayiotopoulos, 1999) and for scanning practices in larger companies (Qiu, 2008). The originality of this study is using the TPB framework in public policy support environment.

The underlying assumption of choosing the Theory of Planned Behaviour is that CI practice in small businesses is heavily dependent on human behaviour. This assumption has been confirmed not only by the literature on CI practice but also by the findings from both qualitative and quantitative data sets in this study. There also need to be identifiable attitudes which correspond to the desired behaviour. This study has proposed 5 attitudes. The statistical analysis highlights the relationships between the attitudes towards CI needs analysis, setting up a CI system, and investing in information management, and the key referents, named as CI advisors. The attitude towards monitoring the competition had no significant relationships with any of the key referents. As formally discussed, there were no significant relationships between constraints and attitudes and none between background factors and attitudes. In terms of explicit relationships with behaviours the only significant finding was between the attitudes towards a CI needs analysis and participation in a CCI CI event. This study has taken tentative steps towards implementing the Theory of Planned Behaviour in an SME funded environment, which could facilitate future behavioural intervention studies.

A theory that has been tested in this research is whether CI terminology use can be related to behaviour and attitude. The findings have indicated that CI terminology use (or indeed, no use of terminology) does have statistical significance with attitudes towards progressive CI practices and the choice of CI advisor. Notably terms which use the word 'intelligence' had more significance with the CI progressive attitudes. The CI literature had suggested that CI terminology use is dynamic and evolving (Fleisher & Bensoussan, 2007; Brody, 2008). An original contribution of this study is that terminology use can reflect attitudes, choices of CI advisors, and identifiable stages of SME CI manifestations.

7.11 Policy Contributions

This research has identified progressive CI manifestation stages through which CI programmes can facilitate SME advancement. The CI manifestation typology highlights key stages where SME should be targeted, it provides a road map of where they should be going in terms of CI development, and finally, it provides tangible evidence of results. This encompasses the roles of key CI advisors, public or private, at different stages. It identifies likely terminology to be used within each stage, a constraint mind-set, and underlying relationships between attitudes, terminology and advisors. All of these are original contributions build on the Rouach & Santi typology (2001), which itself has proved a constructive tool for CI programme directors. This is the first study that has used the Rouach & Santi typology (2001) in a funded environment of CI public policy. It was notable that several of the CI programme directors asked if they could keep the typology which was extended to them in the interviews.

Bergeron (2000a) considered France as a particularly significant country to investigate CI as a public policy due to the high degree of government reflection and involvement and the noteworthy programmes in the field, especially the CCI. This thesis has illuminated the nature of this state inspired SME CI support with an original research design and significant findings. The qualitative stage has not only shared local and decentralised initiatives amongst the 15 participating programmes but also a much wider audience through international publications.

Whether there should be a global role out of SME CI support programmes remains an open question for many countries. What this study has shown is that CI public policy can facilitate SME progression in terms of CI practices, attitudes towards CI practices, and overall CI awareness in a French context. This implies that the SMEs which have participated in these programmes are using their informational assets more effectively. Additionally, they are more aware of defensive CI concepts to protect propriety information. Other benefits include the link between CI practices and an SME capacity to innovate (Tanev & Bailetti, 2008). In France, the regional economic development, which is referred to as Territorial Intelligence, is an additional positive outcome. The French CI public policy is integrated with government directed clusters, built around sectors of competitiveness, that view progress in terms of regional and national coordination (Moinet, 2008; Pelissier, 2009; Pautrat & Delbecque, 2009).

As Wright (2011) pointed out, even if French public CI programmes fail to improve SME competitiveness it is an important lesson for countries around the world. The findings of this study suggest the French programmes do play a positive role in SME advancement, that attitudes do change, and that progressive attitudes towards CI practices are present in the two most dynamic regions of the French economy. Additionally, this study is potentially a bridge to many future investigations. Smith *et al* (2010) was cited by (Larivet & Brouard, 2012) to position findings on CI public policy in Belgium.

This study has focused on behavioural and attitude antecedents. Organisational learning manifests itself in both cognitive and behavioural ways (Garvin, 2000; Argote & Miron-Spektor, 2009), instilling procedures, exchanges, and a culture for sharing which are often lacking in SMEs (Marchesnay, 2004; Guilhon, 2004). CI processes have been regarded as attitudes towards organisational learning (Wright *et al*, 2009). A proposition for future research is to investigate whether the SME progressive stages of CI practice and attitudes constitute organisational learning or not. This will be discussed in the next chapter as it is a recommendation for future research and not a contribution.

A key behavioural measurement in the study was the participation, or not, of an SME in a CCI CI event. What is meant by a CCI CI event has been documented in the qualitative findings (Table 5.2) in chapter 5. The contribution of the study is noteworthy in that neither background factors nor perceived constraints had any significance on whether an SME participated or not. This in itself is a contribution for current and future CI policy interventions.

SMEs which had participated were more likely to have positive attitudes towards a CI needs analysis. Those that had participated were more likely to use the terms Marketing Research and Competitive Intelligence, which themselves have significant relationships with positive attitudes towards CI practices. SMEs which had participated in a CCI CI event were also more likely to have the CCI as an advisor. Additionally, those SMEs which had not participated in a CCI CI event were more likely to not have any CI advisors and to have no term for 'information management'. While directional cause and effect may be debatable on these relationships, the theory underlying the research suggests that the SME decision makers perceived pressure to perform behaviours from key referents is shaping attitudes. What can be claimed is that those SMEs which have participated in these CCI CI events have more

positive attitudes towards CI practices. This is tangible evidence of positive outcomes from CI public policies.

The planning, collection, analysis and dissemination of findings is commonly known as the intelligence cycle (McGonagle, 2007) and has been a reference point for CI definitions (Brody, 2008) as well as a common framework for teaching CI concepts (Bulinge, 2006). The intelligence cycle has received criticism in practice however, as firms often fail to make it effective in a company setting (Bulinge, 2006; McGonagle, 2007; Moinet, 2011). It is inappropriate for individuals who have to both provide and use CI as is normally the case in an SME (McGonagle, 2007). The contribution of this thesis for practicing SME managers is to place the emphasis on the individual, his or her attitudes towards and manifestations of CI practices, and how they relate to the larger business environment. Many tactical daily decisions by SME managers are made spontaneously, without process, when interacting with clients, suppliers, competitors as well as with employees who themselves are vectors of information from both internal and external sources. The premise of this thesis is that attitudes and character drive CI in SMEs. The exploratory research model has identified statistically significant relationships between SME decision maker attitudes, CI advisors, and CI behaviours. This is presented as a promising first step towards more robust theory development on behavioural change interventions with implications for both SMEs and policy initiatives.

Key findings of the thesis from a public policy perspective are presented on the left hand side of Table 7.4 overleaf, which summarises the public policy implications of the study. These specific public policy implications are of value in France where programmes are on-going as well as other countries which are looking at or implementing CI support programmes for SMEs.

Table 7.4: Implications for SME CI Public Support Policy

Key Findings	Implications for SME CI Public Support Policy
Public policy interventions succeed for transformations from Ostriches to Mocking Birds; from Mockingbirds to Doves, but higher order transformations towards Kestrels and Eagles may be unrealistic for public support initiatives	<u>Ostrich to Mockingbird</u> transformations can be achieved by Conferences, SME managers exchanging shared experiences, and widespread media coverage of CI concepts <u>Mockingbird to Dove</u> transformations can be achieved by Conducting a CI needs analysis and setting up a CI system <u>Higher order</u> transformations require substantial resources and the expertise to facilitate these transitions is most likely not easily acquired within the public sector scenario
CI advisors are very important for SMEs to succeed and progress with their CI	Public policy should encourage both public and private CI advisory entities to engage with SMEs
Terminology is an important manifestation of CI performance	Public support programmes should monitor, instil and encourage professional terminology usage
SME perceived constraints are little more than excuses for inaction	Public policy initiatives have to confront perceived constraints (resources, conceptual ambiguity), whether from their own personnel or from SMEs
Attitude change is a fundamental and critical step in advancing CI performance	Public policy support should target attitude change initiatives rather than information exchange initiatives
Company size, sector, and regions are not determinant indicators of SME CI performance or CI needs	The subjective nature of CI manifestations (attitudes, terminology, chosen advisors) suggests a close relationship is needed between public sector providers and SMEs for targeting purposes. Convenient quantitative data on size and region should only be considered as starting points.

7.12 Methodology Contributions

This study has taken a sequential mixed methods approach within the pragmatic paradigm. The chosen order of qualitative to quantitative was chosen so that a research instrument could be formulated from key informants. The quantitative analysis has allowed specific research questions to be tested. The underlying theory which has also guided research design supports the researcher's belief that facts and theory are indivisibly linked and that the findings are theory laden.

The choice of mixed methods for CI & IM has been defended on the basis of the interdisciplinary cross boundary nature of the subject (Wright, 2011). While methods clearly can be mixed (Denscombe, 2008; Teddlie & Tashakkori, 2009; Denzin, 2010) the researcher

has to justify how and why it is done (Bazely, 2004). The danger of using a pragmatic paradigm is to believe that ‘anything goes’ (Bazely, 2004). A strong attempt has been made to justify each step and to state clearly the intentions.

This study is one example of how to integrate mixed methods for both analysis and data display. The rich findings of this study would not have been possible with purely qualitative or quantitative approaches. Moreover, the perspectives of CI programme directors can be compared to those of SMEs which uncovers lessons for both. Calof & Wright (2008) suggested that the scope of CI covers the entire competitive environment and not just the competition. In that there is a consensus that CI (French versions or other) is both broad and interdisciplinary (Silem, 2006; Calof & Wright, 2008; Moinet, 2010; Wright, 2011) mixed methods may contribute greater insight than so called mono-methods. The preliminary interpretist approach with CI programme directors as key informants set a rich foundation from which meaningful quantitative analysis could transpire. The double perspective of CI programme director, with extensive field experience to that of SME decision maker, with a small entity perspective has been effective in eliciting insight. For example, perceptions from CI programme directors were not always consistent with SME decision makers’ responses. In other words, there have been mutual illuminations between the two data sets. An interesting footnote, perhaps evident, is that this research design would probably not have worked in a country like the UK where accessible key informants for SME CI practices may not exist.

7.13 Literature Contributions

7.13.1 How Research Objective 11 Has Been Answered

The following publications which are presented chronologically were all published during the PhD study period. Following the reference there is a brief description of the how the publication moved the thesis forward. This partly maps the journey of the PhD process, a theme which is elaborated in Chapter 10.

Smith, J.R. (2008) ‘Efficacité de la Veille Concurrentielle et Conséquences Stratégiques’, pp.181-199 in Larrat, P. (Sous la Direction), *Benchmark Européen de Pratiques en Intelligence Economique*, Paris, France: L'Harmattan

Original English title:

The Effectiveness of Competitive Intelligence Techniques and Strategic Outcomes: An Anglo-French Comparative Study

Published during the early days of starting the PhD, this book chapter originated as a conference paper in 2005. Translated by the editor, and not myself, it is my only French language publication. The subject focused on comparing and contrasting a French CI transfer model (Bulinge, 2002) with the CI typology from the UK (Wright *et al*, 2002). In hindsight, it was an important conceptual step to position French and English CI conceptualisation.

Smith, J.R. & Kossou, L. (2008), 'The Emergence and Uniqueness of Competitive Intelligence in France', *Journal of Competitive Intelligence and Management*, Vol 4 No 3, pp 63-85

As the only English language academic publication on CI in France this article was an important step for me personally as well as for the field. Largely written before the PhD was officially started it was an essential step in developing the context of the PhD. The co-author provided insight from a French mind set with particular experience and contributions on CI research and education in France.

Smith, J.R. (2009), 'Competitive Intelligence in SMEs: A Literature Review and Research Agenda', Academy of Marketing, 7-9 July, Leeds Metropolitan University

Acceptance of a competitive paper in a blind reviewed international conference was all the more noteworthy as it was a literature review. I have to acknowledge with the benefit of hindsight however, that there were too many omissions and my research agenda propositions today are considerably more mature. Nevertheless, it obliged me to present and defend visions on CI literature in an international forum.

Smith, J.R., Wright, S. & Pickton, D.W. (2009), 'Competitive Intelligence Programmes at French Chambers of Commerce', *CIMITRI*, DMU, Leicester, ISBN: 1857214021 9781857214024

This was not an academic article and the editing process was within the supervision team. Nevertheless I consider it an important outcome. First, it extended research results to practising managers. Second, it fulfilled a promise to CI directors who were interviewed that their insights would be shared between them. Third, it strengthened the validity of the findings as interviewees could remark on how their remarks had been interpreted and presented. Fourth, even if circulated in English language (which was a problem for some interviewees) it was written in a non-academic format which may have increased manager comprehension and interest.

Smith, J.R. , Wright, S. & Pickton, D.W. (2010) ‘Competitive Intelligence as Public Policy in France: Making a Difference in the SME Sector’, Academy of Marketing Annual Conference, 7-9 July, Coventry University, UK (Best Paper in Track Award)

As an important step in the editing peer reviewed world of publishing this conference paper was pivotal. Moreover, it attracted attention to the field of CI within the academic Marketing community.

Smith, J.R. , Wright, S. & Pickton, D.W. (2010), ‘Competitive Intelligence Programmes for SMEs in France: Evidence of Changing Attitudes,’ *Journal of Strategic Marketing*, Vol 17, No 7, pp 523-526

There is little doubt that this is my highest ranked academic contribution to date. Confirming the effectiveness of the Rouach and Santi (2001) attitude typology for SME evolution in a funded environment, this publication has resonance and pertinence for future research and public policy in this field.

Smith, J.R., Wright, S. and Pickton, D.W. (2011), ‘Competitive Intelligence Attitudes, Effectiveness and Constraints: Does Size Matter?’ Academy of Marketing, Liverpool University, 7-9 July

As an early attempt to write up quantitative findings, this paper highlighted the need for deeper statistical analysis and theory development. Thus, the contribution of this paper was to reassess quantitative analysis.

CHAPTER 8: Limitations

8.1 Introduction

One potential limitation of this study lies in its exploratory nature in a developing field. CI as public policy, with SMEs as a particular focus, is a recent development with very little literature in comparison to main stream disciplines such as Strategy or Organisational Behaviour, for example. It could be argued nevertheless that this thesis will contribute to enlarge this field. As an academic project the inevitable schedule and resource limitations at times had to be factored into research design and field work options. Despite these inherent constraints it can be argued that sampling and methodological positioning have been remarkably inclusive. The adoption of Mixed Methods as an approach inevitably leads to some compromises, albeit acknowledged as a pragmatic stance. These points are discussed as well as the theoretical and analytical imperfections inherent in any study of this type.

8.2 The Fuzziness of Competitive Intelligence

Even before language equivalence issues are discussed, the construct of Competitive Intelligence is in need of defence. Ten years ago Bulinge (2002) spoke of a blurred concept and even more recently Moinet (2010) refers to the ‘impossible definition’. Moinet (2010) also argues that time alone has proven the validity of the CI concept. It is still today a feature of French economic policy at every level of government and despite cuts in CCI budgets, CI programmes continue today. It has not been a passing fad. Research in the English speaking world on CI continues apace. This thesis has taken the definitional issues head on by examining the underlying attitudes and behaviours of SME decision makers, their antecedents, and how they are linked with the CI terms they use. That academics dispute the terminology is perhaps missing the point.

Attempts have been made to address the equivalence issues that arise with the translation of *Intelligence Economique* as Competitive Intelligence. It could be argued that ‘Economic Intelligence’ would be another option but it does raise its own problems in terms of connotation and has little significance in the English language literature in this field. Although

working in two languages has stretched resources it has also bridged two bodies of knowledge, the evidence being that there is much to learn from each other.

8.3 Data Collection

The data collection has been cross-sectional, capturing data at a point in time. Inevitably there is also a lag between data collection and presenting results. Moreover, a longitudinal study, such as a panel, would have permitted deeper insight into the progressive stages of SME evolution with their CI practices. Unfortunately a longitudinal research design was not possible in this research degree timeframe.

Some results have been dependent on the subjective views of managers whether orally in interviews with programme directors or with self-response questionnaires with SME decision-makers. Measures have been taken to verify the validity of the CCI interviewee as reported in Chapter 4. Similarly, responses from the survey were verified for their consistency, authenticity and seriousness but as always more checking would have been desirable.

The sample for the CCI interviews was considered representative of the CI programmes in existence at that time. Interviews were carried out with willing subjects from CCIs which were known to be providing active CI programmes for the SMEs in their region. There was clearly a benefit to the programme directors in engaging with this study but significant steps were taken in the interview process to secure unbiased answers and challenge over-optimistic views. Many more CCIs were contacted than interviewed and many were in the early stages of setting up their programmes or had no structured programme. Inevitably these had to be excluded. The detachment of the researcher from the interviewees' local context arguably has enhanced objectivity. Certainly the advice from Creswell (1998 pp 114), not to do qualitative research '*in one's own backyard*' has been well respected. A great deal of effort and time was invested to achieve the 15 interviews and it set a good foundation for the study. Large cities such as Paris, Lyon, Rennes, and Lille had experienced and established programmes in dynamic economic environments enriching the sample.

Telephone interviews were conducted for four of the 15 semi-structured interviews. It could be argued that the face to face interviews were richer in exchanges. Nevertheless the same

questions were asked to all interviewees and the findings of the four telephone based interviews were not noticeably different. It was considered the inclusion of the four interviews contributed insight and depth to the study. Exclusions on the basis of differing data collection methods were not considered warranted.

The sample size for the quantitative study was 176 out of a population of 356. Sample sizes for nominal data need to be bigger than for continuous or ordinal data (Bartlett *et al*, 2001). Both nominal and ordinal data were collected in this study. While this is an appropriate sample size for both data types (Bartlett *et al*, 2001) the margin of error would have been reduced with a bigger sample size.

Approval was requested and granted from the DMU research office as to whether it was permissible to use an online panel. In an ideal world, a preliminary sample would have been taken to improve the questionnaire wording having conducted statistical tests on the results to therefore improve a second more refined questionnaire. Neither the time nor the financial resources were available for this. The questionnaire was piloted twice but in a mostly qualitative manner.

8.4 Theoretical Considerations

As a so called middle-range theory, the Theory of Planned Behaviour has been conducive to facilitating and structuring research design. The guidance in interpreting notably the quantitative data has been significant and overall it has enabled the study to be positioned within established research boundaries. Nevertheless, the theory has its weaknesses. A systematic review of published research using the theory identified that the theory had accounted for 27% of the variance in behaviour and 39% in intention (Armitage & Conner, 2001). This study has used the theory for explanatory purposes more than for prediction. The strict application of the Theory of Planned Behaviour to the research design would have arguably tightened focus but at the cost of diminishing the rich exploratory nature of the study. For example, the underlying significance of relationships between terminology and attitudes would not have surfaced within a research design based religiously on the Theory of Planned Behaviour. Terminology may be presented as behaviour. One could also suggest that individuals have attitudes towards terminology use. It is more convincing to consider terminology use as a manifestation of CI mind-set. At the same time, using the theory as a

framework for investigating attitudes antecedents and their linkages with behaviours has been essential for research design and data interpretation.

8.5 Analysis

Chi-square can establish a highly probable existence of relationships between two variables. There can however, be a third variable which the researcher has not identified (Bosia, 2010). For example, a relationship could be found between size of an SME and the attitude towards conducting a CI needs analysis, only to overlook the role of resources, which is not the same variable as size. The researcher has been alert to such hidden third variables but they can never be fully eliminated.

The developing nature of the field under study combined with the time and monetary constraints inherent in an academic study have resulted in some limitations. Identifying these potential shortcomings has assisted attempts to mitigate their influence on research findings. Despite the limitations identified in this Chapter the thesis is particularly rich in terms of opening new avenues for future research. The next Chapter addresses the potential research topics that can build on the findings of this study.

CHAPTER 9: Areas for Future Research

9.1 Introduction

As an exploratory research project in a developing field one of the important outcomes is setting a research agenda. Presented from a macro, country/government level to a micro, human behaviour level, the following research areas will be discussed. Government involvement has been heavy in France and as such provides a rich area for investigation. Closely related to governmental issues are the policy implications and how they can be researched. CI intervention entities such as the CCI or consultants, follows on from policy in a public private partnership context. The methods used by such entities to change behaviours and attitudes are discussed as well as a special focus on Organisational Learning. Although not an explicit research objective of this thesis, Organisational Learning has gained attention in recent CI literature (Wright, 2011). There would appear to be convergences between progressive stages of CI development in SMEs and higher order levels of organisational learning. Related to this incremental progression of higher order CI capabilities, whether linked to Organisational Learning or not, is a need for qualitative studies to examine closely how SMEs actually progress from one stage to another. Future research avenues for CI terminology are also proposed. Finally, this chapter will discuss future directions for CI attitude antecedent studies, notably in an SME context.

Language has been identified as a barrier to the investigation of best practice in CI with France named as an example from the English speaking world perspective (Wright, 2011). Bergeron (2000a) also spoke of the language barrier in researching governmental approaches to assisting SMEs in a CI context. Bi-lingual or possibly tri-lingual researchers who can straddle the language barriers are needed to encourage the type of research undertaken by this thesis.

9.2 Country Level Analysis

Many country level reports have been written on CI practices. Often they have lacked common measurement frameworks (Wright & Calof, 2006) or they have led to exaggeration, poor documentation, and scarce examples (Bergeron, 2000a) quoted by Larivet & Brouard (2012). Country comparison may be a way forward whereby a common frame of reference could compare and contrast CI approaches. The seminal work by Bergeron (2000a) did just this with eight countries, with Quebec as a central reference point, and published in French. Government intervention and government policies are not inevitable in country level analysis of CI practice. The UK is a notable example whereby government initiatives are particularly light (Bergeron, 2000a; Wright *et al*, 2004). Country blocs, such as the EU, have already been the focus of research (Bergeron, 2000a) and CI initiatives (Masson, 2004). Future country level CI research needs to transcend linguistic and cultural barriers to focus on how companies can advance their CI practices. Table 9.1 contains the key questions for future country level research.

Table 9.1 Research Agenda: Country Level

CI Topic	Key Questions
The relationship between the SME community and the government	<ul style="list-style-type: none"> • How can and do governments develop a supportive culture for SME CI practices? • How do SMEs react to CI government initiatives? • How do entities engage themselves in funded CI environments whether from the public or private sector? • What advancement in SME practices or performance can be measured in CI funded environments?
The relationship between countries	<ul style="list-style-type: none"> • How do or could countries collaborate on CI public policy initiatives? • How do countries learn from other countries to conduct CI public policies? • What are the barriers (cultural, linguistic, political, technological, and economic) to country level collaboration on CI initiatives?

9.3 Research Agenda: Policy

France is the ideal country to examine CI public intervention because no other country in Europe has invested so much in effort and resources for so long. Even when other countries follow France with CI public policy initiatives, France becomes the country of reference (Bègin *et al*, 2007; Mallowan & Marcon, 2010; Franco *et al*, 2011; Larivet & Brouard, 2012; Wright *et al*, 2012). When French central governments have taken a back seat on CI initiatives the quasi-governmental CCI has carried forward programmes in the field (Bergeron, 2000a; Clerc, 2009; Pelissier, 2009). Nevertheless, the unique cultural and economic heritage for CI in France is unlikely to be transferable (Jakobiak, 2006; Smith & Kossou, 2008; Moinet 2010). Future studies on CI public policy initiatives should be looking at what works, innovative practices, and how a funded environment can be optimised. Table 9.2 presents the research agenda for CI policy, building on the insights from this study.

Table 9.2 Research Agenda: Policy

CI Topic	Key Questions
CI policy programmes in the field	<ul style="list-style-type: none"> • Which activities succeed in engaging SMEs in CI practice and CI awareness? • How is the performance of the CI programme measured? • Who are the key actors in the CI programme from both the private and public sectors? • What constraints hinder the up-take of CI programmes?
Contextual factors for CI public policy	<ul style="list-style-type: none"> • What are the existing attitudes towards CI practices in the SME community? • Which entities are trusted by the SME community as sources of information? • What terminology would be appropriate for the CI community, particularly SMEs? • Do government initiatives deter SME engagement in CI practices?

9.4 Research Agenda: CI Advisors

Typologies of CI advisors specific to a region would assist both SMEs and governments in network building and policy initiatives. Major types of advisors, such as consultants, may need their own typologies. The relationships between advisors and governments, as well as between each other will impact how they interact with SMEs. Table 9.3 contains the research agenda for CI advisors.

Table 9.3 Research Agenda: Advisors

CI Topic	Key Questions
Advisor Typologies	<ul style="list-style-type: none">• What type of CI advisors exist for a given sector or region?• How do the CI advisors work together? How do different levels of government affect the CI advisors?• How do the skills and experience of CI advisors influence the level of input?
Advisor Users	<ul style="list-style-type: none">• Why do SMEs use or not use a specific CI advisor?• How frequently are SMEs using a given advisor?• How credible are the CI advisors for the SMEs?• How does the performance of none users of CI advisors compare to users of CI advisors?

9.5 Organisational Learning

Organisational Learning was not one of the research objectives when the study started and the research design has not been built for investigating this subject in SMEs. The literature in CI, and more notably in KM, has nevertheless drawn links between Organisational Learning and informational practices in SMEs, as discussed in Chapter 3. One area for investigation would be the stages of Organisational Learning development in SMEs with regard to their CI attitudes and behaviours. One research design proposal is to use the CI Manifestation typology presented in Chapter 8 as a framework for deeper investigation into how Organisational Learning takes place in SMES. Specific interest would be how the SMEs take incremental steps to becoming learning organisations. Organisational Learning indicates how

an SME captures, interprets and transfers knowledge to adapt and exploit changing environments.

The following propositions are only hypothetical but they have the potential to be empirically tested:

1. **Ostriches**, blinded by a lack of resources, have no or very little Organisational Learning and information is considered free, omnipresent, and not particularly relevant for the entity's future. For Organisational Learning to take place, companies have to initiate focused information search from the business environment and apply that knowledge to process or product innovations (Wang *et al*, 2010).
2. **Mocking Birds** search for specific information for to answer a specific question (Argyris, 1994). Corrective actions are made without changing or questioning the underlying processes (Argyris, 2002). It is single loop learning.
3. **Doves** go beyond scanning and other passive data collection. There is an attempt at insight management, to interpret information, to change behaviours but ultimately limited resources hold them back. Consequently they do not quite make it from single to double loop learning.
4. For **Kestrels** the strategic orientation of CI attitudes is further manifested in a convincing progression to double loop learning. Senge (1990) referred to this as generative learning whereby new ways are invented to look at the world whereas Argyris & Schon (2002) described it as reconsidering fundamental organisational characteristics.
5. **Eagles** have higher order learning, or triple loop learning (Wang & Ahmed, 2003). Their pro-active attitude stance is manifested by an obsession to learn to learn before they are forced to learn, questioning their epistemological foundation, striving for constant innovation.

Table 9.4 overleaf aligns the 5 SME CI Manifestations types with 5 stages of Organisational Learning to be investigated. This passes from Ostriches, which conduct no Organisational Learning, all the way through to Eagles, which have the most sophisticated Organisational

Learning capability. Figure 3.9 in Chapter three is a model by Oubrich (2007), which depicts Organisational learning for both single and double loop learning. Whereas the Oubrich model (2007) focused on the intelligence cycle, and 2 learning loops, this potential framework emphasises CI manifestations and adds higher order, triple loop learning.

Table 9.4 SME CI Manifestation and Potential OL Stages

Ostriches	Mocking Birds	Doves	Kestrels	Eagles
None	Single Loop Very little as information is viewed as the goal rather than a means to an end	Single Loop and transitional A recognition that Insight Management can add value, change behaviours, and lead to innovation, but unable to fully implement	Double Loop Acceptance that knowledge is a capacity to learn. Double loop learning functional to evolve new practices and operational frameworks	Triple Loop Basic assumptions are constantly questioned so as to rethink methodologies; reflection on consequences of learning and striving for innovation

9.6 Research Agenda: Transforming Mocking Birds into Doves

As the CI Manifestations Typology proposed in chapter 10 illustrated, SMEs have been observed to progress from one identifiable stage to another within a funded environment. Future research should investigate how this process takes place inside the SME. While any one of the potential 4 transformations could be investigated, the transformation from Mocking Birds to Doves would seem to be a priority. First of all, it is feasible conceptually and furthermore, cases have already been identified in the field as existing transformations. One contribution of this thesis is the identification of the Mocking Bird to Dove transformations as a worthy and realistic goal of CI public policy. Ostriches can be transformed into Doves by relatively straight forward awareness creating communications. Higher order transformations, while desirable, would require more resources and competencies than could be easily found in public entities such as the CCIs. Whether public policy should be attempting to transform higher order levels of practice is of course a debatable question. Private sector entities such as

consultancies would presumably be interested in such transformations not to mention the SMEs themselves. A longitudinal case study approach could identify critical steps and organisational changes as SMEs progress from one stage to another. Table 9.5 presents the research agenda for longitudinal studies.

**Table 9.5 Longitudinal Studies for SME CI Transformation
(From Mocking Birds to Doves)**

CI Topic	Key Questions
External factors enhancing SME evolution	<ul style="list-style-type: none"> • How do Mocking Birds interact with external support entities to facilitate movement to Doves? • How do customers drive SME CI advancement from Mocking Birds to Doves? • How do competitors drive SME advancement from Mocking Birds to Doves? • How does presence in international markets drive SME advancement from Mocking Birds to Doves?
Internal factors enhancing SME evolution	<ul style="list-style-type: none"> • How does technology drive SME advancement from Mocking Birds to Doves? • How does leadership drive SME advancement from Mocking Birds to Doves? • How does training drive SME advancement from Mocking Birds to Doves? • Which key metrics (dashboard) are monitored daily to control CI progression from Mocking Birds to Doves? • Which key metrics (Scorecard) are monitored quarterly to control CI progression from Mocking Birds to Doves?

While acknowledging that higher order transformations may not be the priority of CI public policy, it remains none-the-less a desirable goal for all stakeholders. SMEs may be without CI

public service assistance, that is, outside of a funded environment, but the transformation is still a worthy goal and might indirectly help CI policy development. CI as public policy should prepare SMEs for future more advanced progressions which they take alone. Table 9.6 presents the research agenda for higher order raptors.

**Table 9.6 Longitudinal Studies for SME CI Transformation
(From Doves to Higher Order Raptors)**

CI Topic	Key Questions
External factors enhancing SME evolution	<ul style="list-style-type: none"> • How do Doves interact with external support entities to facilitate movement to higher order raptors? • How do customers drive SME CI advancement from Doves to higher order raptors? • How do competitors drive SME advancement from Doves to higher order raptors? • How does presence in international markets drive SME advancement from Doves to higher order raptors?
Internal factors enhancing SME evolution	<ul style="list-style-type: none"> • How does technology use drive SME advancement from Doves to higher order raptors? • How does leadership drive SME advancement from Doves to higher order raptors? • How does training drive SME advancement from Doves to higher order raptors? • Which key metrics (dashboard) are monitored daily to control CI progression from Doves to higher order raptors? • Which key metrics (Scorecard) are monitored quarterly to control CI progression from Doves to higher order raptors?

9.7 Research Agenda: Attitudes

The guiding theoretical framework for this study has been the attitude antecedent theory of planned behaviour. The underlying theory states that human social behaviour can be traced back through a causal sequence of processes. Specific intervention behaviour change experiments could be conducted with this theory. The findings from this study have shown that CI perceived constraints and background factors have no significant relationships with the actual CI behaviours of frequency of receiving CI advice and the participation in a CCI event. The choice of CI advisor and the attitudes towards CI practices however, did have statistical significance between each other, and in the case of the attitude towards CI needs analysis, with the participation in a CCI event. This thesis is an example of how the theory of planned behaviour can be used as an explanatory model. The potential to use it as a predictive model is also valid. In the words of Fishbein & Ajzen (2010, pp 321): *“By identifying behavioural, normative, and control beliefs that serve as the underlying determinants of a behaviour we also gain important information about the kinds of beliefs that would have to be changed to effect a change in intentions and behaviour”*. Both single behaviour and categories of behaviours can be investigated by the theory of planned action (Fishbein & Ajzen, 2010).

The research areas proposed in Table 9.7 name the attitudes toward the behaviour, subjective norms, and perceived behavioural control for the suggested topics. If the research is for prediction and not just explanation, the antecedent beliefs behind each of these ‘influence drivers’ would need to be investigated too (Fishbein & Ajzen, 2010). Specifically, these would be behavioural beliefs (beliefs about the behaviour), normative beliefs (what others think about the behaviour) and control beliefs (beliefs about the level of control over the behaviour). Table 9.7 overleaf presents the research agenda for research proposals using the Theory of Planned Behaviour.

Table 9.7 Research Proposals Using the Theory of Planned Behaviour

CI Topics	Key Questions
Public policy interventions for SMEs	<ul style="list-style-type: none">• What are the attitudes towards, subjective norms, and perceived behavioural control for SME choice of public CI support entities?• What are the attitudes towards, subjective norms, and perceived behavioural control for an SME to conduct a CI needs analysis with the assistance of a public entity?• What are the attitudes towards, subjective norms, and perceived behavioural control for SMEs which refuse to participate in public CI programmes?
Private sector interventions for SMEs	<ul style="list-style-type: none">• What are the attitudes towards, subjective norms, and perceived behavioural control for SME choice of CI consultants?
Internal interventions within an SME	<ul style="list-style-type: none">• What are the attitudes towards, subjective norms, and perceived behavioural control for nominating a CI officer in an SME?• What are the attitudes towards, subjective norms, and perceived behavioural control for an SME to conduct a CI needs analysis?

9.8 Research Agenda: Terminology

A key finding of this thesis has been the significant relationships that SME terminology use has with choice of CI advisor and attitudes towards CI practices. It was notable that expressions which use the word intelligence had more statistically significant relationships than those without. This is useful as manifestations or indicators of CI mind-set and CI behaviour for identifying types of SMEs in a CI capability context. This research has been unable to statistically prove the direction of cause and effect between terminology use and specific behaviours and attitudes. Future research could also investigate other relationships between terminology use and CI behaviours. Table 9.8 presents the research agenda for CI terminology.

Table 9.8 Research Agenda for CI Terminology

CI Topic	Key Questions
Cause and effect direction in terminology usage	<ul style="list-style-type: none">• Does use of CI terminology in an SME determine choice of CI advisor?• Does choice of CI advisor determine CI terminology use in an SME?• Does choice of CI terminology determine attitudes towards CI practices?• Do attitudes towards CI practices determine choice of CI attitudes?
The underlying meaning of terminology use	<ul style="list-style-type: none">• Does terminology choice have statistically significant relationships with choice of CI advisor in a non-funded environment?• Does terminology choice have statistically significant relationships with attitudes towards CI practices in a non-funded environment?• How does terminology evolve when SMEs set up a dedicated CI unit?• Does CI terminology use evolve with higher order levels of OL?

Countries named in this thesis which have already initiated CI public support programmes for SMEs provide scope for future country level, policy, and CI advisor studies, potentially of a comparative nature. This chapter has presented how the SME CI Manifestation Typology could be applied to Organisational Learning studies. In a similar vein, the typology could be the basis for other transformation objectives in an SME context.

CHAPTER 10: Personal Reflections

10.1 Lessons Learned

The PhD process has been continuous problem solving. In many instances these barriers seemed insurmountable. The interviewing of CCI CI directors took a huge amount of rescheduling and perseverance; the transcription in French also appeared as an unending and particularly tedious task. Many dead ends were met in attempting to survey SME decision-makers, notoriously difficult to reach and arguably all the more so with a subject such as CI. These examples of obstacles were overcome through a combination of determination and innovation, seeking help, and constantly stepping back to ask if the solution was a different approach or simply soldiering on. I personally believe that the secret lies in the ability to differentiate between knuckling down to hard and sometimes tedious work and knowing when to stop, change direction, or reassess an approach that is not working.

Starting tasks early is important. Many of the processes in a PhD are iterative, such as re-drafting chapters or running statistics on data, whereby each attempt contributes incremental improvements or new insight. Additionally the PhD process is rarely linear, leading to running phases concurrently, to loop back, to even go off on many tangents and to try and not lose sight of the big picture.

Inevitably, in undertaking a PhD, within an academic teaching world context, one is confronted with the underlying questions of creating and disseminating knowledge. This imposes questions of epistemology, self-identity, and how to interpret the world in which we live as well as how to express these new thoughts and new knowledge to others. I would argue that this PhD is notably rich in this regard due to the fact that the supervision and De Montfort University are English in language and culture whereas the units of measurement have been French, in France. I present this as an opportunity and not a hindrance even if it has slowed me down and frustrated me at times. In fact, I have proposed this aspect of the thesis as one learning objective, to bridge and reflect the diversity between the two countries in the subject matter.

10.2 Progress Reports

At DMU progress reports are made periodically (10 are expected in a calendar year) between the student and supervisors. The reports, together with the date of writing, are presented in the left hand column chronologically in Table 10.1 below. This provides a recorded history of the PhD process. My reflection, with the benefit of hindsight, is noted in the right hand column.

Table 10.1 Progress Reports

Report- issues discussed (unchanged since date of writing)	Reflection (autumn 2011)
<p><u>28th April, 2008</u></p> <p>We discussed the research proposal outline provided by DMU. As I'm in the early stages of my thesis I'm largely conducting a literature review and beginning to formulate ideas that need structuring into a research process.</p>	<p>Seems like a lifetime away.</p>
<p><u>04th June, 2008</u></p> <p>After discussing appropriate journals for publication of a working paper we evaluated different research areas that could be the basis of my PhD. An area of focus emerged (Awareness and Attitude as influencing the CI process), together with the type of study (cross sectional) and other data collection methods. This included the need for pilot studies/interviews and what type of sample frame to construct. Comparisons with the UK and the inclusion of culture, while attractive on the surface, may not be feasible. At this stage it seems more likely that I will focus on sector comparisons within a narrowly defined SME context, in France. This would facilitate data collection. Additionally the three of us explored different theoretical approaches to structuring the research process, notably with regard to preconceived question structures that may inhibit serendipity and impose researcher bias on findings.</p>	<p>The early ideas have come to fruition. The comments about pre-conceived question structures and serendipity were particularly pertinent. There has been a degree of grounding of the questionnaire in the interview findings. Moreover, the data collection took over six months in interviewing. These programmes were evolving during this time.</p>
<p><u>23rd June, 2008</u></p> <p>The length and style of the PhD registration was discussed so that I could confirm its relatively short length. More significantly we discussed sources for my literature review and the fact that it needs to be a substantial piece of evaluative work embracing the published areas of my research topic. A comparison</p>	<p>As expected the literature review has been a continuous piece of work. Many articles, some PhDs and books from 2010 and 2011 have been included.</p>

Report- issues discussed (unchanged since date of writing)	Reflection (autumn 2011)
<p>was made between published articles and conference papers in terms of depth, scope, and evaluation for a PhD literature review. Some of the data collection possibilities in France and how I might approach them were also aired. Guidance was provided on a published source for SME definitions which will assist me to construct a sample frame. Other tips provided were the use of software programmes (perhaps end note which I saw in training at DMU) to construct organise and store bibliographies.</p>	<p>Data collection was always a worry, in terms of getting responses and access.</p> <p>End-note was tried but it is the one software programme I didn't master. Experience has taught me that it is not an end solution in itself to the referencing discipline.</p>
<p><u>4th September, 2008</u> A number of e-mail plus phone discussions concerning several drafts of the registration forms.</p> <p>Advice and guidance of Martyn Denscombe was sought.</p>	<p>These were administrative issues.</p>
<p><u>30th October, 2008</u> The draft transfer report was discussed in detail with far reaching feedback from both supervisors. The main modifications necessary concern the sequencing of sections, clarification on several points of methodology and theoretical development.</p> <p>Specifically it was decided that attitude typologies would be a better framework than the CI processes identified in the wheel of intelligence. Other editing issues were also identified for correction. Sampling issues were clarified and the questionnaire will likely be undertaken in Rhone Alps region and not the Brittany region.</p>	<p>The 10,000 word document, impressively long at the time, now seems like a small stepping stone.</p> <p>Rhone-Alpes and Ile de France are the two most dynamic economic regions in France. The respectable sample size achieved in these two regions was partly due to their concentration of industry.</p>
<p><u>26th November, 2008</u> We discussed the theoretical development of the research in terms of including a typology as a framework. Additionally, the French region to be chosen for the quantitative survey was evaluated in terms of access, economic dynamism, and CI</p>	<p>The chosen Rouach & Santi (2001) typology has proven to be a central element of data collection and theory development.</p>

<p>Report- issues discussed (unchanged since date of writing)</p> <p>programmes. The student was reminded to stay focused on the research objectives set out in the original research application that has been validated.</p>	<p>Reflection (autumn 2011)</p>
<p><u>17th December, 2008</u></p> <p>The telephone discussion concerned the document design of the Transfer Report together with referencing key topics and sampling. It was decided due to the relatively small size of the population that a census would be used in place of sampling for the two sectors in Rhone-Alpes. Other minor details were covered such as placing of headings in the TR and expanding references in places.</p>	<p>At this time the plan was to use the CCI as a gateway for the questionnaire. In fact, they had a great deal of trouble achieving reasonable response rates for their own surveys. Sampling, however, has ultimately proved to be very credible, but not a census.</p>
<p><u>21 January, 2009</u></p> <p>An initial meeting with Sheila covered the formalities of the annual review and the transfer report review. We also discussed ideas for a conference paper to be delivered in Leeds in the summer. The meeting with Dr David Hudson consisted of reviewing the conceptual development of my thesis as well as some issues related to document design and data collection. Transfer Report meeting and Annual Review meeting held at one and the same time. Dr Hudson was the approved internal assessor for both processes.</p>	<p>The three annual reviews proved to be constructive forums for taking in the big picture, articulating challenges, options, as well as recognising achievements.</p> <p>The critical point was to share concerns with someone who has experienced the same process.</p>
<p><u>02nd, March, 2009</u></p> <p>The telephone discussion concerned the semi-structured interview questions. These were reviewed and some minor changes were made. Additionally the role of the pilot interviews was discussed. The eventual use of this data for publications was also explored. Reference was made to the transfer report meeting and the sections of the literature review that needed strengthening.</p>	<p>The interview questions took a while to get right. It was the challenge of language equivalence, balancing academic perspective to the practicing managers' world and also nurturing my own skills as an interviewer.</p>

Report- issues discussed (unchanged since date of writing)	Reflection (autumn 2011)
<p><u>08th April, 2009</u></p> <p>This month my interviews with employees of French Chamber of Commerce CI programme leaders have continued. Two more are scheduled for this week and it is my intension to finish this phase of data collection by the end of May. Literature on CI in SMEs has been forwarded from Sheila Wright which has added to my continuing literature review. I am still pushing the DMU research centre on NVivo training but nothing concrete has been proposed. This is holding up my research.</p>	<p>The interviews were a long drawn out process due to scheduling challenges with these busy people. Plus they were geographically dispersed across France.</p> <p>The glitch of getting NVivo training has been long forgotten even if at the time it seemed a sizable obstacle.</p>
<p><u>22nd April, 2009</u></p> <p>This month we have discussed NVivo training possibilities and the availability of the software through DMU for students. A list of potential publications coming out of my PhD research was sent as a basis for future discussion. The student also communicated his acceptance of a conference paper at the Academy of Marketing (AM) conference in Leeds 2009.</p>	<p>Leeds was my first conference paper as a PhD student and I would also participate in the doctoral colloquium. I was proud to get a competitive paper accepted.</p>
<p><u>04th June, 2009</u></p> <p>On 3rd June I presented my conference paper (AM, Leeds, 2009) during the research day as a student presentation. Feedback and guidance were provided by Sheila and Martyn Denscombe. On the 4th June Sheila, David and I discussed publication strategies linked to the stages of my PhD. We also spoke about data collection issues, training needs, and overall took stock of the progress to date.</p>	<p>As a warm up for Leeds I presented during the DMU research day. It was a good idea and I can still remember the active questioning by fellow PhD students.</p>
<p><u>8th July, 2009</u></p> <p>At the Academy of Marketing conference in Leeds we discussed the commentary and feedback on my research design which was given in the doctoral colloquium. We also shared perspectives on other</p>	<p>The presentations on methodology at the doctoral colloquium were very heavy. Even more destabilising for us PhD students</p>

<p>Report- issues discussed (unchanged since date of writing)</p> <p>research in the Competitive Intelligence domain and some of the common challenges that PhD candidates meet.</p>	<p>Reflection (autumn 2011)</p> <p>was the lack of common vision on epistemology between the speakers. Whether this was a deliberate strategy or not remains a mystery to me.</p>
<p><u>9th September, 2009</u></p> <p>The meeting mainly focused on analysis of the 15 semi-structured interviews on NVivo. Publication possibilities and the second phase of data collection were also discussed.</p>	<p>Having raw data and plenty of it was satisfying. NVivo, despite being intimidating to start, ended up as an intuitive and natural process.</p>
<p><u>12th October, 2009</u></p> <p>Qualitative research write-up for semi-structured interviews. Publication potential.</p>	<p>The timeliness of the CCI interviews and the full value of the CCI CI programme directors as key informants were becoming apparent. The literature review had strongly suggested this but it was reassuring all the same to see insight and meaningfulness surface out of the research process.</p>
<p><u>29th October, 2009</u></p> <p>The meeting centred around the write up on the semi-structured interviews and how this can be used for designing the questionnaire. Additionally, publications were discussed and data collection approaches for the survey.</p>	<p>The mixed methods approach was hovering between development and expansion. Concerns about how to get a good response rate were rising.</p>
<p><u>12th December, 2009</u></p> <p>Through email and telephone the questionnaire design was extensively reviewed with both supervisors. Data collection strategy options were evaluated. A plan was laid out for a conference paper at the Academy of Marketing in 2010.</p>	<p>Developing the questionnaire took many drafts and a lot of piloting.</p>

Report- issues discussed (unchanged since date of writing)	Reflection (autumn 2011)
<u>12th January, 2010</u> Editing and adapting Academy of Marketing conference paper.	Two publications were in process both of which used the data from the semi-structured interviews. The conference paper was tricky in that a large amount of data had to be condensed into five pages plus appendices.
<u>4th February, 2010</u> The CCI document has been Printed and it has been distributed in France. The Academy of Marketing conference paper has been edited and there is progress on questionnaire.	The CCI document was in fact a practitioner piece that would go out to the CCI CI directors so that they could learn from each other's opinions, insight and approaches.
<u>10th March, 2010</u> The first draft of chapter 2 (Research Context) was reviewed and suggestions for improvement were stated. Progress on questionnaire noted.	The context chapter was to take a number of drafts to find the right level, justifying the choice of country, subject area and units of measurement.
<u>9th April, 2010</u> A new draft of the Research Context has been written following initial feedback. Progress on piloting the questionnaire has been discussed and finally, funding to attend the AM conference in Coventry. The acceptance of the paper has been announced.	The acceptance of the conference paper was very satisfying in that no revisions were requested. A year earlier the first accepted paper had to have quite a few revisions.
<u>13th April, 2010</u> -Fund application acceptance for AM in Coventry -Methodology chapter for thesis write up -Timing of publications in relation to thesis write up	Chapter drafting was now in full swing with methodology the immediate focus.
<u>11th May, 2010</u> Annual Review of the year's progress. Challenges for the future, notably how to get a good response rate	Annual reviews were a good way to take stock and share both progress and concerns with someone more

<p>Report- issues discussed (unchanged since date of writing)</p> <p>from the survey. The second draft of the research context chapter was evaluated and suggestions for improvement made.</p>	<p>Reflection (autumn 2011)</p> <p>detached from the research project.</p>
<p><u>9th June, 2010</u></p> <p>The evolving opportunities and challenges regarding the on-going survey have been discussed as well as publishing strategies. PP for Coventry AM conference has been exchanged, drafted, improved.</p>	<p>The survey was getting close to be piloted but options on how to get SME responses were still worryingly limited. Preparation for the conference paper had been extensive.</p>
<p><u>8th July, 2010</u></p> <p>The overall schedule of the PhD process has been reviewed. The final drafting of questionnaire has been accomplished and the timing of questionnaire usage discussed.</p>	<p>In July the conference paper won the best paper in track award at the Coventry AM annual conference. It was one of the high points of the PhD process and boosted my confidence. It was also a special ‘team’ moment to share with the supervisors who were both present at the conference.</p>
<p><u>13th August, 2010</u></p> <p>The meeting centred on methodology. A draft chapter was evaluated and ideas shared on how to expand and improve. The attention to 'levels' of structure was noteworthy. The JSM article accepted for publication was also discussed.</p>	<p>Methodology issues were beginning to fall into place. Another very positive outcome was the acceptance of the AM conference paper to be published in the Journal of Strategic Marketing. As my supervisors said ‘Welcome to the world of publishing’.</p>
<p><u>23rd September, 2010</u></p> <p>We have been drafting the JSM article. Discussions have notably centred on referencing as well as content issues. Exchanges have also been made regarding methodology issues.</p>	<p>Referencing had been an issue in terms of consistency. Methods and processes were discussed on how to overcome this problem.</p>

Report- issues discussed (unchanged since date of writing)	Reflection (autumn 2011)
<p><u>27th October, 2010</u></p> <p>The feedback on the methodology draft chapter was discussed. Most of the meeting was about attempts to boost the response rate for the survey. It was decided to persevere until the end of the year and then review the situation.</p>	<p>The original goal had been to reach the SMEs through the CCI for the survey responses. The CCI noted however, that they had extreme difficulty in getting reasonable response rates from SMEs themselves. Attempts were also made to conduct a phone survey but with very little success.</p>
<p><u>23rd November, 2010</u></p> <p>Recent emails have discussed the on-going data collection through use of a third party. At this time there are promising signs that the approach is working and that the needed sample size will be met in the very near future.</p>	<p>A solution was found to survey data collection by gaining access to an online SME panel.</p>
<p><u>16th December, 2010</u></p> <p>The final sample size was discussed as well as the next steps related to data analysis. Additionally, we discussed ideas for a conference paper for the AM next year. It was decided to focus on a sectorial comparative study. We concluded by reviewing the overall PhD timeline.</p>	<p>After piloting and revision the questionnaire is sent out. Responses came in relatively quickly as it was online.</p>
<p><u>17th January, 2011</u></p> <p>The data analysis uploading is taking a long time but nevertheless progressing. The looming deadline for the AM conference paper is adding pressure. Ideas on positioning the conference paper have been exchanged.</p>	<p>The three conference papers were valuable milestones throughout the PhD process. They imposed urgency and peer pressure as well as ‘stepping stones’ in the publication process. I was fortunate to have a CI track available at the AM annual conferences.</p>
<p><u>05th February, 2011</u></p> <p>We have exchanged several emails on drafts of the</p>	<p>Although timing of the PhD process</p>

Report- issues discussed (unchanged since date of writing)	Reflection (autumn 2011)
<p>Academy of Marketing conference paper which has now been submitted. It is co-authored by me, Sheila and David. Additionally we have discussed the timing of the write up period.</p>	<p>was always on my mind, and often discussed, it was still to become an issue at the end of the PhD process.</p>
<p><u>18th March, 2011</u></p> <p>This past month we have discussed and scheduled the annual review which will take place the 14th April. It has also been decided that the official write up period will be from May to November. We are waiting for feedback on a submitted conference paper.</p>	<p>With the data collected, three conference papers, and one publication in a ranked journal, it was considered time to go into 'write up'.</p>
<p><u>14th April, 2011</u></p> <p>In the addition to annual review, we discussed the approaches and sequences to take as I enter the 'write up' period. For example, organisational learning and organisational memory studies should be reflected upon in the context of the research. The data base was reviewed, the overall timeline stated, and perhaps most importantly, the need for theoretical development was emphasized. The later point was also pertinent for a conference paper under review.</p>	<p>With data collection behind me it was time to reflect on analysis, findings, and theory development.</p>
<p><u>30th May, 2011</u></p> <p>Email exchanges in May have focused on theory development, a draft chapter on 'context' of the research, and the presentation under preparation for the AM conference in Liverpool.</p>	<p>In hind sight, this was the time when more rigorous quantitative analysis should have been undertaken. It is easy to spot this today but more difficult in the context of the moment.</p>
<p><u>14th June, 2011</u></p> <p>The central focus was the context chapter of the thesis and how it will link in to the literature review and methodology. A process was discussed on how to improve referencing and consistency.</p>	<p>It was a time to pull things together and also to look at transitions and linkages in the PhD.</p>

Report- issues discussed (unchanged since date of writing)	Reflection (autumn 2011)
<p><u>21st July, 2011</u></p> <p>The presentation for Cumberland Lodge conference was discussed. It proved to be a good way to explore theory development. An emerging model to be tested was critiqued as well ways for conducting quantitative analysis. A broader view of the PhD timeline was also discussed in regard to deadlines and phases.</p>	<p>I had been selected together with another DMU PhD student to attend an annual conference at Cumberland Lodge, Windsor. The selection process was based on the potential impact of the PhD on the subject area. I was then very proud to be one of the 40 PhD students to be selected from across the nation. The conference itself was very stimulating. I was later to present the conference experience to other PhD students at DMU. The report that I wrote together with Stella Karageorgi, the other DMU PhD student selected to attend Cumberland Lodge, can be found in appendix 8.</p>
<p><u>18th September 2011</u></p> <p>Having consulted a French researcher, ideas for exploiting the quantitative data were evaluated. An outline for analysing the data has been drawn up and this approach is currently being tested. While chapters on findings and analysis can continue to be drafted the quantitative analysis will need to be completed for these chapters to be fully developed.</p>	<p>It was an important step to discuss and share my work with an expert in the French CI field. The guidance on quantitative analysis was extremely helpful.</p>
<p><u>31st October, 2011</u></p> <p>We took a holistic view of the write up so far and what needs to be done. It was agreed that more application to my specific research design is necessary in the methodology chapter and certain areas require expansion in the literature review. Chapter summaries should be retitled as conclusions taking a more critical</p>	<p>It was a very valuable meeting which addressed many fundamental aspects about the thesis development. New approaches were discussed which in hindsight flushed away roadblocks. The most critical supervisor meeting in the</p>

<p>Report- issues discussed (unchanged since date of writing)</p> <p>approach. The progress on the statistics was discussed. While a great deal of work remains to be done we also acknowledged how much has been achieved.</p>	<p>Reflection (spring 2012)</p> <p>whole PhD.</p>
<p><u>11th December, 2011</u></p> <p>The student has largely been working autonomously in terms of write up and data analysis. Recent exchanges have focused on theory development, the sequencing of subjects in the thesis write up, and how best to apply methodology frameworks to this research design.</p>	<p>It was proving to be the toughest part of the PhD as deadlines were looming, the holistic nature of the PhD had to be weighed while providing sufficient evidence for each step.</p>
<p><u>15th January, 2012</u></p> <p>Most of the Chapters are fully drafted. The statistical analysis is driving the findings. The overall flow of the thesis is taking shape even if many document design issues need ironing out.</p>	<p>This was a very intense time in the write up. It was motivating too as results and contributions were taking shape.</p>
<p><u>February 16th, 2012</u></p> <p>The quantitative analysis was completed. The results Chapter format, in terms of tables and data presentation had also been written up. Attention was now on completing the conclusions and putting final document together for submission for a full reading by the supervisors.</p>	<p>In hindsight I would say this was the most creative period of the research process. Data findings were converted into models and long 12 hour days of intense work pushed the work forward.</p>
<p><u>March 16, 2012</u></p> <p>The draft of the PhD thesis was discussed in its entirety. Particularly focus was on the five research themes and how they should link more consistently with the research questions. Feedback was also given regarding document design, referencing, and how the introduction chapter could be improved.</p>	<p>The rhythm of work was still intense but the overall positive feedback from supervisors was encouraging. For many skills, from word processing to discussing the statistical findings I had moved rapidly down the learning curve.</p>

10.3 Competencies Developed

The range of competency development through the PhD process has been very wide. There has been technical skill development in terms of computer programmes like NVivo and XLstrat as well as the increased proficiency in Word, PowerPoint and AMOS graphics. In the softer skills, such as interviewing, transcribing, and coding, there has also been marked improvement. Language skills, predominantly French, have been deepened and widened in both oral and written competencies. The conceptual ability, linked to relating complex trans-disciplinary subjects and theory development has notably been an intellectual development. Table 10.2 summarises the competencies, means and ends of my personal development. They are presented in chronological order of development.

Table 10.2 Competence Development

Competence	Means of Development	Evidence of Proficiency
NVivo	Two full-day training sessions at DMU. Learning by doing.	Coded, categorized, structured 65,000 words from interview transcripts. Results published in ranked academic journal.
XLstrat	Assistance from colleague, using manuals and learning by doing.	Over 700 statistical tests conducted on coded interview responses. Results written into thesis.
Word and PowerPoint (including referencing)	Building on previous skills; challenged by large documents; editorial advice from supervisors and publication editors.	Presented papers in three blind reviewed international academic conferences plus published in two academic journals.
Interviewing	Guidance from supervisors, learning by doing, piloted two interviews and conducted 15 with practicing managers.	Results are published in academic journals.

Competence	Means of Development	Evidence of Proficiency
Questionnaire design	Consulting text books, advice from supervisors, iterative learning by doing.	Successful data collection with sample of 176.
French Language Skills	Building on established level by developing research instruments in French, collecting data in French, and reading a predominantly French language literature review. Feedback from expert native speakers in the academic and practicing CI world in France.	Successful interviews all conducted in French. Publications incorporating a high degree of French literature and French thinking.
Conceptual abilities	The whole PhD process is arguably a conceptual exercise. Notably working with methodological and theory development issues stretched my conceptual capacity. Supervisors played an essential role.	Oral defences at conferences, writing up knowledge creation in the thesis, published papers.

10.4 What would I do differently?

While there has been a good track record of overcoming obstacles in the PhD process they have always come at a price of lost time. Attempts to attain reasonable sample returns through telephone or mailings were forlorn. I probably would not try these again in hindsight. Notably the quantitative analysis took much longer than I expected in terms of coding the responses, conducting the tests and writing them up. In an ideal world I would have wished to accomplish these tasks earlier. They are critically linked to theory development and held up progress in other areas. Despite these setbacks, I was fortunate to have support from my supervisors and at least these issues were real world and not administrative.

10.5 What Went Wrong, What Went Right?

In the big picture the choice of France, the focus on the CCI CI programmes, and the timing of the study, remain highly defensible. It was a unique window to research this highly original and significant public policy. Within this context, the selections of units of measurement were very credible and meaningful. The CI programme directors were experienced, informed, and accessible. That they willingly engaged in critical thinking and commentary was a plus and overall they were superbly placed and highly qualified as key informants. The SME decision makers were also a natural and certainly necessary unit of measurement. Using quantitative methods permitted a good sample size. The mixed methods approach enhanced mutually these two samples, one feeding the other, permitting deeper insight, and multiple perspectives. The choice of regions and sectors has been appropriate in that they are globalized sectors in dynamic centres of economic activity.

What went wrong? Data collection from SME decision makers was time consuming, frustrating, but eventually was successful. Coding the quantitative data also took more than one attempt but of course these were learning processes too. I had originally intended to use SPSS software for the quantitative analysis but the person who assisted with this step preferred XLstat. I personally found the interface more intuitive on XLstat and the visual outputs were clearly of higher quality than SPSS. While all of these examples might be considered as inevitable glitches in undertaking such a large project, they did collectively push me into being behind schedule in different phases. Intense and complete immersion in the study at the end period however enabled me to catch up.

10.6 Words of Advice for Future PhD Students

As a former SME creator, manager, and now an active academic, I believe I can bring some original insight into advising future aspiring scholars. While all the big choices of subjects, supervisors and universities may or may not be evident, they certainly deserve careful reflection. They will all evolve over the duration of the study so a certain vision is required. They should not be rushed. With a project of such commitment and size it is normal and desirable to take time to position oneself within a changing world.

There is debate in academia as to whether PhD students should publish during the PhD process or wait until the thesis is written (Philipps & Pugh, 2000). For me it worked well, whereby I learned a great deal from the editing process, and this pushed my work forward

rather than holding it back. Of course, preparing papers and presentations and interacting with other academics as well as seeing other related work are all very rich learning processes. I would even go as far as to recommend publishing or attending a conference even before starting so as to make better choices about positioning the PhD. I recognise this might be more difficult for younger PhD students than me.

There are an awful lot of factors that can go wrong when studying for a PhD and even when they go right it entails a great deal of focus and hard work. Accepting that some dead-ends will happen, that whole chunks of work may need eliminating, or at the least re-writing, is more about progress than it is about failure. Ultimately the PhD process is about two outcomes. First it is about personal development and second, creating knowledge. Both are long processes which require sustained effort, adaptation, a probable change in lifestyle and certainly a change in outlook. You have to prepare family and friends too, whose support and attitude, may go for or against progress.

My main advice is to get on with it. Professionals with PhDs may speak of harrowing events, sacrifices and even emotional scars but they rarely speak of regret. Even before I (hopefully) finish, I can see the changes in my work practices, my competencies, my teaching, and even the relationships with my family.

The PhD process has been as challenging as it has rewarding. This Chapter has discussed this process, detailing through the recorded progress reports specific milestones, achievements and events. The fact that supervision and training have been at DMU in the UK and that the data collection and research focus have been in France has added another dimension to the research process. Language, culture, and mentalities from both worlds have had to be managed. As Europe moves into an uncertain economic period with new challenges, these cross-cultural communication skills may well be one of the most valuable personal outcomes.

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Appendix 1

The Competitive Intelligence Good Practice Guide

Ministry of Economy, Industry and Employment



INTRODUCTION

Economic information is available in abundance; indeed, it could be viewed that we are overburdened with information. Research is carried out on market data, customer follow-up, fact-finding regarding competitor strategies, checking that we are in tune with our partners, anticipating technological development, monitoring the development of standards, etc. There are so many challenges at the heart of any corporate project, whatever the field of activity and regardless of size. But faced with this information, whose profusion and scope has been intensified by the rapid development of the internet and its applications, where do we start? How do we find, organise and circulate the useful information, that which offers the company a comparative advantage? How do we check its quality, validate its contents and ensure that it is received by the right person and is completely understood? How can we check that the information we write ourselves in publications, on our website or that we pass on to a third party, is not used against us as a source of precious information, beneficial to those who wish to acquire it, or at least keep it? How do we identify and protect these vulnerable areas?

The purpose of competitive intelligence is to meet these needs. Today, it is just as vital to companies as was marketing 50 years ago. It is not just an obscure area of thought, the reserve of the initiated, or a pretext for dubious practices, but a genuine means that helps to tackle the challenges of competition. The purpose of this guide is to present this method.

The “Service de Coordination à l’Intelligence Economique” (SCIE – competitive intelligence coordination service) attached to the ministries of the Economy and Budget, was seeking to help those involved in the economy, companies, professional associations and syndicates, chambers of commerce, development agencies, etc., to understand the practicalities and fundamentals of this approach. The turbulence that has rocked the international economy will inevitably alter the hand we have been dealt in a great many areas. We must prepare ourselves for this and know how to gather information that gives out the right signals. This reference guide of good practices has been created as a contribution to this new process of gaining awareness. It is freely accessible and designed to be broadly circulated via electronic channels to companies. This work is the result of a collective effort and consists of a series of various brief items giving practical advice and addresses. There are numerous references to work that have already been carried out on competitive intelligence in France and French-speaking Switzerland.

I hope that this guide will be of help to company managers, in particular to those running SMEs, as well as to professional educators in their approach to these issues. In the words of Abraham Lincoln, “The dogmas of the quiet past are inadequate to the stormy present. [...] As our case is new, so we must think anew and act anew”.

Ministerial Coordinator of Competitive Intelligence

Cyril Bouyeure, February, 2009

Appendix 2

Map of France Showing Participating CCI



The 15 Chambers of Commerce and Industry constituting the sample for the qualitative research in France

Bourgoigne	Le Mans	Rouen
Chalons en Champagne	Lille	Tours
Chambery	Paris	Versailles Val-d'Oise
Colmar	Rennes (regional) Dufour	
Dordogne	Rennes (regional) Rodriguez	
Franche-Comté (regional)	Rhone-Alpes (regional)	

Appendix 3

Interview Guide: Semi-structured Interview Questions

Chamber of Commerce/Place:	
Date and Time:	
Name of CCI Employee:	
Face to Face or Telephone:	
Notes	

Section 1. The Chamber of Commerce and Industry (CCI) CI programmes

This first section is to learn more about the chambers' CI programmes.

1.1 When did your CCI begin its CI programme?

Quand-en quelle année votre programme d'IE a-t'il commencé ?

1.2 What does your CI programme consist of?

Quel est le contenu de votre programme IE?

1.3 How many CCI employees are involved?

Combien d'employés de CCI sont impliqués?

1.4 How many SMEs have attended your CI programme?

Combien de PME ont participé dans vos programmes d'IE?

1.5 Do you target firms in terms of a) size & b) sector?

Est-ce-que vous ciblez les entreprises en termes de taille et de secteur?

1.6 Do you collaborate with other organizations from either the private and public sectors in your CI programmes?

Est-ce-qu'il y a d'autres organisations, du secteur privé ou du secteur public, impliquées dans vos programmes d'IE ?

Section 2. CI Awareness

This second section is to investigate to what degree the SME managers are aware of CI needs and practices.

2.1a Can the SME decision-makers give a working definition of CI?

Est-ce-que les décisionnaires des PME sont capable de donner une définition de l'IE?

Quelle est la définition la plus connu.

2.1b What term do the SMEs use to refer to their information management?

Quelle terminologie sont utilisé par les PME en référence de la gestion de l'information ?

2.1 Who typically is responsible for CI in the SMEs?

Qui est responsable en général de l'IE dans les PME?

2.2 Do the SME managers regularly up-date themselves on the activities of their competitors?

A votre avis,

Est-ce-que les managers se renseignent régulièrement sur activités de leurs concurrents ?

2.3 How important do you think it for the SME managers to be aware of the status of the competitors?

Pour les managers des PMS, quel degré d'importance à votre avis, représente les renseignements sur leurs concurrents ?

Section 3. CI Attitudes

By attitudes we mean the disposition of the SME managers to act in a certain way.

3.1 How would you describe the attitudes of the SMEs you work with towards CI practices?

Comment décririez-vous les attitudes des PME avec lesquelles vous travaillez en ce qui concerne les pratiques de l'IE ?

3.2 Do attitudes differ from sector to sector? How...

En quoi les attitudes envers l'IE diffèrent-elles entre les secteurs de l'industrie ?

3.3 Classify your impressions of two sectors of SMEs on the following Typology:

Classer vos impressions sur 2 secteurs de l'industrie pour des PME selon les attitudes suivantes :

Five Competitive Intelligence Attitude Types (Rouach & Santi, 2001)

Type 1. Sleepers/Immune/Passive	No fear of competition No interest in Competitive Intelligence Not invented here syndrome Minimal or no support from Management
Type 2. Reactive/Task Driven	Only responds when competitors are hostile Opportunists Very limited budget for Competitive Intelligence Task driven attitude Ad hoc basis Top management doesn't believe in the benefits of Competitive Intelligence
Type 3. Active/Operational	Actively observing the competition Limited resources Beginning of an operational network Trying to understand, analyse and interpret markets Unwilling or unable to have a long term vision on Competitive Intelligence Management can see that Competitive Intelligence could increase profit

<p>Type 4. Strategic/Assault/Pro-active</p>	<p>Hunt for strategic information</p> <p>Professional, ethical approach</p> <p>Significant resources</p> <p>Human intelligence valued</p> <p>Monitoring competitors moves</p> <p>Top management support</p> <p>An integrated procedure</p> <p>Scenario planning</p>
<p>Type 5. Highly Proactive/Value Creation</p>	<p>An offensive stance/war mentality</p> <p>Very pro-active in managing the Competitive Intelligence process</p> <p>Sophisticated tools/experts</p> <p>Unlimited resources</p> <p>Team approach/Competitive intelligence integrated into decision making</p>

Five Competitive Intelligence Attitude Types (Rouach & Santi, 2001)

French version

<p>Type 1.</p> <p>Dormeurs/immunitaire /passif</p>	<p>Pas peur de la concurrence</p> <p>Aucun intérêt en Intelligence Economique</p> <p>Syndrome pas inventé ici, doc pas de besoin</p> <p>Peu ou pas de soutien de la direction</p>
<p>Type 2.</p> <p>Reactive/Task Driven</p> <p>Poussé par le besoin</p>	<p>Répond uniquement lorsque les concurrents sont hostiles</p> <p>Opportunistes</p> <p>Budget très limité pour Intelligence Economique</p> <p>Poussé par le besoin</p> <p>Ad hoc</p> <p>Top management ne croit pas aux bienfaits de la Intelligence Economique</p>
<p>Type 3.</p> <p>Actif/opérationnelle</p>	<p>Observation active de la concurrence</p> <p>Des ressources limitées</p> <p>Début d'un réseau opérationnel</p> <p>Essayer de comprendre, d'analyser et d'interpréter les marchés</p> <p>Ne veulent pas ou ne peuvent pas avoir une vision à long terme de l'Intelligence Economique</p> <p>La direction peut voir que l'Intelligence peut augmenter la rentabilité de l'entreprise</p>
<p>Type 4.</p> <p>Strategic/Assault/Pro-actif</p>	<p>Recherche de l'information stratégique</p> <p>Professionnels, approche éthique professionnelle</p> <p>Des ressources importantes</p> <p>Valeur de l'intelligence humaine valorisée</p> <p>Suivi des actions de concurrents</p> <p>Soutien de la direction de l'entreprise</p> <p>Procédure intégrée</p> <p>Planification de scénarios</p>
<p>Type 5.</p> <p>Très pro-actif, offensif</p>	<p>Une attitude offensive / mentalité de guerre</p> <p>Très proactif dans la gestion du processus de l'IE</p> <p>Des outils sophistiqués / experts</p> <p>Des ressources illimitées</p> <p>Approche d'équipe / Intelligence Economique intégrée dans la prise de décision</p>

Section 4. Attitude Antecedents

Inspired by the theory of reasoned action, these questions investigate the factors that may lead to CI attitude types. The numbered questions themselves would not be asked directly, just the prompts.

4.1 Which **beliefs** influence attitude formation towards CI process and structure?

Prompts

4.1 a, Are SME managers positive or negative towards Competitive Intelligence practice in their companies?

4.1 b, Do SME managers have strong feelings towards Competitive Intelligence?

4.1 c, Do the SME managers show different beliefs which themselves influence their attitudes towards Competitive Intelligence?

4.1 d, Can you give examples of such beliefs (information is too expensive, information can be wrong)

4.1 e, Do the SME managers have strong or weak beliefs towards CI practices?

4.1 f, Can you give examples as to what some of these beliefs may be?

4.1 a, Les dirigeants de PME sont-ils plutôt positifs ou négatifs envers l'utilisation de l'Intelligence Economique pratique dans leurs entreprises?

4.1 b, Est-ce que les patrons de PME ont des sentiments forts à l'égard de l'Intelligence Economique?

4.1 c, Est-ce que les dirigeants de PME montrent différentes croyances lesquelles influencent elles-mêmes leurs attitudes à l'égard de l'Intelligence Economique?

4.1 d, Pouvez-vous donner des exemples de ces croyances (l'information est trop coûteuse, l'information peut être fausse)

4.1 e, Les dirigeants PME ont-ils de fortes ou de faibles croyances envers pratiques de l'IE?

4.1 f, Pouvez-vous donner des exemples de ce que certaines de ces croyances paraissent-êre?

4.2 How do SME decision makers **evaluate** the likelihood that performing a specific behaviour will result in a specific outcome?

Prompts

4.2 a, Do SME managers decide quickly on what competitive information they need?

4.2 b, Do they have confidence in getting results out of their CI practices?

4.2 c, What criteria might they use to determine if their practices are effective?

...can you give examples...

4.2 a, Est-ce que les patrons de PME se décident rapidement sur leur besoins en IE.

4.2 b, Ont-ils confiance dans les résultats apporté par l'IE?

4.2 c, Quels critères utilisent-ils pour mesurer l'efficacité de leurs pratiques IE?

... Pouvez-vous donner des exemples ...

4.3 What would you advise SME decision-makers in regards to attitudes towards the CI process and structure?

Prompts

4.3 a, Do you try to change the SME managers attitudes towards CI practices ?

4.3 b, How would you try to do this?

4.3 c, How do they react to your advice?

4.3 a, Avez-vous essayer de changer les attitudes des dirigeants de PME à l'égard de leur pratiques IE?

4.3 b, Comment avez-vous fait ? quelle démarche ??

4.3 c, Comment réagissent-ils à vos conseils?

4.4 How **motivated** are the SME decision makers to comply with your advice?

Prompts

4.4 a, Do the SME managers seek your advice?

4.4 b, How motivated are the SME managers to learn more about CI practices/techniques?

4.4 c, Do they generally follow your advice?

4.4 d, Are they ever skeptical about the advice your propose?

4.4 a, Est-ce que les dirigeants de PME vous demandent conseil?

4.4 b, Commentaire motifs sont les dirigeants de PME pour en savoir plus sur les pratiques CI / techniques?

4.4 c, Est-ce-qu'ils suivent généralement votre conseil?

4.4 d, Sont-ils sceptiques ou plutôt rassurer lorsque vous leur donnez un conseil?

4.4 What do other salient referents advise SME decision-makers in regards to attitudes towards the CI process and structure?

Prompts

4.4 a, Who else provides advice to SMEs on CI?

4.4 b, What form does that advice take?

4.4 c, To what extent do SMEs appear to follow that advice?

4.4 d, Are the SME managers looking for advice on CI practices?

4.4 a, Qui d'autre offre des conseils aux PME sur la IE?

4.4 b, Sous quelle forme?

4.5 c, Dans quelle mesure les PME semblent-elles suivre ce conseil?

4.4 d, Est-ce que les dirigeants de PME cherchent des conseils sur les pratiques de l'IE?

4.5 How **motivated** are the SME decision makers to comply with their advice?

Prompts

4.5 a, Who do the SME managers listen to the most regarding CI practices?

4.5 b, Are SME managers likely to follow their advice?

4.5 c, Do SME managers generally follow external advice given about CI practices?

Can you give any examples?

4.5 a, Envers quel interlocuteurs pensez-vous que les dirigeants de PME sont le plus à l'écoute en ce qui concerne les pratique de l'IE?

4.5 b, Est-ce-que les dirigeants de PME suivent plus leurs conseils?

4.5 c, Est-ce que les dirigeants de PME suivent généralement des conseils extérieurs sur les pratiques IE?

Pouvez-vous donner des exemples?

Appendix 4

SME Questionnaire In English

Introduction

This survey is aimed at SMEs and professionals about their attitudes toward the management of information. Specifically, this subject is called Competitive Intelligence. It can be defined as coordinated actions of research, treatment and distribution of information for economic decision making. The results of this survey will contribute to the reflection and development of this subject and are part of a PhD thesis at De Montfort University, Leicester, UK. All responses are confidential and anonymous.

1. How many employees do you have?

- a, 10 to 49
- b, 50 to 249

2. Please name the sector of activity of your enterprise:

- a, Automobile
- b, Telecom

3. What is the function of the person filling in this questionnaire?

--

4. What percentage of sales is from outside of France?

- a, 0%
- b, Less than 10%
- c, Between 10% and 50%
- d, More than 50%

5. Which term would you use to describe your information management; you can choose more than one:

- a. Environmental scanning
- b. Competitive Intelligence
- c. Strategic Intelligence
- d. Market Research
- e. Competitor Intelligence
- f. Business Intelligence
- g. Knowledge Management
- h. None of these terms
- i. Other: _____

6. Who is responsible for information management in your company?

- a. The owner manager
- b. The sales manager
- c. The IT manager
- d. Director of Finance
- e. Director of R&D
- f. Director Marketing
- g. Quality Manager
- h. Nobody
- i. Other

7. Please rank the following organisations from the least effective (1) to the most effective (6) in assisting you with your needs in Competitive Intelligence:

- MEDEF _____
- Chambers of Commerce and Industry _____
- Gendarmerie _____
- DRIRE _____
- Consultancies _____
- Chartered accountants _____

8. How do you measure the effectiveness of your information management performance? Please check those which you use. More than one may be chosen.

- a. Customer satisfaction
- b. Anticipate new markets before competitors
- c. Win more bids
- d. Integrate with quality system generating quantitative criteria
- e. Register patents
- f. Launch new products
- g. Win market share
- h. Bigger markets
- i. Higher margins
- j. Apply a consultants tool
- k. We do not measure our information management effectiveness
- l. Other : _____

9. How often do you receive advice on how to manage your Competitive Intelligence?

- a, Every month
- b, Once a year
- c, Never
- d, Other : _____

10. Have you participated in a CCI Competitive Intelligence conference/event?

- a, Yes
- b, No

11. Which of the following organisations give you advice on Competitive Intelligence?

- a. Gendarmerie
- b. Chartered Accountants
- c. Consultants
- d. Chambers of Commerce
- e. None of the above
- f. Other : _____

12. I believe undertaking a CI needs analysis would help me run my business.

Strongly agree	Agree	Neutral	Disagree	Dont know
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. I believe implementing a CI system would improve my company's financial performance.

Strongly Agree	Agree	Neutral	Disagree	Dont know
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. I believe monitoring my competitors would improve my strategic decision making.

Strongly Agree	Agree	Neutral	Disagree	Dont know
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. I believe my competitors monitor the activity of my enterprise.

Strongly Agree	Agree	Neutral	Disagree	Dont know
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. I believe that investing in information management would improve the financial performance of my company.

Strongly Agree	Agree	Neutral	Disagree	Dont know
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. Which of the following do you consider to be constraints in how you manage strategic information? Please prioritise from 1 (smallest constraint) to 5 (biggest constraint).

- The financial resources required _____
- The time required _____
- The technical skills required _____
- The conceptual ambiguity of Competitive Intelligence _____
- The difficulty in understanding my Competitive Intelligence needs _____

18. Are you a man or a woman?

- a, Man
- b, Woman

19. What is your date of birth?

20. How would you categorize your profession level?

- a, Owner/manager
- b, Skilled professional
- c, Middle management
- d, Employee

21. In which region are you based?

- a, Ile de France
- b, Rhones Alpes

Thank you for your participation in this survey. If you would like to receive a summary copy of the results please leave your email here: _____

Appendix 5

Questionnaire In French

Cette enquête est destinée aux professionnels de PME et concerne les attitudes envers la gestion d'information. Plus précisément, ce sujet s'appelle L'Intelligence Economique. Les résultats de cette enquête contribueront directement aux réflexions à ce sujet et fait partie d'une thèse gérée par De Montford University, Leicester, Royaume Unis. Toutes les réponses sont confidentielles et anonymes.

1. Quel est le nombre de salariés de l'entreprise?

- a, 10 à 49
- b, 50 à 249

2. Secteur d'activité de votre entreprise:

- a, Automobile
- b, Telecom

3. Quelle est la fonction de la personne qui remplissant ce formulaire ?

4. Quel pourcentage de revenue de votre chiffre d'affaires est réalisé hors de France :

- a. 0 %
- b. Entre 1% et 10%
- c. Entre 10% et 50%
- d. Plus de 50%

5. Quel terme utiliseriez-vous pour décrire votre gestion de l'information? Vous pouvez choisir plus d'un terme.

- a, Veille Economique
- b, Intelligence Economique
- c, Intelligence Stratégique
- d, Etude de marché
- e, Veille Concurrentielle
- f, Business Intelligence
- g, Gestion des Connaissances
- h, Aucun de ce terme
- i, Autres : _____

6. Qui est responsable de la gestion de l'information dans votre entreprise?

- a, Le PDG ou le Directeur Général
- b, Le Directeur des Ventes
- c, Le Responsable Informatique
- d, Le Directeur des Finances
- e, Le Directeur de la R & D
- f, Le Directeur Marketing
- g, Le Directeur de la Qualité
- h, Autres

7. Pouvez-vous classer les organisations suivantes de la plus faible efficacité (1) à la plus haute efficacité (6) qui peuvent vous aider dans vos besoins en Intelligence Economique?

- MEDEF _____
- Chambres de Commerce et d'Industrie _____
- Gendarmerie _____
- DRIRE _____
- Consultants _____
- Experts Comptables _____

8. Comment mesurez-vous l'efficacité de l'information? Veuillez cocher ceux que vous utilisez.

- a, La satisfaction du client
- b, Test de sécurité
- c, Gagne de plus d'appel d'offres
- d, Nombre d'enregistrement de brevets
- e, Lancement de nouveaux produits
- f, Gain de parts de marché
- g, Découverte de nouveaux marchés
- h, Augmentation des marges
- i, Application d'un outil de consultants
- j, Critères quantitatifs d'un système de qualité
- k, Autres

9. A quelle fréquence recevez-vous des conseils sur la façon de mener Intelligence Economique:

- a, Tous les mois
- b, Une fois par an
- c, Jamais
- d, Autres : _____

10. Avez-vous déjà participé à un événement de CCI sur L'Intelligence Economique?

- a, Oui
- b, Non

11. Quel(s) organisme(s) vous donne(nt) ou vous a donné des conseils sur L'Intelligence Economique?

- a, Gendarmerie
- b, Experts Comptables
- c, Consultants
- d, Chambres de Commerce et d'Industrie
- e, Aucune
- f, Autres : _____

12. A la phrase : « L'analyse des besoins Intelligence Economique pour mon entreprise pourrait m'aider à gérer mon activité », vous pensez :

Tout à fait d'accord	D'accord	Neutre	Pas D'accord	Je ne sais pas
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. A la phrase : « La mise en œuvre d'un système d'Intelligence Economique permettrait d'améliorer la performance financière de mon entreprise », vous pensez :

Tout à fait d'accord	D'accord	Neutre	Pas D'accord	Je ne sais pas
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. A la phrase : « Le suivi de mes concurrents permettrait d'améliorer ma prise de décision ».

Tout à fait d'accord	D'accord	Neutre	Pas D'accord	Je ne sais pas
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. A la phrase : « Je crois que mes concurrents suivent l'activité de mon entreprise »

Tout à fait d'accord	D'accord	Neutre	Pas D'accord	Je ne sais pas
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. « L'investissement dans la gestion de l'information permettra d'améliorer la performance financière de mon entreprise »

Tout à fait d'accord	D'accord	Neutre	Pas D'accord	Je ne sais pas
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. Veuillez classer les contraintes suivantes: de 1 (plus petit) à 5 (plus grand) sur la gestion de vos informations.

- Les ressources financières requises _____
- Le temps nécessaire _____
- Les compétences techniques requises _____
- L'ambiguïté conceptuelle de L'intelligence Economique _____
- La difficulté à cerner mes besoins en Intelligence Economique _____

18. Etes-vous un homme ou une femme ?

a, Homme

b, Femme

19. Quelle être votre date de naissance

20. Quelle être votre niveau professionnel :

a, propriétaire, chef d'entreprise

b, cadre ou profession intellectuelle supérieure

c, profession intermédiaire

d, employé

21. Quelle être votre code postale ?

Comme indiqué préalablement les réponses restent anonymes. Cependant si vous voulez recevoir un résumé des résultats vous pouvez laisser votre email et votre nom.

Appendix 6

Code Book for SME PhD Data

Oct 2011

Variable	Variable Name	Variable Code
Company Size (10 to 49; 50 to 249 employees)	Small medium	Small = 1 Medium = 2
Sector Telecoms or Automobile	Telecom Auto	Telecom = 1 Auto = 2
Function (Owner Manager; upper Management; Professional; Employee)	Own M Man Pro Empl	Own M = 4 Man = 3 Pro = 2 Empl = 1
Internationalisation Exports as % of sales: 0%; <10%; 10 to 50%; >50%	None Little A lot Major	None = 1 Little = 2 A lot = 3 Major = 4
Male or Female respondent	Male Female	Male = 1 Female = 2
Age	Age	Age in years
Region (Ile de France or Rhone-Alpes)	Il de F Rh-Alpes	Il de F = 1 Rh-Alpes = 2
Attitudes (CI needs analysis aids company performance; monitoring the competitors aids performance; setting up a CI system aids performance)	Needs Monit System	Disagree = 1 Neutral = 2 Agree = 3 Strongly Agree = 4 Don't know = 5
Constraints (conceptual ambiguity of CI; lack of financial resources; lack of technical competences; lack of time; difficulty of knowing needs)	Ambig Fin Tech Time Needs	Ranked from row 1: 1: least important 5: most important Ambig = 1 Fin = 2 Tech = 3 Time = 4 Needs = 5
How frequently the SME receives professional advice on CI	Never Once a year Every month Other	Never = 1 Once a year = 2 Every month = 3 Other = 4
Participation in CCI CI event	Part Non part	Part = 1 Non part 0

Variable	Variable Name	Variable Code
Who is responsible for CI	Resp4CI	Other = 1 Director of Quality = 2 Director of R & D = 3 Director of Finance = 4 Director of Sales = 5 Director of Marketing = 6 Owner Manager = 7 Director of IT = 8 Nobody = 9
What term is used in regard to information management? (More than one could be chosen)	Env Scan CI Cor I Strat Intell MR BI KM None Other	Environmental Scanning = 1 Competitive Intelligence = 1 Competitor Intelligence = 1 Strategic Intelligence = 1 Market Research = 1 Business Intelligence = 1 Knowledge Management = 1 None = 1 Other = 1 Not chosen = 0
Entities for advice	Gendarmerie Chartered Accountants Consultants CCI None Other	Gendarmerie = 1 Chartered Accountants = 1 Consultants = 1 CCI = 1 None = 1 Other = 1 Not chosen = 0

Appendix 7

Node Summary Report

This summary report is generated by NVivo software. It stipulates the free node titles which were developed for structuring the transcripts from the interviews. A node is a stored code. Sources are the 15 CCI which were interviewed. References refer to specific phrases which were coded from the transcripts of the semi-structured interviews with CCI CI programme directors.

Project: CCI Interviews 2009

Generated: 29/08/2009 22:35

Arguments which work

Free Node

Description: Insights into what works in convincing the SME managers about CI.

Created On: 03/07/2009 10:22 **By:** JS

Modified On: 24/08/2009 15:36 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	10	25	925	39
Total	10	25	925	39

Attitudes towards CI

Free Node

Description: Attitudes stated towards CI of the SME managers as seen by the CCI animator.

Created On: 03/08/2009 10:04 **By:** JS

Modified On: 24/08/2009 15:31 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	15	56	2433	67
Total	15	56	2433	67

Behaviour Objectives

Free Node

Description: What is expected as behavioural changes due to CI programmes.

Created On: 12/08/2009 15:46 **By:** JS

Modified On: 17/08/2009 16:12 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	4	5	257	4
Total	4	5	257	4

Competitor monitoring**Free Node****Description:** Comments towards the degree and importance of monitoring the competitors.**Created On:** 03/08/2009 09:59 **By:** JS**Modified On:** 24/08/2009 15:29 **By:** JS**Users:** 1**Cases:** 0

Type	Sources	References	Words	Paragraphs
Document	7	12	464	18
Total	7	12	464	18

Date of CI programme commencement**Free Node****Description:** Gives the date when the CI programme started.**Created On:** 03/08/2009 09:02 **By:** JS**Modified On:** 24/08/2009 15:25 **By:** JS**Users:** 1**Cases:** 0

Type	Sources	References	Words	Paragraphs
Document	15	15	299	15
Total	15	15	299	15

Evaluation of the programme**Free Node****Description:** Reference to evaluations of the CI programme.**Created On:** 07/08/2009 16:28 **By:** JS**Modified On:** 24/08/2009 15:33 **By:** JS**Users:** 1**Cases:** 0

Type	Sources	References	Words	Paragraphs
Document	9	12	871	20
Total	9	12	871	20

Financing of programmes**Free Node****Description:** Statements that illustrate financial support to SMEs for CI.**Created On:** 03/08/2009 09:31 **By:** JS**Modified On:** 23/08/2009 12:13 **By:** JS**Users:** 1**Cases:** 0

Type	Sources	References	Words	Paragraphs
Document	9	19	886	22
Total	9	19	886	22

Perceived Constraints	Free Node
------------------------------	------------------

Description: Reference to perceived constraints by the SMEs to conduct CI

Created On: 03/08/2009 10:09 **By:** JS

Modified On: 24/08/2009 15:29 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	13	22	157	5
Total	13	22	157	5

Perceived Constraints Development	Tree Node
--	------------------

Description: Here a branch of nodes was developed around the perceived constraints theme.

Created On: 03/08/2009 09:12 **By:** JS

Modified On: 14/08/2009 10:41 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	13	22	271	7
Total	13	22	271	7

Number of employees involved	Free Node
-------------------------------------	------------------

Description: CCI employees.

Created On: 07/08/2009 16:40 **By:** JS

Modified On: 24/08/2009 15:27 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	15	15	280	15
Total	15	15	280	15

Organisations giving advice	Free Node
------------------------------------	------------------

Description: Private or public organisations which give CI advice to the SMEs

Created On: 03/08/2009 09:50 **By:** JS

Modified On: 24/08/2009 15:34 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	15	41	1945	58
Total	15	41	1945	58

CI Advisors	Tree Node
--------------------	------------------

Description: Here a branch of nodes was developed around the CI advisors' theme

Created On: 03/08/2009 09:01 **By:** JS

Modified On: 14/08/2009 09:01 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	15	18	186	5
Total	15	18	186	5

Node Summary Report

Page 3 of 6

Terminology	Free Node
--------------------	------------------

Description: Here the interviewees gave their views on SME terminology for CI.

Created On: 03/08/2009 09:01 **By:** JS

Modified On: 14/08/2009 09:01 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	7	8	127	8
Total	7	8	127	8

Terminology	Tree Node
--------------------	------------------

Description: Here a branch of nodes was developed around terminology

Created On: 05/08/2009 09:19 **By:** JS

Modified On: 10/08/2009 10:16 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	15	16	106	5
Total	15	16	106	5

Programme Innovation	Free Node
-----------------------------	------------------

Description: Original approaches to fostering CI.

Created On: 03/08/2009 17:29 **By:** JS

Modified On: 14/08/2009 17:29 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	4	6	372	6
Total	4	6	372	6

Node Summary Report

Page 4 of 6

Programme Success	Free Node
--------------------------	------------------

Description: Here are comments that reflect positive results from the CI programme.

Created On: 03/08/2009 09:06 **By:** JS

Modified On: 21/08/2009 18:06 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	3	3	124	3
Total	3	3	124	3

Responsible for	Free Node
------------------------	------------------

Description: Here the interviewees state what their job consist of in general terms.

Created On: 03/08/2009 08:56 **By:** JS

Modified On: 24/08/2009 15:20 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	10	11	463	19
Total	10	11	463	19

Sectorial attitudes	Free Node
----------------------------	------------------

Description: Comments referring to different sectors having different attitudes towards CI.

Created On: 03/08/2009 10:13 **By:** JS

Modified On: 23/08/2009 12:13 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	8	10	676	14
Total	8	10	676	14

Size of SME targeted	Free Node
-----------------------------	------------------

Description: Reference to the size of SME targeted in terms of number of employees.

Created On: 03/08/2009 09:40 **By:** JS

Modified On: 24/08/2009 15:27 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	15	18	356	22
Total	15	18	356	22

SME characteristics	Free Node
----------------------------	------------------

Description: How SMEs are perceived.

Created On: 10/08/2009 10:34 **By:** JS

Modified On: 23/08/2009 12:13 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	12	14	681	13
Total	12	14	681	13

SME manager definition	Free Node
-------------------------------	------------------

Description: Comments referring to the SME manager's ability to define CI.

Created On: 03/08/2009 09:53 **By:** JS

Modified On: 24/08/2009 15:32 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	13	14	518	28
Total	13	14	518	28

Who is responsible for CI	Free Node
----------------------------------	------------------

Description: Comments referring to who is responsible for CI in SMEs.

Created On: 03/08/2009 09:56 **By:** JS

Modified On: 14/08/2009 10:15 **By:** JS

Users: 1

Cases: 0

Type	Sources	References	Words	Paragraphs
Document	9	10	212	10
Total	9	10	212	10

Appendix 8

Summary Report of Cumberland Lodge Conference 2011: Life Beyond the PhD

Introduction

From the 15th to 18th August, 2011 about 40 PhD students from across the UK were invited to this residential research conference. Cumberland Lodge is in The Great Park, Windsor and since 1947 it has had a social and educative role hosting non-commercial events throughout the year. The conference 'Life beyond PhD' is held every year and is planned to bring PhD students from a variety of disciplines together in an environment where they can engage and interact amongst themselves and reflect on their future as researchers. It is a very pleasant and thought provoking environment in which the PhD students are made to feel appreciated and valued for their contribution. This summary is to share some of the key points and messages that were covered over the 4 days, namely, the speakers, the workshops and the presentations. We, Stella Karageorgi and Jamie Smith, were privileged to represent DMU.

Speakers

The conference works under the 'Chatham house Rule' which means that no speaker or the speaker's affiliation may be revealed. This is to encourage open debate. Speakers came from government, academic, journalist and business domains. The speakers' presentations touched upon various topics concerning PhD life, professional life inside and outside the academia as well as the value of the skills gained from their research degree and how they are transferable in any setting; skills such as autonomy, pro-activeness, information management and problem solving were given special emphasis. Many of the speakers have given personal testimonies on how the PhD influenced their life and professional choices and emphasized that the PhD have helped them develop not only as professionals but as people. Further issues discussed were the government policy of raising fees for undergraduates was discussed and overall the consequences were seen as negative. There was no hiding the fact that employment, even for PhD graduates, would be difficult, notably in the academic and teaching fields. A good insight was the fact that recent funding changes would swing the pendulum away from the research

driven model which dominates, towards teacher driven and student satisfaction criteria in a more student choice market.

Workshops

Each of us could attend 3 workshops. The first one was on writing CVs and interviews. One very effective interview technique presented was the STAR approach (Situation, Technique, Action, Results) which structures how you present your arguments in an interview setting. It is easily found through search and we highly recommend that you look it up. Although the idea was not new, it was emphasized that CVs should be written for each and every job application, fitting verbs, adjectives and experience to the job ad. A second workshop also honed CVs and cover letters. The workshop on writing research applications was very useful as the skills taught are equally pertinent for write up in a PhD. Writing techniques were practiced in the session and we reviewed actual research funding applications. It was surprising how short they were, only a couple of pages. The presenter also suggested reading the following book in which can find useful guidelines on writing our dissertation. The book is by Rowena Murray, *How to write a thesis* (Open University Press, 2002).

Presentations

Each student had to give a 10 minute presentation followed by 10 minutes of questioning from other students. It should be emphasized that no subject dominated the student body. There were medical, art, history, literature, management and hard science subjects amongst others. The goal was to communicate your own narrow specialisation to non-experts. Quite tricky actually but a very good experience since it forces you to communicate more effectively and in simpler language which could be understood by people outside your field of expertise! The student's presentations were also a great opportunity to understand and see the greater picture of the research world and to also appreciate each other's unique contribution to the furthering of knowledge. Furthermore, it was very interesting to see how each student presented their work and to get ideas and feedback on presentation and communication skills. We also gave each other anonymous feedback and voted on a winner in each of three groups (about 17 in each group). It was immensely enjoyable and fulfilling to see and question the other students' work. To be honest I thought it might be a slow part of the

conference but not at all. In spite of the subject heterogeneity, we all found ourselves to have quite a bit in common in terms of approaching the end of the PhD process.

Overall Impressions

Virtually all the speakers had done a PhD themselves. Few of them had foreseen the career they ended up with at the time they finished their studies. The commonality is that the PhD process taught them organisational and intellectual skills that permitted them to stand out. Listening to the personal experiences of the speakers was a very valuable experience as it helped us gain a better understanding about our role as researchers and see ourselves beyond the PhD life. As one speaker stated, the PhD is not just about gathering and assembling information but to further knowledge and our role after the PhD is to bring change to society as thinkers.