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Editorial Board

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Co-Editors' Letter

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This issue of the *Journal of Competitive Intelligence and Management* contains four peer-reviewed articles. The first of these articles, "Issues in Defining Competitive Intelligence: An Exploration" considers how CI is currently defined in the literature and who defines the term. By examining definitions in documents as well as terms assigned by others to documents, trends in the ways in which the term competitive intelligence is currently used may be seen. While most definitions and descriptions of competitive intelligence are process-oriented, some also included descriptive deliverables and products. This research suggests that there is no one consistent definition of CI, though there are some dominant trends in terms of processes and products named.

James W. Hesford's "An Empirical Investigation of Accounting Information Use in Competitive Intelligence" the second article in this issue, presents a study in the use of competitors' accounting information by individuals engaged in competitive intelligence. The results show that competition, organizational support and accounting knowledge lead to greater use of accounting information in competitive intelligence activities. Accounting information was found to be positively associated with competitive intelligence unit effectiveness that, in turn, is positively associated with organizational performance.

The third article, "Competitive Intelligence as a Driver of Co-evolution within an Organization Population" by Mirva Peltoniemi and Elisa Vuori explores what might be the interactive and reactive consequences of CI activities within a population of competing organizations. Population level consequences are considered in co-evolutionary terms, using the Red Queen effect and emergence as constructs for conceptual analysis.

The last article in this issue, "The Emergence and Uniqueness of Competitive Intelligence in France" by Jamie Smith and Leïla Kossou considers French approaches to Competitive Intelligence. After establishing what form CI takes in French industry and language, the unique facets in France are discussed within the context of government initiatives, Chambers of Commerce and Industry, and Regional Intelligence. Also considered are the roles of graduate programs in the development

of CI in France, as well as the contributions of consultancies, support organizations, and academic research to the field.

About JCIM

The *Journal of Competitive Intelligence and Management* is published by the Society of Competitive Intelligence Society, via the Competitive Intelligence Foundation. Calls for papers, author guidelines and a sample submission can be found at the Society of Competitive Intelligence Professionals web site (www.scip.org) and also the *Journal of Competitive Intelligence and Management* pages within that site. Prospective authors are welcome to contact the Co-Editors via email.

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Issues in Defining Competitive Intelligence: An Exploration

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Abstract

    This article begins by considering how some major organizations in North America address the definition of the term 'competitive intelligence'. That is to say, it attempts to set this exploration in the current contexts in which the term is used and defined. It attempts a synchronic exploration of current definitions and descriptions of CI by considering competitive intelligence as a term used in a body of documents and in document surrogates as represented by assigned indexing terms or controlled vocabulary metadata. Results suggest that there is not a definite description of the field. Descriptions and definitions were mostly process oriented but some defined CI in terms of products and final deliverables.

Introduction

    Several years ago Herring (2002) and Giese (2002) debated the meaning and description of competitive intelligence and the role of its practitioners in articles in the Society of Competitive Intelligence Professionals' (SCIP) *Competitive Intelligence Magazine*. Among the issues raised were those relating to the meaning of the word 'intelligence' relative to the term 'competitive intelligence' (CI). Like many attempts at defining and describing a field, this debate looks back on the origins and connotations of the words themselves the term 'competitive intelligence'. It would seem that the impetus behind most of such discussions arise from either the need to define the field in a way that is clear and definitive or from a desire to differentiate CI from other less desirable practices. Everyone is quite clear as to what competitive intelligence is *not;* ethical and practical boundaries have been well defined. However, it is not very clear as to what are the inclusive boundaries of the field.

    This is a common approach when one attempts to define the scope of a field and set it in context. Despite this commonly seen strategy used by many who seek to define terms by going back to the earliest uses of a word, when creating definitions, it is most useful to examine current meanings (Landau, 1991). While we are mindful of the concerns of many to differentiate CI from other intelligence practices, this debate and others, continue in the present time with the result being continuous definitions and descriptions of what constitutes CI, what remains outside of its scope, and the nature of its practice and practitioners.

    This paper is a synchronic exploration of current definitions and descriptions of CI. It explores competitive intelligence as a term used in a body of documents and in the surrogates of those documents as represented by assigned indexing terms or controlled vocabulary metadata. Included are brief comments about the definitions

that appear in contemporary ephemeral documents – such as CI consultants' websites. It covers the period of January 2003 to November 2007 and is limited to those definitions and surrogates which are in English, even if the original document appears in another language and.

No attempt is made to offer a definitive interpretation of CI nor is its intention to define a discipline but only to explore and explore how Competitive Intelligence is being defined. In so doing, it considers how others are defining and describing the field, as reflected in the terms that they use and what their current definitions and descriptions suggest. This exploration keeps in mind that definitions, by their nature, are set in the past. That is to say that the act of collecting and reviewing credible descriptions means that it draws upon what has already been established or is currently in vogue at the time of writing. Formal definitions and descriptions, no matter how contemporaneous, reflect actions in the past and may suffer from language lag, or culture lag, or both. Indexing and other surrogates or metadata have the additional component of an added and later voice which may, perhaps, increase or reduce language and culture lag relative to the individual paper. This allows one to consider relationships among documents.

SCIP's Definition of CI

In answer to the frequently asked question (FAQ) "What is CI?", the Society of Competitive Intelligence Professionals (SCIP), gives the definition as " a necessary, ethical business discipline for decision making based on understanding the competitive environment" (SCIP 2007a). The definition of competitive intelligence included as a parenthetical phrase in the summary section "About SCIP, " currently posted on the SCIP website refers to competitive intelligence as "the legal and ethical collection and analysis of information regarding the capabilities, vulnerabilities, and intentions of business competitors" (SCIP, 2007b). The first of these statements reflects the broad concern for the nature of the discipline, the second statement reflects the processes and practices with which a CI professional is likely to be concerned.

In 2001, Stephen Miller, then editor of SCIP's *Competitive Intelligence Magazine*, used a process definition to describe CI. He relied upon what he said was Kahaner's 1996 definition of CI as "the process of monitoring the competitive environment (Miller, 2001). To be more exact, CI is a systematic and ethical program for gathering, analyzing and managing information that can affect a company's plans decisions and operations." Miller expanded upon this with a prescriptive characterization of the process in which it is claimed that "CI enables managers in companies of all sizes to make decisions about everything from marketing, R&D, and investing tactics to long term business strategies". In 2001 and for at least four years afterward, the Society's website posted the definition of CI that was similar and/or derivative; wherein CI was defined as:

"The process of monitoring the competitive environment. CI enables senior managers in companies of all sizes to make informed decisions about everything from marketing, R&D, and investing tactics to long-term business strategies. Effective CI is a continuous process involving the legal and ethical collection of information, analysis that doesn't avoid unwelcome conclusions, and controlled dissemination of actionable intelligence to decision makers".

Although it has been absent from the website at least since late 2006, it is still frequently cited as *the* definition of CI, perhaps because of its provenance, perhaps because of its web presence, or web prominence for so many years. Among the definitions and descriptions examined for this study, it remained the most popular. Because of the diverse nature of the writers in the field and the definitions that they presented, while it was the most frequently cited, the actual number of times it was cited was relatively small.

More recently, in its research report, *State of the Art: Competitive Intelligence,* the Competitive Intelligence Foundation (CIF), the self-described "research arm" of SCIP and publisher of the *Journal of Competitive Intelligence and Management,* does not specifically define CI (Fehringer, Hohhof & Johnson, 2006). This work describes the current practices in corporate CI and, as such, includes discussion of 'tools and techniques'. The techniques are primarily analytical techniques and the tools primarily support these techniques, so may be seen as ancillary to the processes. However, the report includes considerable detail about the nature of "deliverables" which suggests that CI may be defined both as a product and by the processes employed.

The CIF is currently "collecting a cataloging a body of knowledge" that has been characterized by the current SCIP President , who previously served as Chair of the CIF Board of Trustees, as "perhaps the single most important initiative for the intelligence profession since the creation of SCIP over twenty years ago" (Goldberg, 2007). This project, currently under way, is researching practices and other criteria that will constitute a "body of knowledge" that, it may be supposed, will contain some definitive elements, both literally and figuratively. The project, as described, would appear to be focused on competencies of practicing competitive intelligence professionals and intended to determine the future direction of professional practice in the future:

"When completed, it will define a common knowledge base to develop training programs, job descriptions, career paths and publications. It will be an inventory of what an individual must know to achieve success. It will explain now and into the future what the competitive intelligence profession is" (Goldberg, 2007)

One may suppose that the phrase "define a common knowledge base" refers to establishing parameters in terms of capabilities or competencies to set standards of practice. On the other hand, this exploration looks at what appear to be recent trends in how CI is defined. It is expected that the stated intention of the SCIP project to define a body of knowledge when completed, will mark a turning point in defining CI by scoping practice and process in a way that does not codify practices but enables change.

Other Voices

Corporate librarians and other information professionals educated in Library and Information Science (LIS) who are working in information intensive settings have consistently played a part in CI activities on professional and scholarly levels. The original SCIP Board of Directors contained at least two members whose Graduate education was in LIS and a background in secondary business research is commonplace in CI collection in the United States. Corporate librarians have long played a part in collection, basic analysis and production of CI deliverables for their organizations. It is not surprising that the Special Libraries Association (SLA) should have a Competitive Intelligence Division. The Competitive Intelligence Division of SLA describes the scope of CI and the work of its practitioners within its CI Division context as follows:

> "Competitive Intelligence (CI) Division encompasses all aspects of competitive intelligence, including planning, identifying decision makers' intelligence needs, collecting and analyzing information, disseminating intelligence products and services, evaluating intelligence activities, promoting intelligence services among a client base, and additional industry-specific issues. Competitive Intelligence Division members concentrate on developing their competitive intelligence skills to assist them in functioning more effectively as intelligence professionals within their respective organizations" (SLA, 2007)

Of interest for this study, is that CI is defined above in terms of six specific actions to be taken by its practitioners; which appear to align themselves with actions or processes relating to models of the competitive intelligence cycle (Miller, 2001), a repeating cycle of processes, or as key intelligence topics (KITs) (Herring, 1999) which is a results oriented intelligence process model. Although McGonagle (2007) notes the many difficulties with various iterations of the CI cycle and other process models and it would appear that many organizations have moved away from concept of cyclical processes, many descriptions of the CI process and definitions of CI still explicitly state, or imply, the component parts of one of the many versions of the CI cycle.

Scholarly Points of View

Fleisher, Wright and Tindale (2007), note that "the field of CI and its management suffers from a variety of semantic and domain ambiguities that remain unresolved after several decades of research work". In this fourth of a series of articles examining various bibliographic indicators of the field, it is further noted that bibliometric exploration of the materials published through traditional channels will contribute to a determination of a body of knowledge in the field. The implication here is that if there were a body of knowledge that was generally accepted, a definition of the field would follow. Not surprisingly, one of the most clearly developed process descriptions come from Fleisher, former editor of the *Journal of Competitive Intelligence and Management.* In his recently published text with Bensoussan, titled *Business and Competitive Analysis* (2007), Fleisher devotes the first chapter primarily to defining and describing terminology and content relative to competitive analysis and in so doing, expressed similar concerns to those expressed in the bibliometric exploration work; which is that

> "there are numerous definitions of CI in contemporary practice and scholarship. Our current sense is that no single definition of CI is likely to be precise and universally accepted. As such, CI is generally viewed as *the process by which organizations gather actionable information about competitors and the competitive environment and , ideally, apply it to their planning processes and decision-making in order to improve their enterprise's performance.* CI links signals, events, perceptions and data into discernable patterns and trends concerning the business and competitive environments."

Social science scholars and practitioners often begin their writing by setting the parameters of the research under discussion, in ways similar to those which appear in some of the paragraphs above. They set limitations of scope, as has been done in the definitions and descriptions. They also define their constructs through hypotheses formation, research questions and definitions. Herein lies the stuff and substance in written work for considering the boundaries of a definition of competitive intelligence.

CI in Metadata

One of the ways fields of knowledge are defined is through bibliographic or bibliometric analysis of published professional and scholarly journals. Probably the most familiar to scholars are techniques using co-citation analysis and citation counts to determine the structure of fields and "research fronts" (Garfield, 1994). Thomson Scientific (formerly ISI) data is commonly said to monitor the development of new fields and the emergence of new research fronts. Examinations of indexing terms and the contents of articles listed under the term "competitive intelligence" in Thomson Scientific's *Science Citation Index and Social Science Citation Index* tend to support the

many of the claims made by Fleisher, Wright and Tindale (2007). The recursive nature of this data and its analysis may suggest that before there is a large enough body of work in a field, other bibliometric strategies may be worth examining, including less formalized explorations. In the case of CI, there was a total of 124 cited works that were indexed under the term "competitive intelligence" in the Thomson Scientific databases by the end of November 2007. Even when related terms were used to identify works that defined or described the field, the possibilities for identifying trends were somewhat limited by the relatively small number of works and the diversity of the works themselves. An examination of the parameters of CI among these works begins to suggest a boundary-spanning field; represented perhaps by a body of practices from a variety of fields rather than a body of practice or a body of knowledge. The small number of articles using the term competitive intelligence suggested that a broader, more informal exploration.

Another exploration was then undertaken. Three large aggregated business databases were used to identify the scope of the field. In considering how CI is defined in the business community, the contents of these three business-oriented aggregated journal article databases were explored; *ABI Inform, Business &Management Practices*, and *Gale Group Trade & Industry Database.* These databases include articles from scholarly journals and business and trade publications. In addition, articles in these databases, in addition to containing the text of the articles themselves also included metadata surrogates in the form of a controlled vocabulary (indexing terms). The term "competitive intelligence," appearing anywhere in the article, was used to identify a set of 18, 161 potentially relevant documents. A search for the term "competitive intelligence" yielded 11,229 unique items which were published from January 2003 through November 2007, duplicate articles having been removed from the original set of documents identified. Of these, 379 documents used the term "competitive intelligence" in the title with the indexing term "competitive intelligence" appearing in 3071 unique items. Similar to a sample of actual definitions, the indexed data reflects a focus on process description but includes product descriptors as well. Table 1 contains the ones most frequently used descriptors. The diversity of indexing terms reflects the variety of terms that authors use; either instead of the term competitive intelligence or in addition to it. The diversity in terminology supports the idea that the definition of competitive intelligence has not stabilized.

Table 1 - Frequency of Descriptor Use

```
1  2708 24.7% COMPETITIVE  INTELLIGENCE
2  944  08.6% MANAGEMENT
3  670  06.1% COMPUTER  SOFTWARE  INDUSTRY
4  644  05.9% MARKETING  &  SALES
5  611  05.6% INFORMATION  TECHNOLOGY
6  483  04.4% STRATEGIC  PLANNING
7  427  03.9% BUSINESS  INTELLIGENCE
8  425  03.9% MARKET  RESEARCH
9  365  03.3% GUIDELINES
10 36   03.3% STUDIES
11 343  03.1% PHARMACEUTICAL  INDUSTRY
12 334  03.0% INFORMATION  MANAGEMENT
13 314  02.9% INTERNET
14 313  02.8% ONLINE  SERVICES
15 263  02.4% KNOWLEDGE  MANAGEMENT
16 261  02.4% TRENDS
17 259  02.4% GENERAL  BUSINESS
18 256  02.3% ANALYSIS
19 252  02.3% SERVICES
20 247  02.2% DATABASE  INDUSTRY
21 232  02.1% PRODUCT  INTRODUCTION
22 228  02.1% USAGE
23 224  02.0% INFORMATION  SERVICES
24 213  01.9% BANKING  INDUSTRY
25 209  01.9% WEB  SITES
26 208  01.9% COMPETITIVE  ADVANTAGE
27 180  01.6% ONLINE  INFORMATION  SERVICES
28 178  01.6% MARKETING
29 178  01.6% TECHNIQUE
30 166  01.5% MARKET  STRATEGY
31 153  01.4% STRATEGIC  MANAGEMENT
32 150  01.4% TECHNOLOGY  APPLICATION
33 148  01.3% BOOK  REVIEWS
34 147  01.3% COMPETITION
35 143  01.3% MANYCOMPANIES
36 140  01.3% REPORTS
37 139  01.3% INDUSTRIAL  ESPIONAGE
38 138  01.3% DECISION  MAKING
39 137  01.2% ASSOCIATIONS
40 135  01.2% CASE  STUDIES
41 134  01.2% INFORMATION  SERVICES  INDUSTRY
42 133  01.2% INFORMATION  RETRIEVAL
43 132  01.2% DATA  BASES
44 127  01.2% PRODUCT  DEVELOPMENT
45 126  01.1% COMPUTER  SERVICES  INDUSTRY
46 125  01.1% TRADE  SECRETS
47 117  01.1% BOOKS
48 116  01.1% EXECUTIVES
49 116  01.1% HEALTH  CARE  INDUSTRY
50 116  01.1% TELECOMMUNICATIONS  EQUIPMENT
(3071 Unique  items  with  multiple  descriptors  for  most  items)
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Trends in Descriptions

Writers and indexers use many terms to supplement or to substitute for competitive intelligence. Terms such as business intelligence, strategic intelligence, competitor intelligence, corporate intelligence, technical intelligence, competitive analysis, customer intelligence, environmental monitoring, etc. are used by authors when they mean CI. Most definitions and descriptions are focused on CI as a process, although many of them also include words that suggest products as well.

Many descriptions had, as their focus, one or another variant of the "Intelligence Cycle" or some other process-centric model that describes the field rather than defines it. Some process descriptions were meant to be definitive; most seemed to be inclusive of development, in keeping with the idea of process. Some process descriptions focused on CI as being primarily about competitive analysis and defined the field as if the data and information necessary for such analysis emerged from somewhere authoritative and complete, like Athena springing fully grown from the head of Zeus! Most of these process descriptions were prescriptive, citing others' constructs or models of CI, as is typical of scholarly style.

Others prescribe their own construct or model. In some instances, an author was enamored with a particular model and declared or implied that it is the "best" one, but this is probably not unusual in scholarly or in practitioner literature. No comparison was undertaken to ascertain whether that was the case in similar fields of endeavor. Although less than one percent of the process descriptions examined in this exploration used the term competitive intelligence as, or like, a verb ("through competitive intelligence …") many process descriptions used the term as a noun.

There was another tendency to describe competitive intelligence in terms of products; specifically tools and deliverables. These products represented both the deliverables of CI processes and products, such as analysis software. Most commonly, they expressed a variant on the deliverable product description of CI, representatively expressed by in a recent text by Fuld, as "analyzed information that gives you insight and competitive advantage" (2006). Product-centric definitions, especially those that reflect a focus on deliverables *may* reflect practitioners' productivity concerns and still imply the process in which the tools are used and the deliverables that are the result of the processes named. Still, it is worth noting that some definitions and descriptions describe CI as a product, rather than a process, even within a scholarly context.

Descriptor Defined Considerations

In contrast to author-assigned metadata found in free web articles as well as in some more traditional media, many thesauri or controlled vocabulary lists in aggregators' journal article databases employ lexicographers. In some cases, subject specific thesauri that accompany aggregated databases maintain editorial boards with lexicographers, practitioners and experts. In other cases, various computational techniques (sometimes colloquially referred to as "smart indexing") are used to create indexing terms. It may be worth noting, in passing, that many of the article databases

that are available to aggregators already contained human-generated indexing, whether entirely hand-crafted or computer-assisted.

These smart indexing systems, in all likelihood, utilized already existing indexing in some fashion. Journal database aggregators may have used it for paradigmatic purposes in the early stages of development to enhance the accuracy of extraction methods from the corpus. Regardless of their source or origin, currently the indexing terms, in effect, act as defining terms by drawing together content that is logically connected, even when it may not be bibliographically connected or even semantically connected. That is to say it is entirely possible for an indexer to label an article with the term "competitive intelligence" (or any other term, for that matter) even when the author does not refer to the term at all. In effect, the indexer creates the definition. This is also true of the terminology that is found in other document surrogates not written by the original author, such as abstracts.

Exclusionary Concerns

CI practitioners and scholars have long been plagued by media assertions that competitive intelligence is corporate espionage. So, CI is not only defined and described in ways that emphasize ethical behavior and open source research, but many of its definitions explicitly name and exclude corporate espionage as a part of the sphere of performing of CI. A representative statement may be seen in the "Frequently Asked Questions" (FAQ) page on the current SCIP website which poses and answers the question:

> "Is CI espionage? No. Espionage is the use of illegal means to gather information. It isn't necessary to use illegal or unethical methods in CI. In fact, doing so represents a failure of CI, since almost anything decision makers need to know about the competitive environment can be discovered using legal, ethical means. Most information that can't be found through open-source collection and ethical inquiry can be deduced by using a variety of analytical tools -- just one of the ways CI adds value to an organization. By joining SCIP, a member agrees to abide by the Society's Code of Ethics, which forbids breaching an employer's guidelines, breaking the law, or misrepresenting oneself.

> "Are CI and counterintelligence the same thing? "No. The term counterintelligence describes the steps an organization takes to protect information sought by "hostile" intelligence gatherers. One of the most effective counterintelligence measures is to define 'trade secret' information relevant to the company and control its dissemination." (Society of Competitive Intelligence Professionals, 2007a)

Free-Web Definitions

While it is not the focus of this paper to pursue a systematic recording and analysis of CI definitions present in ephemera, as represented in the websites and literature of consultants and other vendors who serve CI practitioners; one must acknowledge that these materials do, and no doubt will, continue to have an impact on the terminology used by scholars as well as practitioners, when describing CI. Since this is a synchronic examination of the nature of CI definitions, and because of the prominence of the free web and easy access to consultant and vendor information in a search engine-enabled world, one must mention the considerable, though ephemeral, material on the Web, though mostly promotional materials designed for sales and marketing of services and products.

Regardless of whether a writer addresses a scholarly audience or not, "any speaker must adopt his or her discourse and manner to the expectations and biases of the audience" (Fetterman, 1993). While there may be a limited scholarly value to such ephemera, it is publicly available. Precisely because it is readily available, a cursory examination was made of some of the sites that have had a long and well established presence, in terms of "web years." Definitions offered and posted at websites of consultants and consultancies, where CI is the only or main business and where there is a considerable web presence, generally (but not always!) prepared the reader for the services or products offered. The hardly surprising conclusion from this part of the investigation resulted in affirming, from "outside" the predominance of process-based descriptions of CI, even at sites where products and services were being sold.

Defining the scope of one's business follows a similar, though arguably less rigorous, pattern than scholars defining the scope of their work. Since few consultants or vendors can successfully claim to do all things in a particular field and have all qualities and abilities in a particular sphere, their descriptions of services and products provided must also have a scope as well as a bias. While in some respects, the scope may use different terminology, the basic meanings are often quite similar. As is often the case, the idea here may be best seen by looking at one of the exceptions to this statement. In some contexts, the term "business intelligence" (BI) was mostly meant to be a broader term than "competitive intelligence," and broader still than the early term "business competitor intelligence," which seems to have largely fallen into disuse. Buchda recently discussed several such descriptions and definitions; agreeing that in general it would appear that BI is a broader term, encompassing technological approaches to larger intelligence needs within an organization (2007).

It would appear that, especially in the last five years, there is another definition for the term business intelligence. An examination of articles listed in both *Social Science Citation Index and Science Citation Index* tends to support the term as described above. However, an examination of indexing terms, titles and journal frequency in the same three aggregated business journal article databases studied above showed the term "business intelligence" as representing software products, and sometimes processes, focused on content management and data mining of an organization's internal business documents. In addition, current use of the term

"business intelligence" in unstructured data on t he Free Web also focuses on software for data mining and data extraction. While the use of the "business intelligence" appears broader, relative to the intelligence sought, the term is narrower relative to the means and processes used to obtain intelligence, in that its use appears in recent years to be almost entirely connected to large scale data extraction, content management, or accounting practices.

Conclusion

Debate continues as to the definition of the field. CI is not unique in this respect. Developing fields struggle with variants in terminology and understanding; even those that are comparatively less controversial, in terms of the meanings associated with the word "intelligence" by the press and the public. This continuing volatility is reflected in the terminology used both by authors in defining CI and by indexers in characterizing it. CI is hardly unique in this (Pagliari *et al* 2005). It may be difficult to say when and if a field has stabilized and whether there is any value in semantic stability in a business field. Definitions wherein CI is represented or described as a product include those written by consultants and vendors in the field. The pervasive reality of web-based information creates a sphere where definitions from authoritative sources in the professional and scholarly world appear alongside others when searching the "free web." This also occurs when researching the topic through more traditional means. Preliminary investigations here suggest that further explorations may be warranted here. Thus far, with the exceptions noted above, the definitions and descriptions are similar in content and context to those contained within the more stable body of literature.

The predominance of definitions or descriptions indicate a process, as has been stated here, and noted by others. What becomes apparent in the exploration of articles based upon the common descriptor "competitive intelligence" is that there is little consensus as to what that constitutes this process and many indications that the process is mutable over time. It also differs considerably, depending upon the writers, the context in which they write, both in terms of industry and perspective – and the situation in which the writers place themselves. Considering that most of the literature addresses practice or analysis, process definitions seem to be the logical output. An examination of the parameters of CI, suggests a boundary-spanning field. It is represented, as suggested earlier, as a body of varying *practices*, as opposed to a body of practice and process; as a *body of knowing, a body of practicing,* or *a body of acting* rather than a body of knowledge.

Though it may seem contradictory to speak on the one hand of a synchronic examination of terms and, on the other. of Dervin's Sense-Making theoretic assumptions about humans "moving through time-space, bridging gaps, and moving on" (Dervin, 1999), given the highly situational nature of the definitions of CI and given the current state of web change and preservation, a synchronic examination of terms in aggregated journal article databases enabled the examination of a slice in time. While various archives have attempted to capture various slices of the Web at

particular moments in time, for this exercise, it would not have been possible, nor desirable, to adequately capture all movement in time. Because CI is a process set in situations that are dynamic and in which the players are moving forward in a constantly changing business environment, the variety of definitions may be a reflection of that process of constant change. The variety of process- oriented definitions may be a reflection of Dervin's Sense-Making methodology in action, as many persons move through situations, discover gaps and create bridges over those gaps, their new situations may invite new definitions of CI to develop.

In other process oriented professions, the word for the practitioner in that field or discipline often reflects the act of practice or process, such as teacher, lawyer, or farmer. In some fields the name of the field itself reflects the ongoing process nature of the field rather than the deliverables which are its outcomes. For example, though the deliverables in this field are the visible results of the process, the field is referred to as accounting, not accounts or accountables. In CI, that is not the case. Perhaps it is not possible to name the components of a process definitively. Perhaps it yet remains a task for future scholars, future practitioners, and for entities like SCIP and its research arm, CIF, to define the field. Or perhaps, the process-bound nature of CI activities, and the situational processes in which the players move through time and space, seeking bridges over their intelligence gaps, will continue to result in a variety of process definitions expressed by describing a variety of actions.

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Key Terms
Competitive Intelligence, Scope, Definitions, Descriptors

An Empirical Investigation of Accounting Information Use in Competitive Intelligence

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Abstract

This study investigates the use of competitors' accounting information by individuals engaged in competitive intelligence. In the proposed framework competitive intelligence is an activity that firms undertake to offset the adverse effects of competition. Discussions with practitioners guided theory and survey development. Using both objective and subjective measures, survey data is analyzed and hypotheses tested using a structural equations model. The results show that competition, organizational support and accounting knowledge lead to greater use of accounting information in competitive intelligence activities. Accounting information was found to be positively associated with competitive intelligence unit effectiveness that, in turn, is positively associated with organizational performance. Finally, the evidence suggests that accountants within the firm should extend their work beyond traditional, internally-focused activities to contribute to the firm's competitive intelligence effort, providing assistance with competitor cost assessment and financial statement analysis.

Introduction

Some organizational scholars believe collection and organization of outside-focused information is a necessary activity for the development of an effective information system (Drucker, 1998). One major survey reports that competitive intelligence has been adopted by 60% of the firms in their sample (Futures Group, 1997). Competitive intelligence (hereafter referred to as CI) involves the systematic collection and analysis of information about competitors. Information is collected on any factor that influences a firm's competitive environment, such as legal matters, the economy, technology and social factors (Barndt, 1994).[i]

Accounting information (AI) is one of many types of information that are collected in a competitive intelligence system. In this study, accounting information use by CI practitioners is defined as the collection or estimation of competitors' cost information and, when available, use of competitors' published financial information. Some practitioners suggest CI sources provide enough data for useful competitor cost estimates. When coupled with other intelligence, a firm may be better able to predict a competitor's actions and reactions. A competitor's financial statements, when available, may serve two goals: they may be used to (1) validate competitor cost estimates and, (2) evaluate a competitor's overall position and strength.

The accounting literature has discussed how management accounting can assist managers in externally-oriented functions, such as for competitor assessment (Simmonds, 1986; Shank, 1989). Another body of literature has suggested the use of accounting information in assessing competitor costs (Simmonds, 1981; 1982; 1986;

Jones, 1988; Fifer, 1989; Grundy, 1992; Dixon & Smith, 1993; Foster & Young, 1997; Shields, 1997; Nicolaou, 2003). Finally, professional societies also have taken an interest in the CI–management accounting interface, recently publishing guidelines on developing comprehensive competitive intelligence (Howell, 1996). However, limited empirical evidence suggests that competitor accounting information is valued as competitive intelligence data (Wall, 1974; Marren, 1998).

The explicit (or sometimes implicit) claim in the literature is that competitive assessment practices lead to improved performance of the firm (Shapiro, 1986; Tirole, 1988; Seo, 1991; Varian, 1993). Despite its theoretical importance and perceived value, evidence has consistently shown that accounting information was ignored or used minimally (Porter, 1980; 1985; Dunne & Roberts, 1992; Wilson, 1994; Guilding, 1999; Anderson & Guilding, 2006).[ii] Only one study could be found that has documented an association between use of competitor cost information and improved firm performance (Heinen & Hoffjan, 2003). Thus, to this point little is known about (1) whether and how firms use accounting information in competitor assessment and, (2) the factors that lead to a demand for competitors' accounting information. This paper looks at how accounting information supports competitive intelligence with a goal of determining the impact of accounting information on competitive intelligence effectiveness. Two contributions to the accounting literature are made. First, this paper provides a framework for the competitive intelligence process and how accounting information may support this process. Second, this study provides evidence of the use of accounting information in the emerging discipline of competitive intelligence, a practice considered by many firms to be vital to their competitiveness.

Personal interviews with 23 CI professionals helped identify several variables that appeared to be associated with AI use in CI. From interviews and a review of the literature, a model was developed that examines the impact of competition, accounting knowledge, CI training and organizational support upon the use of AI, and the consequences of AI use on CI unit effectiveness. It is well accepted that competition has a negative effect upon organizational performance (Bresnahan, 1989; Schmalensee, 1989; Stigler, 1996). To minimize the adverse impact of competition, firms engage in a number of responses, including product differentiation (Porter, 1980), cooperative behavior (Gal-Or, 1985; Gal-Or, 1986; Ziv, 1993) and CI. With investments in CI, firms hope to obtain credible information that can improve decision-making in pricing (Näykki, 1976; Milgrom & Roberts, 1982), financial structure (Brander & Lewis, 1986), output choice and incentive contracting (Fershtman & Judd, 1987). Improved decision-making should, in turn, improve organizational performance.

The results of this study are of interest to both accountants and competitive intelligence practitioners. This study finds that accounting information is frequently used by individuals engaged in competitive intelligence and that competition, CI practitioner accounting knowledge and organizational support are all associated with

greater use of AI. Greater AI use is associated with higher CI unit effectiveness and, through this, higher organizational performance.

The next section reviews the relevant literature, develops research hypotheses and presents a discussion of the conceptual model of the relationships among the variables investigated. This is followed by a discussion of the research method, participant selection, and empirical indicators. Empirical results are then presented using a structural equation model. The findings of the research, along with the study's limitations and possible extensions are discussed in the last section.

Theory and Hypothesis Development

In new topic areas, field research is appropriate for developing a deeper understanding of the phenomena and to aid theory development (Eisenhardt, 1989). Accordingly, the study began by interviewing 23 individuals engaged in competitive intelligence. Participants were non-randomly selected from 16 industries to attempt to maximize the variance of variables in the sample (Merchant, 1985). The objective was to focus on the phenomena (CI) across a range of organizational settings. Table 1 describes the industry, job titles and interview method of the field interview participants. Consultants were not a part of the formal interview process, but discussions with several consultants were helpful in focusing the early research. The participation rate for the interviews was 86%.[iii] Interviews ranged from 30 minutes to more than 3 hours following a structured format.

The interview protocol asked subjects to discuss: (1) The origins of CI in the firm and how it is conducted; (2) the participant's role in their firm's CI activities; and, (3) the role of accounting information (both competitors' and internal) in their CI efforts. Participants also completed a pilot form of the survey.[iv] Information gathered during the interviews helped to sharpen the survey instrument.

The scope of the CI effort varied across participant firms. For example, some organizations considered CI to be a high-level function supporting strategic decision-making whereas other organizations viewed CI as part of market research, supporting the sales and marketing effort. Some firms devoted significant resources to CI while others only committed staff on a part-time basis. Resource commitments included personnel, databases, training, and funds for travel and the hiring of consultants. Some firms did little more than clipping articles whereas others performed extensive analyses. Dissemination of competitive intelligence was broader in those firms that used CI to support strategic decision-making. Overall, it appeared that more sophisticated CI work involved greater use of AI. What also became clear was that CI was a mechanism to reduce environmental uncertainty. The firm's search for information extends to many areas, including competitors, regulatory agencies, political bodies, social and technical organizations, and universities. Its purpose can be offensive (to make preemptive moves on competitors) or defensive (to respond to threats). As such, CI not only helps reduce uncertainty, it can help a firm shape its environment.

Table 1
Information on Field Interview Participants

	Job Title	Industry	Interview Method
1.	Business Development Manager	Industrial Chemicals	Telephone
2.	Marketing Analyst	Telecom	Telephone
3.	Market Analyst	Defense	Site
4.	Marketing Manager	Semiconductor	Site
5.	Marketing Research Manager	Defense	Site
6.	Director, Project Planning	Biotechnology	Site
7.	Sr. Research Analyst	Utility	Telephone
8.	-	Utility	Telephone
9.	Market Research Manager	Information Services	Site
10.	Corporate Security Director	Defense	Telephone
11.	Project Manager	Utility	Site
12.	Director, Competitive Intelligence	Automotive	Telephone
13.	Senior Director, Strategic Planning	Services	Site
14.	Strategic Planning & Analysis	Health Care	Site
15.	Manager, Business Intelligence	Electronics	Site
16.	Market Analyst	Semiconductor	Telephone
17.	Sr. Market Analyst	Industrial Products	Site
18.	Senior Marketing Analyst	Biotechnology	Site
19.	Strategic Analyst	Financial	Telephone
20.	Manager, Information Research	Diversified	Site
21.	Manager, Business Analysis	Transportation	Site
22.	Corporate Economist	Transportation	Site
23.	Director, Strategic Planning	Food	Site

Note: Participants are listed in order of interview date

As an exploratory study, a parsimonious model was developed to assist in understanding how accounting information contributes to a firm's CI program. Combining the interview information with prior literature suggested that competition, organizational support, CI training and individual accounting knowledge affect the use of AI in CI. AI use, together with organizational support and CI training, affect CI unit effectiveness. In turn, higher CI unit effectiveness should be associated with better financial performance.

Determinants of Accounting Information Use

Competition

Economic theory predicts that competition will lead to a demand for accounting information. This occurs because managers gather information on their rivals to offset the negative effects of competition on organizational performance. A large body of analytical research demonstrates the importance of gathering information on competitors' costs. Strategic interaction models (i.e., Stackelberg, price leadership, Cournot, Bertrand and collusion) assume that demand functions and competitor cost functions are known (Varian, 1993). Firms make choices given beliefs about competitor behavior that is influenced—although not necessarily constrained—by their competitors' costs (Seo, 1991).

Another line of study – the strategic conflict of firms – has shown that different costs among competing firms make coordination on prices difficult. As different costs are likely in most industries, the lack of coordination leads to a demand for uncertain information on the cost structure of rivals, state of demand, and market potential (Tirole, 1988).

One approach to gaining knowledge of rival costs is exchange cost information with one's rivals. To facilitate the exchange of cost information without appearing to collude, many firms choose to participate in trade associations that engage in this, and other forms of, information exchange. Under certain conditions, the exchange of cost information may increase expected profits (Shapiro, 1986). Gal-Or (1986) has found that, whether information sharing is beneficial, depends on the nature of competition. When competing in quantities, firms benefit when competitor costs are available because they are able to better choose strategies. This reduces the likelihood that firms overproduce, making all firms worse off. However, our intuition is that complete and truthful disclosure is questionable. Ziv (1993), therefore, models the incentives for truthful disclosure and finds that firms will disclose misleading information whenever possible. Competitor cost estimates can, therefore, be used to verify trade association data.

Some monopolists may engage in limit pricing (setting prices below monopoly price) to make entry into a market appear unattractive (Milgrom & Roberts, 1982). They show that firms contemplating entry will not be influenced by pre-entry prices if they have complete information. In this setting, therefore, we expect potential entrants to have a demand for competitor cost information. Additional research on pricing by Näykki (1976) models optimal bidding, relying on estimates of a firm's own costs and cost estimates of competitors.

Another line of inquiry has shown that, with limited liability, financial structure in oligopoly can be used strategically to influence the output market in one's favor (Brander & Lewis, 1986). When both firms attempt to use financial structure strategically, both firms will be worse off. Competitors may act strategically in other ways, for example, attempting to mislead firms relying on market information (e.g., developing a reputation for high prices and cutting prices in the future). Through CI,

the estimation of competitors' costs may prevent the firm from being misled by strategic behavior. Accordingly, one would expect firms to monitor competitors' accounting information.

In the field study phase of this research, discussions with CI practitioners suggest that practitioners estimate costs for competitors' products and then create financial statements to compare with published financial statements. Such comparisons provide a means of validating competitor cost assessments. The benefit of acquiring competitors' AI is offset by the cost of gathering and analyzing this information. A firm with a low cost structure, but facing a high degree of competition, would want to verify competitors' costs prior to responding with price cuts. Similarly, a high cost firm may investigate competitors' costs to determine whether competitor actions are short-term (e.g., an attempt to steal market share) or long-term (e.g., a shift in a competitor's costs).[v] Finally, AI may be useful for benchmarking purposes. The above discussion leads to the following hypothesis:

> ***H1a***:   *Competition is positively associated with the use of AI*

Organizational Support and CI Training

Appropriate analysis of competitors' accounting information takes a considerable amount of time to collect information and access to many information sources. The organization needs to provide resources for personnel, databases and, occasionally, the hiring of consultants. Financial accounting information on some competitors is readily available. For other competitors, such as privately-held firms or divisions of large organizations, published financial statements are not available. Even more difficult for the CI practitioner is the estimation of competitor costs. First, relevant information sources must be identified (e.g., suppliers, engineers, customers, patents, reverse engineering, government agencies, on-line databases, etc.). Second data must be gathered and validated. Third, and perhaps most important, the CI practitioner must know how to put the newly acquired accounting data in context. Finally, CI needs to be disseminated to decision-makers throughout the organization. To perform these tasks well, an individual needs resources dedicated to CI and training in the art of CI. Practitioners may now choose from a large number of conferences, tutorials and courses offered by consultants, professional societies and some universities. In the field research phase of the study, CI training also appeared to be a factor in the use of accounting information. From the above discussion, the following hypotheses are set forth:

> ***H1b***:   *Organizational support is positively associated with AI use*

> ***H1c***:   *Greater CI training is associated with greater use of AI*

Determinants of CI Unit Effectiveness

Several interviewees noted that their organization did not have an effective CI system. There were a number of different reasons cited for this, including lack of training, lack of resources, inability to provide compelling evidence, etc. To have an impact on organizational performance, the CI unit needs to gather relevant data, conduct appropriate analyses, and communicate information to decision makers in a timely manner. To the extent this process is done well, reducing uncertainty and aiding managerial decision-making, the CI unit will be seen as effective. CI unit effectiveness is seen as a mediator variable potentially impacting organizational performance. Effectiveness is intended to measure the CI unit's ability to translate raw data into intelligence.

Accounting Information Use

CI practitioners gather both "hard" and "soft" information. Soft information would include, for example, psychological profiling of a competitor's key executives. While some managers may find profiling interesting, there is anecdotal evidence that such information is not highly valued. AI, however, provides actionable intelligence that is more likely to be perceived as effective intelligence. Perhaps because AI is among the limited "hard" types of information, Marren (1998) notes that cost data is the most frequently requested form of CI. Alternatively, managers may be more accustomed to, or more comfortable with, making decisions using quantitative data.

Demski & Feltham (1976) refer to the decision-facilitating role of managerial accounting information systems (MAIS) as one of providing pre-decision information that reduces uncertainty. Internal AI is used to facilitate decisions concerning mergers and acquisitions, strategy development, new product planning, business process reengineering, incentive contracting, and so on. Competitor accounting information, gathered through CI, can be thought of as a parallel MAIS.

An example of how AI can impact CI unit effectiveness draws on work by Fershtman & Judd (1987). They assert that owners may find it desirable to strategically manipulate incentive contracts to affect oligopoly outcomes. However, competitor cost uncertainty forces owners to select strict profit-maximizing objectives. Reducing this uncertainty through the use of competitor AI enables improves the firm's effectiveness by allowing owners to use contracting strategically. Based on the above discussion, the following hypothesis is set forth:

H2a*: AI use is positively associated with effectiveness in CI activities*

Organizational Support

To perform effectively, the CI unit needs a sufficient number of personnel to collect, analyze and disseminate the intelligence to key decision-makers throughout the firm. In addition to the assignment of personnel, the organization must allocate sufficient funding for databases, training, travel and the hiring of consultants to complete their assigned tasks. Field research identified two extremes of

organizational support. In some firms organizational support for CI was minimal. People worked part-time on competitive intelligence and had a limited budget for travel, research and training. Perhaps not surprising, these participants stated that they felt their CI had low value-added. At the other extreme were CI practitioners who prepared extensive studies to support strategic initiatives and aid process improvement. These units had extensive resources, full-time staffs, hired consultants, and implemented internal knowledge management databases. Since accounting information is one of many pieces of information used in a CI system, greater resource commitments (people, information databases, etc.) should provide additional information independent of the resources needed to acquire and analyze AI. The foregoing discussion leads to the following hypothesis:

> ***H2b****:   Greater organizational support is associated with greater CI unit effectiveness*

CI Training

A number of studies have documented that training is positively associated with organizational performance. (Russell *et al.*, 1985; Mathieu *et al.*, 1992; Delaney & Huselid, 1996). In this setting, organizational performance can be viewed as the CI unit's effectiveness. CI training enhances the practitioner's ability to identify sources of data and how to analyze that data. Beyond its impact on AI use, training should have a direct impact on CI unit effectiveness. The field interview phase of this study seemed to suggest an association between CI training and CI unit effectiveness with better-trained CI practitioners being able to discuss the broader implications of their work upon strategy, marketing and sales, and the identification of product and process improvements. Some lesser-trained practitioners seemed to do little more than clip newspaper articles, monitor competitors' web sites collect reports from the firm's sales staff. The value of this information is obviously limited since the information gathered is already public. With this in mind, a relation between CI training and CI unit effectiveness was modeled. This is stated in the following hypothesis:

> ***H2c****:   Higher levels of CI training are associated with higher CI unit effectiveness*

Effect of CI Unit Effectiveness on Organizational Performance

An organization that is effective in CI activities should obtain better and more complete information, enabling the organization to improve its decision-making. The organization should be better prepared for both initiating competitive moves and responding to competitors' actions. The idea here is that firms that are more effective in their CI efforts should become better performing organizations. In a laboratory experiment, Heinen & Hoffjan (2003) documented a positive association between competitor cost analysis and performance.

Specifically, informed subjects were more decisive, using a more expansive production quantity and more aggressive pricing policy. Accordingly, the final hypothesis is:

> **H3:** *Effectiveness in CI activities is positively associated with organizational Performance*

Control Variables

Model development was guided by the idea that CI is a process that can reduce information uncertainty such that decision-makers can make better decisions regarding cost reductions, design and process improvements, new product introductions, product mix choices, and so forth. The interviews and literature suggest additional variables that might be associated with key variables in this study. Since there is no specific interest in testing hypotheses regarding these relationships, these variables are added as controls. Guilding (1999) surveyed 112 New Zealand accountants to assess the adoption and perceived helpfulness of five practices termed competitor-focused accounting (CFA).[vi] Citing prior research that has shown that larger firms have more sophisticated accounting systems (Bruns & Waterhouse, 1975; Merchant, 1981), Guilding predicted size would be positively related to CFA usage and helpfulness (because larger firms are more capable of producing CFA reports). Indeed, size is the one variable that was consistently significant in separate multiple linear regression models predicting the adoption and perceived helpfulness of CFA practices. Furthermore, size likely proxies for more than sophisticated accounting systems. In the proposed model, then, organization size is used an explanatory variable for both organizational support and AI use.

In contrast to Guilding (1999), who surveyed accountants, CI practitioners are the target population for this study. Their ability to gather and use accounting information may be dependent upon their understanding of accounting. That is, practitioners with no knowledge of accounting may not gather accounting information, focusing instead on sales data, employment announcement, etc. Therefore, accounting knowledge is added to the model as a predictor of accounting information use.

As organizations dedicate greater support to CI, CI practitioners will be able to obtain more training. Although one might think of training as a one-time event, larger CI support probably implies larger staffs that would necessarily turn over. Larger support may also imply that the CI unit is involved in more activities (e.g., a broader CI mission) that require more skills. Accordingly, a relation between organizational support and CI training is modeled.

Since small firms probably have fewer resources to dedicate to CI, a relationship is added between organizational size and organizational support. As above, size may also proxy for a number of different things, including a larger bureaucracy, more experienced or educated staffs that understand the need for competitive intelligence, etc. Since this is an exploratory study, we model this relation,

but leave its interpretation to the reader. Future research could investigate this and related factors.

Another path is added from competition to organizational support. The reason for this path is that firms facing a low level of competition probably find little need to commit resources (people, databases, training, etc.) to their CI program. Organizations appear to engage in CI as a means to mitigate the effects of competition. As mentioned above, it has been shown that competition has a negative effect upon organizational performance (Bresnahan, 1989; Schmalensee, 1989; Stigler, 1996). Accordingly, a path was added between competition and organizational performance.

There is a possibility that organizational performance may influence organizational support for competitive intelligence. It is obvious that better-performing firms will have a greater capability to invest more resources into CI. However, it is possible that high-performing organizations feel little or no pressure to invest resources in gathering intelligence on competitors. Therefore, a path was added from organizational performance to organizational support, but no prediction was made as to whether the relation is positive or negative.

To complete the model, covariances were added between: (1) accounting knowledge and competition; (2) accounting knowledge and organization size; and, (3) organization size and competition.

Taken together, the hypotheses and control variables suggest the model shown in Figure 1. The proposed model and the hypotheses are tested using a structural equation model.

Figure 1
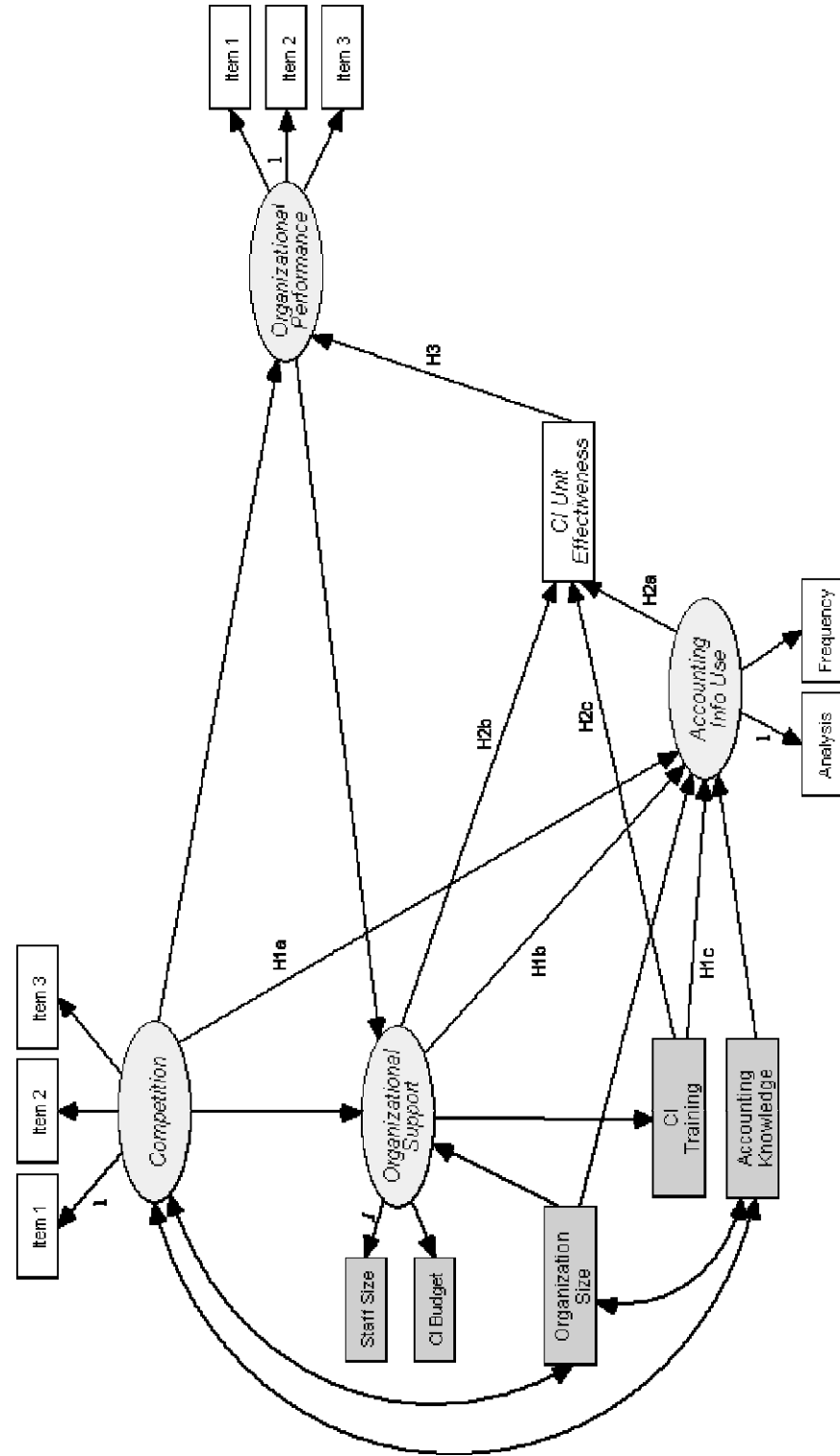
Research Methods

Sample

Data were collected using a survey of members of the Society of Competitive Intelligence Professionals (SCIP). Many SCIP members consider themselves to be CI professionals, a job function being recognized in an increasing number of firms. Members who are not CI professionals are engaged in CI activities in functional areas such as marketing, planning, research and development, and accounting. The sample population consists of U.S. and Canadian members of SCIP.[vii] Academics, students, vendors and consultants were excluded from the study.

The common factor among this diverse group of individuals is their interest, knowledge and skill in obtaining information about competitors. This makes SCIP members an appropriate group—possibly the most suitable group—of individuals to have as participants in this study.[viii] It is plausible that SCIP members understand the importance of the firm's relative cost position, have the skills necessary to obtain information needed to estimate competitors' cost structures and, when necessary, have the ability to interact with their firm's financial staff. Accountants are not targeted as the primary respondents for the survey because: (1) accountants may not be involved in the CI effort; (2) their firms may not use CI; and, (3) accountants may not have the skills to obtain information about competitors.

Available funding allowed for a sample size of approximately 1,000 members who were selected using a stratified random sampling procedure. The strata were the SCIP industry classifications with the total sample being allocated proportional to stratum size. The survey instrument was designed and administered using procedures similar to those recommended by Dillman (1978). 340 useable surveys were obtained providing an effective response rate of 35.0%. Although lower than desired, a 35% response rate is not unusual in organizational research especially since similar survey studies of CI practitioners had response rates of 12% (Cartwright, 1993) and 50% (Wee, 1992). Table 2 indicates the number of respondents by industry and there is also variation in industry representation. Respondents were from 40 states and 5 Canadian provinces.

To assess the potential for non-response bias, early and late respondents were compared on all constructs since late respondents are believed to proxy for non-respondents (Oppenheim, 1966; Fowler, 1993). Analysis of variance found no statistically significant differences between early and late survey respondents for all constructs and demographic data. Thus there is no evidence of non-response bias in the sample. Details relating to the measures employed in this study are given in Appendix A and Table A-1.

Table 2
Survey Sample and Survey Returns Sizes
by SCIP Industry Classification

SCIP Industry Classification	Sample	Returns
Banking/Financial	44	17
Chemicals/Pharmaceuticals	139	51
Communications/Telecommunications	142	55
Computers/Computer Services	79	22
Defense/Aerospace	60	26
Food Manufacturing	22	3
Health Care/Hospital	57	19
Industrial Products	53	15
Information	50	11
Insurance	54	20
Petroleum/Energy	30	9
Public Utilities	60	20
Real Estate	4	2
Textiles/Apparel	10	4
Transportation/Automotive	39	13
Other	170	53
Total (excluding consultants & academics)	**1,013**	**340**

Results

Descriptive statistics and correlations for the measures are shown in Tables 3 and 4. Table 5 indicates that the median organization size is 4,000 employees, with a range from 2 to 340,000 employees. Annual funding for CI ranges from virtually zero to $10 million, the median level of funding being $200,000. The number of full-time employees assigned to CI activities also varies widely, from zero to 150 employees with a median of 2 employees. Most CI programs appear to have been recently started, the median age of a formal CI program being 24 months. Only 15% of organizations had CI programs for more than 5 years and 31% reported less than 1 year. There is variation in the reporting relation of the respondents with 46% in sales or marketing, 4% in finance or accounting, 31% in strategy or planning units, 5% reporting into senior management, and 14% in other areas of the firm.

Respondents are well educated with 57% of respondents holding a Masters degree, 10% with education beyond a Masters degree and 28% having a Bachelors degree. CI work is a part-time activity for most of the respondents. The median percentage of time spent on CI is 50%, although 26.5% of respondents are engaged full-time in CI work. The median number of years experience in CI is 3.0 years while

the median number of years respondents have been involved in their company's CI program is 2.0 years. 68% of respondents have experience in more than one functional area. 9% of respondents report no formal training in CI while 61% have attended both seminars and CI conferences. The median number of hours of accounting coursework is 6; presumably this is equivalent to two MBA-level accounting courses.

Table 3
Panel A: Descriptive Statistics

Item	Description	Mean	Std. Dev.	Valid N	Missing N
Competition					
1.	Market activities	5.90	1.29	335	5
2.	Affect in more areas	5.55	1.38	333	7
3.	Cut-throat competition	5.03	1.54	335	5
Accounting Information Use					
1.	Frequency of monitoring	4.18	1.37	334	6
2.	Extent of analysis	4.26	1.47	312	28
Organizational Performance					
1.	Sales growth	4.76	1.33	327	13
2.	Overall performance	4.94	1.30	325	15
3.	Financial returns	4.74	1.42	293	47
CI Unit Effectiveness					
1.	Effectiveness of CI activities	4.14	1.41	328	12

Table 4
Panel B: Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13
Competition													
1 Market activities	1.000												
2 More areas	.678**	1.000											
3 Cut-throat	.570**	.593**	1.000										
Organizational Performance													
4 Sales growth	-.066	-.065	.007	1.000									
5 Overall perform.	-.148*	-.088	-.017	.730**	1.000								
6 Financial returns	-.081	-.136*	-.054	.565**	.660**	1.000							
Organizational Support													
7 Staff Size	.120*	.138*	.184**	-.047	-.050	-.041	1.000						
8 CI budget	.188**	.164**	.159**	-.084	-.112	-.149*	.626**	1.000					
Organizational Size													
9 Employees (FTE)	.160**	.061	.079	-.098	-.122*	-.086	.274**	.373**	1.000				
CI Training													
10 Seminars & conferences	.008	-.018	-.008	-.007	.004	.052	.197**	.171**	.157**	1.000			
Accounting Knowledge													
11 Credit hrs. of accounting	.027	.047	-.055	.024	.072	.070	.118*	.088	.064	-.026	1.000		
Accounting Information Use													
12 Extent of analysis	.081	.142*	.095	-.069	-.071	-.022	.166**	.201**	.076*	.039	.144*	1.000	
13 Monitoring freq.	.162**	.179**	.186**	-.036	-.109	-.036	.180**	.148*	.167**	.063	.074	.610*	1.000
CI Unit Effectiveness													
14 Effectiveness	.214**	.261**	.280**	.160**	.212**	.181**	.335**	.267**	.074	.135*	.004	.272*	.188**

Note.

* $p < .05$, 2-tailed

** $p < .01$, 2-tailed.

Table 5
Descriptive Statistics of Survey Respondents

Panel A: Area into which CI Unit Reports

Functional Area	*n*	Percentage
Sales or Marketing	148	45.5
Finance or Accounting	13	4.0
Planning	29	8.9
Corporate Strategy	71	21.8
Senior Management	17	5.2
Engineering	5	1.5
Operations	7	2.2
Other	35	10.8

Note. 15 participants did not provide a reporting area.

Panel B: Organizational & Personal Information

	Mean	Std. Dev.	25th Percentile	Median	75th Percentile
Age of CI unit (months)	41.3	51.5	12	24	48
CI budget	$527,548	$1,143,412	$76,250	$200,000	$500,000
Organizational size (# employees)	17,660	38,796	700	4,000	13,250
CI Staff size (full-time employees for CI activities)	4.1	12.7	1	2	4
Years experience in CI field	5.5	6.4	2	3	7
Accounting Knowledge (hours of accounting coursework)	9.3	14.3	0	6	15
Breadth of Experience (functional areas previously worked)	2.2	1.1	1	2	3
CI Training (number of seminars and conferences attended)	6.7	7.2	2	0	8
Educational Level	-	-	Bachelors	Masters	Masters

Structural Equation Model

A structural equation model (SEM) takes a hypothesis testing approach to multivariate analysis by assessing the fit of a hypothesized model with sample data (Byrne, 1994). Bringing together features of psychometric and econometric analyses, structural equation modeling combines the characteristics of factor analysis, multiple regression and path analysis, providing both measurement and structural models (Dillon & Goldstein, 1984; Breckler, 1990). Latent variables are unobserved variables for which observed variables act as indicators of the latent variables. These latent variables are theoretical constructs that are common factors that cause variation in the observed variables. Competition, organizational support, AI use and organizational performance are latent constructs, each of which were measured through two or more observed variables. The use of latent variables allows a better assessment of both direct and indirect effects between constructs. The remaining constructs (CI training, accounting knowledge, organization size and CI unit effectiveness) entered the model as manifest (observed) variables.

Fit Assessment and Model Evaluation

Fit indexes assess the degree of correspondence between the hypothesized model and the data (Hu & Bentler, 1995). Model fit in this study is assessed using the root mean square error of approximation (RMSEA) and the comparative fit index (CFI). The RMSEA is a measure of absolute fit with values below .05 indicating a close fit of the model (Browne & Cudeck, 1993).[ix] Bentler's (1990) CFI is a measure of incremental fit whose value ranges from 0 to 1 with 1 indicating a perfect fit. Models with a fit index greater than .90 are generally regarded as acceptable (Bentler & Bonett, 1980).

Tests of the hypotheses are made by examining the path coefficients in the structural model. For a unique solution, the sample size must be much larger than the number of parameters to be estimated. The available sample size is adequate for the hypothesized model that estimates 41 parameters.[x] Missing data was imputed using conditional means (Little & Rubin, 1987) providing a total of 295 observations.[xi] The SEM was estimated using a maximum likelihood fitting function. Like most multivariate data analysis techniques, SEM normally requires multivariate normality. Univariate tests of skew and kurtosis found 10 of the 14 observed variables to be non-normal, as defined by critical ratios above 1.96 (i.e., $p < .05$, 2-tailed).[xii] Mardia's (1970) coefficient for multivariate kurtosis was used to assess multivariate normality, and this indicated that the data is not multivariate normal.[xiii] Non-normality has the effect of rendering significance tests invalid because standard errors are inflated (Bollen, 1989). Bootstrapping, however, generates an empirical distribution that enables one to reliably estimate path coefficients and squared multiple correlations despite the presence of non-normal sample data (Efron & Tibshirani, 1993). Bootstrapping with replacement (1,000 samples) indicated no significant bias.

Confirmatory factor analysis shows that the standardized loadings of survey items onto latent variables were statistically significant at the $p < .01$ level (2-tailed) for

all items (see Table 6). Factor loadings were all larger than .60 which suggests that the individual survey items are measuring common latent constructs. The confirmatory factor analysis model fits the data quite well as can be seen from the CFI of .99. Examining the correlations among the latent variables assesses discriminant validity. A necessary, but insufficient condition of discriminant validity is that none of the correlations among the constructs be 1.0. None of the confidence intervals of the correlations among latent variables includes the value of 1.0, suggesting that this survey instrument has discriminant validity. Model fit is quite good with CFI = .97 and RMSEA = .05.[xiv] Since the path from organizational performance to organizational support makes the model non-recursive, the stability of the regression coefficients was assessed and found to be satisfactory.[xv]

Table 6
Model Estimates

Panel A: Standardized Loading Coefficients for the Measurement Model: Confirmatory Factor Analysis

Item	Construct			
	Competition	*Organizational Support*	*Accounting Information Use*	*Organizational Performance*
1. Market activities	.81			
2. Affect in more areas	.84			
3. Cut-throat competition	.71			
1. Staff size		.74		
2. CI budget		.85		
1.Frequency of monitoring			.82	
2. Extent of analysis			.74	
1. Sales growth				.79
2. Overall performance				.93
3. Financial returns				.71

Note. χ^2 = 39.20, *p* = .10. CFI = .99. RMSEA = .03. Critical ratios all exceed *p* < .001. *N* = 295.

Panel B: Standardized Path Estimates for the Structural Model.

	Path to:				
	Organizational Support	*CI Training*	*Accounting Info Use*	*CI Unit Effectiveness*	*Organizational Performance*
Path From: R²	.19	.05	.06	.18	.11
Competition	.20***		.16**		-.24***
Organizational Support		.23***	.23**	.34***	
Organizational Size	.37***		.00		
CI Training			.01	.06	
Accounting Knowledge			.12*		
AI Use				.22***	
CI Unit Effectiveness					.35***
Organizational Performance	-.17**				

Note. Maximum likelihood estimation of the coefficients of the structural model.

* $p < .10$
** $p < .05$
*** $p < .01$

Model Results: Tests of Hypotheses

Determinants of Accounting Information Use

Table 6 (Panel B) provides estimates for the structural equation model and path coefficients are superimposed on the path diagram in Figure 2 for easier evaluation of the model. Hypothesis 1a predicted that competition is positively associated with AI use. The path coefficient between competition and AI use in the cost information model is significant, providing support for hypothesis 1a. H1b predicted that greater organizational support would be associated with greater AI use. This hypothesis is supported with a significant path coefficient in the model. No support is provided for H1c as the path coefficient between CI training and AI use is non-significant.

Figure 2
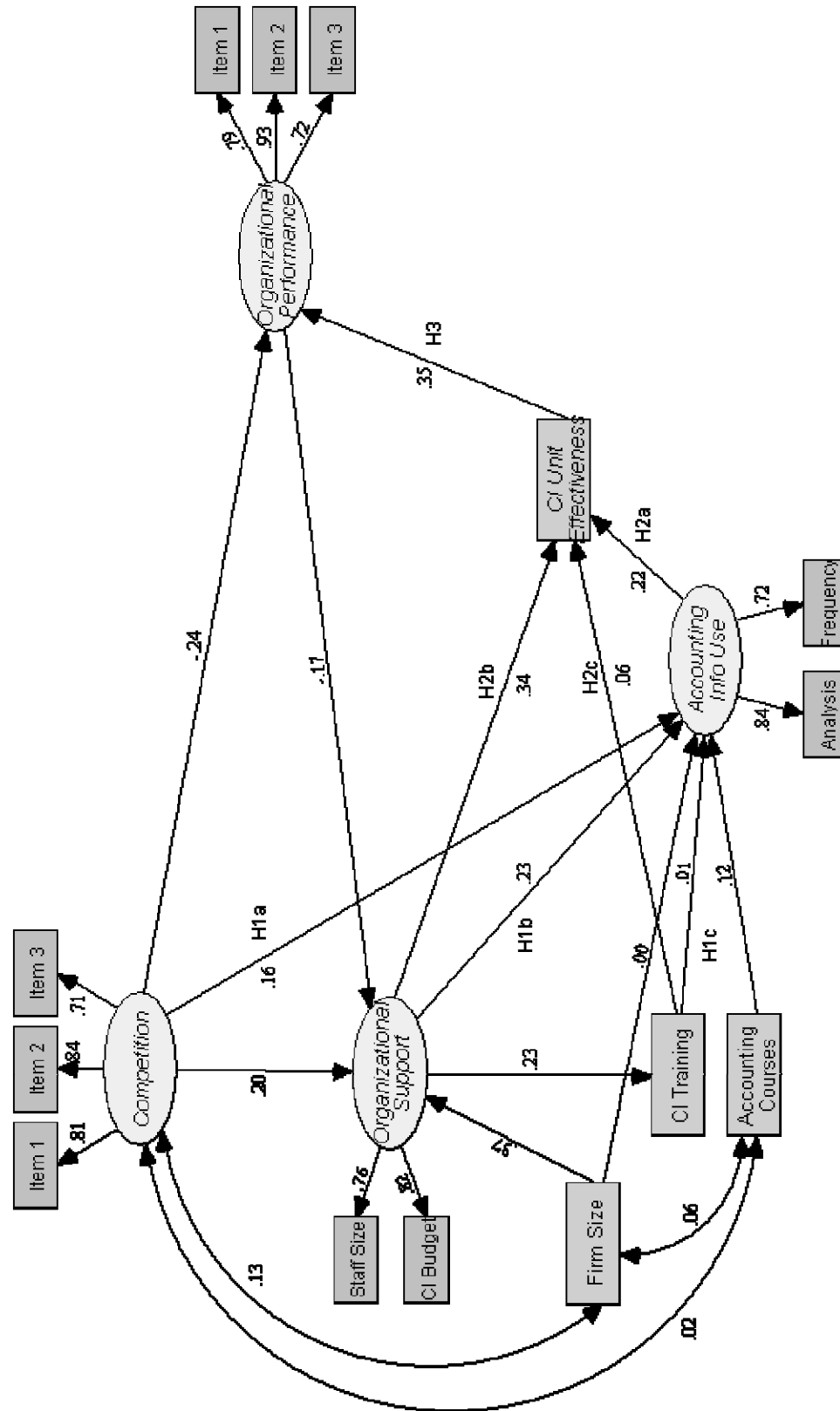
Determinants of CI Unit Effectiveness

H2a states that accounting information use is positively associated with effectiveness in CI activities. This hypothesis is supported, as the path coefficient is significantly positive. Hypothesis 2b predicts that increasing organizational support is associated with higher CI unit effectiveness. A significant positive path coefficient from organizational support to CI unit effectiveness provides evidence that organizational support is essential for CI unit effectiveness. Surprisingly, CI training was not associated with CI unit effectiveness as the path coefficient between these two constructs is not significant. Thus, H2c is not supported.

CI Unit Effectiveness on Organizational Performance

Finally, effectiveness in CI activities is positively associated with organizational performance as the path coefficient between these two variables is significantly positive, providing support for hypothesis 3.

The path from competition to organizational performance is significantly negative.[xvi] Consistent with economic theory, this suggests that increased competition is associated with decreased organizational performance. The path from competition to organizational support is significantly positive suggesting that firms facing greater competition invest greater resources in CI. The coefficients for the path from organizational performance to organizational support are significantly negative. This suggests that firms performing worse commit greater resources to CI in an attempt to deal with competition. Organization size was positively associated with organizational support, but was not related to accounting information use.

The path coefficient from accounting knowledge to accounting information use was significant in the model. That is, a greater number of courses in accounting leads to greater use of AI. Finally, organizational support is positively associated with CI training. Larger CI staffs and spending lead to more CI training, but it appears these funds are not well spent since, as mentioned above, there is no relation to CI unit effectives or AI use. Of the 3 covariances in the model, only one is significant; a positive covariance between firm size and competition.[xvii]

Discussion

This study has examined the use of competitors' cost and financial information in competitive intelligence activities. Field and survey research confirmed the use and value of competitors' accounting information in CI activities. When comparing AI use to 12 other information sources, survey respondents ranked both the analysis and monitoring of financial information 4th. Financial information is a CI information source that is referred to frequently and is considered to be reliable and relatively unbiased. It appears that financial information monitoring and, to some extent analysis, is a 'constant' among CI practitioners. For publicly traded firms, financial accounting information is readily available (i.e., not very costly or difficult to obtain), so one might expect it to be used frequently. CI practitioners appear to recognize that many information sources (e.g., trade articles, company web sites,

customers) are put forth, or strongly influenced by, their competitors. For example, one individual interviewed by telephone indicated that his firm deliberately disseminates disinformation intended to confuse competitors.[xviii] Consequently, CI practitioners do not consider these sources to be very accurate or reliable.

Estimating competitor cost information, on the other hand, requires more extensive knowledge of the competitors' processes, product mix and volumes. As such, CI practitioners must go to great lengths (i.e., incur significant costs) to make even basic estimates of competitors' costs. Here, analysis of cost information ranked 5th while the frequency of monitoring of cost information ranked 10th (i.e., relatively infrequent). The sources whose frequency of monitoring was lower than that of cost information also ranked low on the level of analysis. Together, this suggests that cost information is important, if infrequently monitored.[xix]

This paper presented a model of how accounting information contributes to the CI process. In a competitive business environment, organizations need to seize opportunities for gaining competitive advantage. To offset the adverse effects of competition, many firms implement CI programs to reduce uncertainty and provide better information to decision-makers. The evidence suggests that firms facing greater competition devote greater organizational support for CI to search for new ways of creating and sustaining a competitive advantage. Organizations performing poorly also dedicate greater resources to their firm's CI program. At first this seems surprising, but it appears that firms performing well do not appear to have as much concern for competitors as they do not feel the effects of competitors. Furthermore, larger organizations provide greater organizational support for CI. In turn, organizational support has an effect on CI training, AI use and CI unit effectiveness.

Competition influences AI use in CI activities. It appears that the benefits to competitive accounting assessment increase with competition as firms can use this information to compete more effectively. A surprising result is the lack of an association between CI training and AI use. However, it is possible that the construct (CI training) is inadequately operationalized in this exploratory study. Number of seminars and conferences attended is a relatively crude proxy that may not be capturing the skill component that training ultimately reflects. Future research would no doubt benefit from a refined measure of this construct.

Accounting information use is positively associated with the effectiveness of CI unit activities. Accounting information (which is quantifiable and reliable) appears to provide better actionable intelligence than other information sources used by individuals engaged in CI. While other factors also influence effectiveness in CI activities, other information sources are not substitutes for accounting information. Although not focused on CI, this result is consistent with Jones (1988), who attributes much of Caterpillar's success against its rivals to his firm's competitive costs estimation techniques.

The evidence suggests that accounting knowledge fosters greater AI use. This suggests that management accountants within the firm need to seek out individuals engaged in CI and contribute to the organization's CI effort. Without such an effort,

valuable insights into competitors may go unnoticed. The findings also suggest the need for cross-functional CI teams in which management accountants are likely to be valuable members of such cross-functional teams. Indeed, Jones (1988), argues that management accountants play a key role on cross-functional teams, providing data and analyzing competitor costs. Accounting policy makers also need to recognize that, while disclosure may benefit investors and creditors, competitors are actively engaged in examining publicly available information for competitive advantage. Management accountants often see themselves as providing information on *internal* business processes and products. Managers need similar information on competitors, and relating this to the firm's own data, is an important role for management accountants.

Limitations and Future Directions

There are limitations to this study. First, the participants may not be representative of all those who practice CI. As members of a professional society, these individuals may be different than those who are not members. One can imagine that individuals who join such a society may be more dedicated to the profession, better educated and have more professional responsibility (i.e., at a higher level) than those who are not members. Second, this study is limited to U.S. and Canadian members only and provides no insight into how culture, market structures or different forms of government might affect the theoretical model. Third, the proposed model is simple and may ignore factors that may be important. Fourth, although the validity of most of the measures appears high, the study relies exclusively on the self-reported measures of respondents. A related issue is that some of the scales are single-item measures that were developed for this study. Finally, many of the units studied are relatively new. It is possible that the use of accounting information could change as units mature.

There are a number of possible extensions for this line of research. First, this study could include members of SCIP from outside the U.S. and Canada. Second, the use of CI may be tied to other management innovations, such as total quality management, just-in-time, activity based costing, and so forth. Studying the implementation of such programs together with the use of CI may provide useful insights. Third, a laboratory experiment examining the value of accounting information among many other items of intelligence would help us understand whether reluctance to use accounting information is due to a lack of relevance, education or cost. Fourth, a longitudinal study is likely to yield useful insights. Fifth, future research may benefit from research focused on particular industries and how the demand for accounting information compares to the findings in this study. Several CI practitioners have indicated that industry types may affect the pattern of intelligence gathering and analysis, including AI use. Finally, future research might examine the importance of accounting for competitive assessment as many firms may be engaged in such activities without referring to their work as competitive intelligence.

Appendix A: Measures

The survey instrument for this study used both objective and subjective measures. Existing scales were adopted wherever possible. As a pre-test of the survey instrument, most field research participants completed a preliminary version of the survey instrument. In addition, the survey instrument was distributed to other researchers for their comments on the constructs, item wording, aesthetics and instructions. Reliability for all multi-item measures is satisfactory, ranging from 0.66 to 0.85. Construct validity was established with exploratory factor analysis.

Competition was measured using a 3-item, 7-point Likert-type scale taken from prior research (Miller, 1987; Wee, 1992). Scale items were anchored by 1 = *Strongly Disagree* and 7 = *Strongly Agree*. Participants were asked about their perceptions of key competitors' market activities, impact of key competitors' actions on their firm, and the intensity of industry competition. High values of the items indicate a high degree of competition. Perceived measures are used because publicly available data is not available for most firms in this study (many of divisions of larger organizations, are foreign subsidiaries or are privately held). Reliability assessed using Cronbach's (1951) alpha was sufficient (α = .81). Exploratory and confirmatory factor analysis were used to establish construct validity by comparing items from this measure with all other multi-item measures (Kerlinger, 1986; Fowler, 1993). Consistent with theory, the items for competition load heavily on one factor while no items from other measures load heavily on this factor. See Table A-1. Additional validation was obtained using a small sample of firms where public data was available. For these firms, the Herfindahl index (HHI) was computed.[xx] A significant positive correlation was obtained.[xxi]

In this study, accounting information use is considered in a traditional sense of viewing accounting information as being of a financial nature. There are two reasons to exclude non-financial information. First is the primacy of financial information in competitor assessment, particularly with respect to competitive cost assessments. Second is the common belief—exemplified in the CI literature—that accounting information is of a financial nature.[xxii] Further, this view is consistent with prior research on CFA (Guilding, 1999). Respondents rated their monitoring and analysis of financial information (e.g., from annual reports) and competitor cost information.[xxiii,xxiv] A 7-point Likert-type scale was used for each of the four measures (monitoring and extent of analysis of both financial information and competitor cost information). The two monitoring frequency measures were anchored by 1 = '*Infrequent (special request)*' and 7 = '*Continual (high frequency)*'. The two extent of analysis measures were anchored by 1 = *No Analysis* and 7 = *Extensive Analysis*. Higher values of the items indicate higher levels of accounting information use. The two monitoring measures were summed together as were the two items for the extent of analysis.[xxv] The resulting two-item measure has acceptable reliability as assessed using Cronbach's alpha (α = .76). Construct validity appears to be confirmed as a

factor analysis of all multi-item measures indicates that the two items load heavily on one factor while no other items load heavily on this factor. See Table A-1.

Respondents provided self-reported measures of <u>organizational performance</u>, assessed as sales growth, overall performance and financial returns relative to competitors (Wee, 1992). A 7-point Likert type scale was anchored by 1 = *Much Worse than the Competition* and 7 = *Much Better than the Competition*.[xxvi] For the 3-item Likert-type measures there are 289 complete cases. Most of the missing values are associated with item 3 (financial returns). Reliability for this measure was satisfactory (Cronbach's α .85). Construct validity is established by factor analysis that shows the items for organizational performance loading heavily on a single factor. See Table A-1.

<u>CI unit effectiveness</u> was assessed using a single item measure. Respondents were asked to rate the effectiveness of their organization's CI activities using a 7-point scale anchored by 1 = *Ineffective* and 7 = *Very Effective*. This study is exploratory and future research would benefit through the development and use of a multi-item measure.

Respondents indicated the level of <u>organizational support</u> committed by providing measures of the annual expenditures for CI (in dollars for salaries, travel, databases, consultants, etc.), and the number of full-time personnel assigned to CI activities. Because both items for this construct were non-normal, natural log transformations were made and the transformed variables were used in the model. Reliability for this measure is adequate with Cronbach's α = .82 (DeVellis, 1991).

To assess <u>accounting knowledge</u> and <u>CI training</u>, respondents provided self-reported measures on formal training in accounting and competitive intelligence. Accounting knowledge was assessed by asking participants how many credit hours of accounting coursework they had taken. Training in competitive intelligence was measured by asking participants how many seminars and conferences they had attended on CI. <u>Organization size</u> is measured as the number of employees. These three measures were entered into the model as observable variables. Natural log transformations of CI training and organization size were used in the model because distributions of the original data were non-normal.

Discriminant validity was assessed by restricting factor intercorrelations pairwise to unity and comparing the overall fit to an unrestricted structural equations model. Significantly worse fit for the restricted models provides evidence of discriminant validity.

Table A-1
Exploratory Factor Analysis to Assess Construct Validity:
Multiple Item Latent Measures

Rotated Factor Loadings

Item	Communality	1	2	3	4
Competition					
1. Market activities	0.76	.87			
2. Affect in more areas	0.78	.87			
3. Cut-throat competition	0.70	.82			
Organizational Performance					
1. Sales growth	0.77		.87		
2. Overall performance	0.84		.91		
3. Financial returns	0.71		.84		
Organizational Support					
1. Annual CI expenditures	0.81			.88	
2. Full-time CI personnel	0.82			.90	
Accounting Information Use					
1. Frequency of monitoring	0.80				.89
2. Extent of analysis	0.81				.89

Note: Principal component extraction: Eigenvalues greater than 1. Varimax rotation.
Missing values replaced with variable mean.
For clarity, factor loadings < .15 are suppressed.
KMO measure of sampling adequacy: 0.65
Bartlett's test of sphericity: $\chi^2 = 1,078.1$, $df = 45$ ($p < .001$)
Percentage of total variance explained by 4 factors: 77.9%

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Endnotes

[i] Illegal practices, unethical practices and benchmarking are not CI practices and are not prevalent (Rehbein *et al*., 1992; Hallaq & Steinhorst, 1994). The distinction between these activities is that benchmarking involves assessing best practices, (which includes non-competing firms) whereas CI involves assessing only competitors.

[ii] Although this appears to be a contradiction, it appears that most organizations do not understand how to gather information necessary for competitor cost assessment. Anecdotal evidence gathered at an annual conference of CI practitioners seems to suggest strong interest for the use of accounting information. From personal discussions with CI practitioners it was learned that prior use of AI appeared to be relatively low. Hence, it is valued but not used.

[iii] Twenty-nine individuals were contacted, of which 25 agreed to participate (25/29 = 86%). Scheduling difficulties caused the cancellation of 2 interviews.

[iv] Several individuals, because of time constraints after interviews, were not asked to complete the survey.

[v] Organizations following a differentiation strategy may use competitive intelligence differently than organizations following a low cost strategy. The firm's strategy may be captured by (or confounded with) competition since firms with differentiated products to not face direct competition.

[vi] These practices are: (1) competitor cost assessment; (2) competitive position monitoring; (3) competitor appraisal based on published financial statements; (4) strategic costing; and, (5) strategic pricing.

[vii] The study was limited to this group to prevent language problems that might occur with the survey instrument.

[viii] Guilding's (1999) target population was chief accountants of New Zealand's 230 largest firms. Two potential issues arise with the use of such a target population: (1) a Chief Accountant may not be involved in the firm's competitor-focused accounting efforts and, (2) responses may differ between adopters and non-adopters of CFA practices.

[ix] The χ^2 goodness-of-fit test, often a measure of absolute fit, is not used because there is an assumption of no kurtosis that is violated by the sample data (Bollen, 1989).

[x] It is commonly accepted that the sample size should be at least 5 cases per parameter estimated.

[xi] Listwise there were 194 observations. Most of the missing values (71) were associated with annual expenditures for CI and organization size. 45 respondents had too many items missing to reasonably justify imputing values and these cases were dropped from the data set for the purpose of estimating the structural equation model (e.g., all items on one construct). Imputing data for these cases and re-estimating the model provides qualitatively similar results.

[xii] The critical ratio is the sample estimate divided by its standard error and, assuming normality in large samples, is an observation on a standard normally distributed random variable (Arbuckle, 1997).

[xiii] To assess the impact of outliers, 28 cases with a large Mahalanobis distance ($d^2 > 21$) were dropped. The models were re-estimated and found to be qualitatively similar to the first model estimates.

[xiv] Model fit can be improved by examining modification indices. Analogous to stepwise regression, the indices provide a measure of the decrease in χ^2 if a single parameter constraint is relaxed (Bollen, 1989; Joreskog & Sorbom, 1996). Model fit can be improved by adding two paths: (1) from competition to CI unit effectiveness and, (2) from firm size to organizational performance ($\chi^2 = 79.91$, $p = .06$). However, a parameter should be freed

only when it is sensible to do so (Joreskog & Sorbom, 1996). Since the results are qualitatively unchanged, and there is little theoretical basis for the addition of these two paths, the original model is retained.

[xv] A stability index between –1 and +1 indicates a stable system (Arbuckle, 1997). The stability index for the model is 0.094.

[xvi] Removing significant control variable paths results in significantly worse fit and biased coefficients.

[xvii] An alternative model that included a latent variable for other "hard" data (sales & marketing and trend data) was evaluated. The path coefficient from that latent variable to CI unit effectiveness was significantly positive, increasing the R^2 of the CI unit effectiveness. Since the results were qualitatively unchanged, this model was abandoned in favor of the more parsimonious model. (A regression model evaluated the effect of all information sources on CI unit effectiveness. The only significant constructs were the AI use and sales/trend sources.)

[xviii] Disinformation can be disseminated in many ways. For example, false and misleading information may be placed on company web sites. A firm can file notices with state agencies to mislead competitors that monitor public filings. Product and equipment suppliers may be asked to make bids for phantom programs. Finally, false announcements are sometimes provided to trade journals, professional societies and news sources.

[xix] The difference in the use of competitors' cost and financial information was observed in the field research phase of the study and was confirmed in the analysis of the survey responses. In terms of monitoring frequency and extent of analysis, CI practitioners monitor competitors' financial statements more frequently than competitor costs (paired-sample mean difference = 0.74, p < .001) and analyze financial information more extensively than cost information (difference = 0.37, p < .01).

[xx] HHI is a commonly used, although imperfect, measure of competition. It is imperfect because computation using publicly available sources (such as Compustat) excludes private firms, most foreign firms, introduces errors from large multi-divisional firms, and ignores regional competition. For example, the newspaper industry would appear to be competitive with many firms in that SIC code. However, most cities have only one newspaper and the publisher is a monopoly. Newspapers would consider competitors to be other media outlets and some national newspapers. Another example would be the airline industry which appears to be highly competitive. However, airlines dominating a hub appear to behave as monopolists.

[xxi] The observed correlation, though significant, is not very large. This is not surprising given that many of the firms surveyed are divisions of large, multi-divisional firms where the respondent's reported competition is at the business-unit level. Competition as measured by HHI is being assessed at the firm level.

[xxii] In the practitioner CI literature, use of management accounting varies from no analysis (Gilad & Gilad, 1988; Roukis *et al*., 1990; Barndt, 1994) to detailed estimations of competitor costs (Sammon *et al*., 1984; Fuld, 1995). Most books and articles suggest an approach between these two extremes, the simple analysis of published financial reports (Fuld, 1985; Vella & McGonagle, 1988). This approach focuses on competitor performance, how they sustain competitive attacks, and how they choose to compete.

[xxiii] Prescott and Smith (1989) distinguished between frequency of monitoring information sources and the extent of analysis of information collected. Respondents rated their use of 12 other information sources: general industry trends, marketing and sales, technology development, public affairs, human resources, general administrative structure, supplier and procurement practices, organizational goals and assumptions, customers, acquisition and divestiture programs, operations, and channels of distribution.

[xxiv] Although annual reports (listed as an example source of financial information) contain significant amounts of non-accounting information, most of the information contained in annual reports is available to CI analysts through other sources or is common knowledge to firms in the industry. Conversations with CI analysts stated that gathering financial information was the main purpose for reviewing annual reports.

[xxv] The cost and financial measures were summed because these are formative measures (e.g., an analyst could monitor financial information but not monitor cost information).

[xxvi] Respondents were also asked to provide quantitative measures of performance. However, there were only 71 complete cases. Given the length of the survey instrument and the placement of these items near the end, it is likely that most respondents were simply not motivated to seek out the information. Some stated that financial performance information was confidential. Obtaining the missing information from other sources (e.g., Compustat) is not possible because many of these organizations are private firms or divisions of large corporations. The available quantitative measures were used as a second means of establishing construct validity for the perceptual measures of organizational performance.

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Key Terms
Competitive Intelligence, Competition, Accounting Information Use, Benchmarking

Competitive Intelligence as a Driver of Co-Evolution within an Organization Population

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Abstract

  This paper discusses the implications that competitive intelligence operations may have on co-evolution within a competitive organization population. The objectives and results of competitive intelligence are analyzed at the level of an individual organization. The population level consequences are conceptualized with the Red Queen effect and emergence. The study has been conducted as a conceptual analysis.

Introduction

  The phenomenon under study is the co-evolution of organizations and the effects that competitive intelligence operations have on it. Through competitive intelligence firms aim at acquiring relevant and accurate knowledge of the actions and plans of competitors on which managers can base their decisions. Firms aim at surviving and succeeding in a competitive environment. (Peyrot *et al*, 2002) claim that "the greater the perceived competitiveness of an organization's environment, the higher the level of CI use."

  Consequences of competitive intelligence have been discussed widely in the context of a single organization practicing it (Ifan *et al*, 2004; Vedder & Guynes, 2002; Simpson, 1997; Miller, 1993). However, there is little consideration on how CI activities of the micro level affect the organization population on macro level. As an organization strives to know more about the actions and plans of its competitors, and act on that knowledge, the effects of an action may cascade through the population of organizations. The cascading takes place if the development of the organizations is interdependent. This kind of interdependent development is called co-evolution.

  Reibstein and Wittik (2005) discuss corporate strategies, where companies react to acts of competitors and imitate them. They claim that this behavior is not dependent on the rationality of competitor's actions. Furthermore, managers may follow the actions of others in fear of making mistakes if not reacting, and that circle may lead to unexpected consequences on the macro level. Similarly managers may be blind on the consequences of their CI activities on the macro level. In this paper we suggest that competitive intelligence is an important driver of co-evolution of organizations.

Objective and Research Questions

Popper (1963) stated that the main task of the theoretical social sciences is to trace the unintended social repercussions of intentional human actions, i.e., to help us to understand the system level dynamics that arise from individual actions. Popper concluded that theoretical social sciences do not provide us with predictive tools, but they define the possible consequences of certain actions. This paper provides a tentative explanation for the dynamics between the development of competitive intelligence on the micro level and the development of an organization population on the macro level.

The objective of this study is to examine the consequences that CI operations have on the development of a competitive organization population. Research questions are defined as follows.

1. What are the objectives of CI operations?
2. What are the results of CI operations?
3. What is the role of co-evolution in the development of an organization population?
4. What are the consequences of the organization level CI operations on the population level development?

Research questions are tackled through conceptual analysis on topics of competitive intelligence and dynamics of competitive organization populations. This research builds on the conceptual work that the authors have conducted previously on business ecosystems and on the study of them as complex evolving systems. Thus, some ideas presented here have been discussed earlier in Peltoniemi (2004), Peltoniemi and Vuori (2004), and in Vuori (2005) and Peltoniemi (2005a and 2005b).

This study concentrates on competitive dynamics in organization populations excluding collaboration. The interest is directed towards the dynamics that emerge from active CI operations within firms competing in the same market. Additionally, depictions of practical and technical CI methods are not included in this study. The study is descriptive in nature although such description may also give rise to normative ideas.

The Objectives and Results of Competitive Intelligence

There are many definitions for CI. One states that "[C]competitive Intelligence (CI) aims to monitor a firm's external environment for information relevant to its decision-making process" (Chen, Chau & Zeng, 2002). Hamblen (2000) defines CI as "the process of monitoring the competitive environment". A more extensive definition is provided by the Society of Competitive Intelligence Professionals, who describe CI as "the process of ethically collecting, analyzing and disseminating accurate, relevant, specific, timely, foresighted and actionable intelligence regarding the implications of the business environment, competitors and the organization itself" (Chen, *et al*, 2002).

Sutton (cited in Chen, *et al,* 2002) separates CI from general business information and explains the difference to be due to the strategic importance of information gathered by CI. This difference is clarified by Groom and David (2001), who claim that competitive intelligence is information that is analyzed and provides implications for strategic planning and decision-making.

Attaway's (1999) definition ties CI to strategy and emphasizes its role as an enabler of successful business. "Competitive intelligence is a process of gathering actionable information about competitors and applying it to short and long-term strategic planning." Through CI, organizations can find out what the competition is up to and stay one step ahead. CI units assess and track competitors; they support strategic decision-making; planning, and implementation; and they provide early warnings of business opportunities and threats." In this paper, we use the Attaway's definition as a definition for CI.

The Objectives of CI in an Organization

There seems to be quite a wide and ambitious arrangement of objectives for CI. According to different authors the objectives are "to understand and predict the rivalry, or interactive market behavior, between firms in their quest for a competitive position in an industry" (Chen, 1996), "avoiding surprises, identifying threats and opportunities, decreasing reaction time, out-thinking the competition, protecting intellectual capital, and understanding where an organization is vulnerable" (Thomas Jr., 2001, cited in Pirttimäki & Hannula, 2003b), "to follow companies that were 'corporate competitors' competing with the firm across multiple lines of business, and to function as a 'center of expertise', keeping abreast of the most effective and efficient tools of competitor analysis and disseminating them to analysts elsewhere in the organization" (Ghoshal & Westney, 1991). Groom and David (2001) state in a concise way that "businesses use intelligence to develop strategies that address opportunities and threats and allow them to gain or maintain competitive edge".

Competitive intelligence is claimed to be a necessity also for applying a resource-based strategy and core competence thinking. This is because without correct insight it is impossible to draw correct and useful conclusions on requirements for key assets and competences (Powell and Bradford, 2000). Pirttimäki and Hannula (2003b) conclude that all organizations have to make do with imperfect information, but those who are more efficient than others in processing information and utilizing it, gain a competitive edge. Additionally, it is important to notice that data or information does not suffice, but CI must also "suggest a course of action or warn of a potential problem", as von Hoffman (1999) states.

In keeping with the points raised above, this paper therefore considers the objectives of CI in an organization to be:

1. Reveal opportunities and threats by surveying weak signals and early warnings.
2. Process and combine data and information to produce knowledge and insights on competitors.
3. Satisfy the information needs of decision-making and problem solving and decrease reaction time.
4. Help the organization to gain a competitive edge.

The Results of CI in an Organization

In many cases CI is reported to affect organizations positively. According to a quantitative study conducted by Vedder and Guynes (2002), 53 percent of CEOs find the effectiveness of the firm's CI effort to be "good". However, they do not comment on the meaning of the word 'effectiveness'. In general, it is claimed that taking an active role in competition affects performance positively so that it is always better to be an initiator, an attacker or an early responder (Chen, 1996).

CI is also claimed to change the decision-making of the utilizing organization from reactive to proactive (Ifan *et al,* 2004). Simpson (1997), however, argues that the connection between competitive intelligence operations and the strategic decision-making is often marginal. He questions the proactive nature of competitive intelligence by stating that a company observing competitors and not customers is inevitably a follower and not a leader. Miller (1993) criticizes organizational information systems in general for handling and selecting information and thus causing the harmonization of knowledge, reinforcement of the established perspectives, and thus simplifying issues that are not simple by nature.

Organizational inertia is a concept that refers to the ability of an organization to adapt to the changes in its environment. High inertia implies slow adaptation whereas low inertia implies fast and easy adaptation. One of the causes of high inertia is low awareness of developments in the environment including competitors. However, there is no consensus of the implications of inertia, since some authors claim it to be dangerous and others claim it to be helpful (Miller & Chen, 1994).

Inertia of an organization that is linked to the development of its competitive position is called competitive inertia (Miller & Chen, 1994). The connection between competitive inertia and performance is twofold. Miller and Chen claim that high competitive inertia inhibits adaptation, and may thus be a disadvantage in competition. They, however, claim that in simpler competitive environments competitive inertia may be an asset, since it enables an organization to concentrate its efforts, learn and use resources efficiently. (Miller & Chen, 1994) They also state that competitive inertia is a shield against internecine rivalrous acts that might release competitive responses Thus, competitive inertia may be beneficial, to some extent, also in more competitive environments. Active CI operations may be a precondition for decreasing competitive inertia.

Co-Evolution between Organizations

This section concentrates on the examination of co-evolution; its definition, its preconditions, its meaning in the context of organizations as well the consequences that it may have. Two consequences are analyzed here, namely the Red Queen effect and emergence. Other consequences may exist but this analysis is restricted to these two due to the insights they offer. When talking about CI it is often assumed that there is a firm and its environment, forgetting that the firm's actions have important effects on the environment. Firms together form complex systems and their development is dependent on each other. The Red Queen effect and emergence are consequences of such interdependence and they direct thinking to the systemic level.

Co-Evolution and its Preconditions in the Organization Context

Merry (1999) defines co-evolution as follows. "When the change in fitness of one system changes the fitness of another system, and vice versa, the interdependency is called co-evolution. Co-evolution is the evolutionary mutual changes of species (or organizations) that interact with each other." In the context of an organization population co-evolution takes place between organizations that are interconnected and thus have an effect on each other. The decisions that one firm makes can force or enable other organizations to make some other decisions. The development of a new technology by a firm or a group of firms can trigger many kinds of technology development projects, which can be competitive or complementary, within other firms. Feedback and co-evolution are illustrated in Figure 1.

Figure 1
Feedback and co-evolution (Peltoniemi, 2005a)
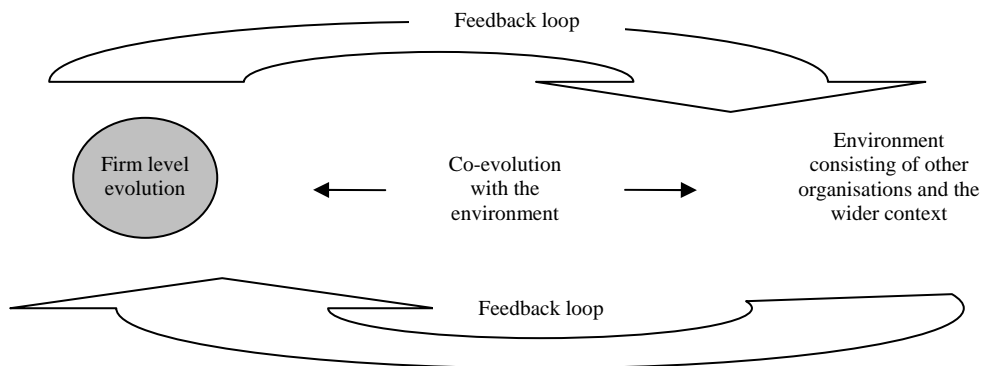
Pagie (1999) discusses three types of co-evolution: competitive, mutualistic and exploitative. Competitive co-evolution consists of competitors making moves in order to gain a competitive advantage. A price war is an example of competitive co-evolution, as well as the development of competing technologies. Mutualistic co-evolution can be observed when firms develop capabilities for cooperation and supplementation. For example, hardware and software are developed to complement each other and the firms involved develop those technologies in mutualistic co-evolution. Exploitative co-evolution may be detected in a situation where one organization is significantly more powerful than the others. This could happen in the context of a large corporation and its suppliers. A supplier aims at developing capabilities that would make it less dependent on the large corporation. The large corporation's goal is, however, to maintain its bargaining power to ensure low prices and timely deliveries. In this paper the emphasis is on competitive co-evolution.

Competitive co-evolution can lead to a deteriorated situation for all firms involved. Day and Reibstein (1997) claim that especially in mature markets competition is a zero-sum or negative-sum game, and companies' reactions that are aimed at enhancing their own position result in all companies involved to be worse off. According Ho and Weigelt (1997) strategic decision making is affected by the quality of information available on other firms. With imperfect information on competitors firms make decisions more independently whereas with better information strategic decision making can become reactive. Information flowing in a tightly wired world enables firms to sense and to react to competitors at a faster rate (Day & Reibstein, 1997). Reactive strategies may be destructive from the point of view of an organization population, as is presented in the following chapter.

Information flows can also be used intentionally to shape the strategies of competitors. The motivations for publishing a piece of information are various, such as discouraging attack, blocking entry, disciplining an errant competitor, influencing codes of conduct, dividing up the market, sending up trial balloons, and bluffing (Heil *et al*, 1997). Thus information flows may also coordinate the behavior of an organization population to avoid destructive behavior in competitive populations.

The Consequences of Co-Evolution in an Organization Population

The consequences of co-evolution that are discussed in this section are the Red Queen effect and emergence. The Red Queen effect concerns the implications that fierce rivalry has on the pace of co-evolution. Emergence comprises macro level behavior that can not be linearly extrapolated from the micro level motives.

<u>*The Red Queen Effect*</u>

Watson and Pollack (2001) define the Red Queen effect as a result of co-evolution where the competitive interactions between two actors motivate them to better their performance in order to succeed in bilateral competition. "Though the performance of individuals improves, the performance of their opponents improves at the same rate, and they find themselves no better off." In the field of biology the

Red Queen effect is defined as a co-evolutionary race between two populations. However, it is also acknowledged that the Red Queen effect can be detected also inside a population (Pagie, 1999). Here the interest is on the Red Queen effect that takes place in a co-evolving, competitive organization populations.

According to Bergstrom and Lachmann (2002), in antagonistic relationships co-evolution leads to accelerated evolution, since in order to survive one must outsmart the competition by continuous improvement. In these arms races each actor rushes to gain the upper hand. The actors are forced to evolve ever more rapidly just to maintain their relative position.

In the context of an organization population the Red Queen effect is present when there is fierce competition and willingness to improve performance compared to other organizations. Thus, there is no such thing as a sustainable competitive advantage that would enable an organization to surpass its competition for a long time without requiring continuous improvement efforts. Merry (1999) states that in order to maintain its relative position in the competition an organization must change constantly. "Where you are is dependent on where others are."

Emergence

A macro level phenomenon that cannot be predicted based on motives and actions at the micro level is emergent. Emergence "means that the links between individual agent actions and the long-term systemic outcome are unpredictable" (Smith and Stacey, 1997). According to Merry (1995) "new properties and novel characteristics emerge that were non-existent in the previous form of the system. This means that at each different scale and level of organization, new types of behavior develop. These could have never been predicted from an analysis of the lower-level components."

Smith and Stacey (1997) also note that emergence means that there is a confusion of the links between cause and effect, which makes it impossible for one actor to control the whole system. When the connection between the actions of individual actors and the long-term outcome of the system are lost, it is not possible for an external actor or a powerful inside actor to control or design the exact behavior of the system. Instead, the system level behavior emerges. (Smith and Stacey, 1997) Shelling (1978) states that in situations where people's behavior or choices are dependent on the behavior or choices of other people it is not possible to simply sum or extrapolate the aggregate behavior. The macro level behavior can be studied by examining interaction between agents and between agent and environment.

These kinds of phenomena can be detected also in an organization population. Interconnectedness and co-evolution between the organizations basically mean that their behavior and decisions are dependent on those of other organizations, which in turn are dependent on the behavior and decisions of other organizations. As a result, the population level behavior is not a linear sum of individual organizations' motives, but is the product of complex interactive dynamics.

Organization population is an emergent structure that has evolved through the actions of individual organizations that function according to their own goals and capabilities in interaction with other organizations. At the population level the results may be far-reaching and surprising, such as formation of two competing large scale cooperation networks in the development of two competing new technologies.

Co-evolutionary consequences of CI within an organization population

In this section the role of competitive intelligence in co-evolution among different kinds of organizations is discussed. First, the role of CI in accelerating the co-evolutionary process is analyzed. Then, other implications of CI, such as proactivity, competitive inertia and homogeneity are discussed.

CI as the Driver of Co-Evolution

CI operations and resultant deliverables that aid in decision making may be termed as drivers of co-evolution. The Red Queen effect can be detected in two different phenomena. Firstly, the organizations may be forced to continuously improve their performance since their competitors will always be challenging the current state. Thus, the innovativeness of the products, for example, is never good enough for any extended period of time since the competitors will outsmart us unless we have the development of the next generation of products well under way. Effective CI operations will provide us with the knowledge of the new products of the competitors while the competitors are finding out about everyone's new products, including ours. This leads to the second phenomenon where the Red Queen effect takes place. Since CI operations enable the organization to succeed better in co-evolution there will be co-evolution among the CI operations.

In order to have an edge in co-evolution the organizations develop their CI processes and systems. Speed and quality of CI are of great importance in monitoring the competitors. Thus, the organizations are willing to invest in developing their CI operations as a response to the CI operations of the competitors. This leads to co-evolution between the CI operations of those organizations. The Red Queen effect may be detected in both kinds of co-evolution since the developments are soon matched by those of the competitors leaving the organizations no better off. Thus, CI enables faster co-evolution which leads to the constant improvement of performance in absolute, but not necessarily in relative, terms. The emergent phenomenon is that the motives of the organizations, namely gaining competitive advantage and thus commercial success, are not congruent with the result on the population level, elevated level of performance in general and thus greater challenges in gaining a competitive edge or in just keeping the relative position.

The Development of a Competitive Organization Population by Co-Evolution

One objective of CI mentioned earlier is to move from reactive to proactive decision making. Basically, all competitors in a population cannot be proactive if they admit that the actions of competitors have an effect on their decision making. If an

organization makes decisions proactively they make them prior to knowledge of competitors' actions that might have an effect on their own decision making process. This is why proactivity is a problematic concept. Basically all decisions that an organization makes have a reactive component. Perhaps proactivity in this context bears the notion of reduced reaction time and a general insight about the behavior of competitors. This is essentially related to the question of following instead of leading in organizations exploiting CI. If the organizations in a population are competing then they cannot all be leaders simultaneously. But CI may enable an organization to take over the leader's position at least until some other organization challenges the position.

Competitive inertia is a concept describing a characteristic of an individual organization. However, it has got an effect also on the population level especially when there are many organizations with low competitive inertia. An organization with low competitive inertia adapts quickly to the acts of competitors. This leads to the acceleration of competitive co-evolution, which may be a positive or negative thing. On the one hand, it may lead to a quick development of an industry, which is beneficial for all organizations in it. On the other hand, it may lead to a disadvantageous spiral of harming the competitors instead of concentrating on the development of the core business. An organization population where most organizations are of low inertia is a very unstable environment, and strategic planning is difficult for all organizations. Instead, an organization population with high competitive inertia may be rather stable, but it may also lull organizations into a dangerous feeling of safety. Those organizations are badly prepared for competition when the situation changes.

It was stated that the use of a CI system unifies opinions and causes blindness which may, however, be beneficial if it makes people work consistently towards common goals. On the other hand, Ashby has presented an idea that suggested that if two entities are competing, the winner is the one, who has got greater variety of possible acts. Only variety can destroy variety (Ashby, 1956). This means that the internal variety of an organization should be at least as high as the variety in the surrounding environment. Thus, a comparative reduction in variety inside an organization causes a reduction also in the possible acts of that organization. This is why homogenization of an organization may be dangerous, because it lowers its adaptation potential. The same holds true for organization populations, which may be homogenized by effective competitive intelligence, when the organizations try to copy the success factors from each other. This homogenization is a genuine consequence of competitive intelligence, because organizations practicing competitive intelligence tend to reproduce the competitive repertoires of other organizations (Peyrot *et al*, 2002). This diminishes the possibilities of the population to cope in a new situation. The key success factors alter in the course of time and organization populations should constantly contain the seeds of change.

Conclusions

Understanding business dynamics at the population level is difficult for any organization, whose attention is bound by the everyday routine of business decisions. However, there are population level phenomena that have an effect on every organization in a certain population. The concepts 'emergence' and 'Red Queen effect', although having their roots in other fields, can be applied in explaining phenomena of the business world.

Efficient use of CI can lead to accelerating and intensifying rivalry which accentuates the importance of consistent and realistic strategy. This means that organizations must make tough decisions concerning investment opportunities and revenue sources. To run away from the Red Queen effect a firm has to concentrate their business in a certain niche and let go those business areas where the organization does not have the capabilities to be the best. An alternative to this would be to acquire competitors to slow down the running. However, this is not a viable option for many firms of smaller size.

Based on previous research and this paper it seems that the conditions that may be the result of co-evolution among certain populations or within industries may negate the possibility of achieving competitive advantage through CI activities. However, efficient CI activities can help a firm to understand its strengths and weaknesses in relation to its competitors and to create a picture of the options that a given competitor is facing. Potentially, this way a firm can also anticipate, with some accuracy, the future moves of its competitors.

An interesting empirical research project would be to study the effects of adopting CI solutions and processes. This could be done by examining and comparing organizations that have adopted CI and those that have not. The hypothesis of the Red Queen effect would suggest that those who have adopted CI would be keeping their relative positions while the others would be losing theirs.

In addition to competitive co-evolution, cooperative interactions and co-evolution resulting from them would be interesting both theoretically and empirically. This is because purely competitive populations are rare in real life. In any organization population both competition and cooperation may be detected and may even take place simultaneously in the relationship of two organizations. In relation to cooperation an intriguing phenomenon is the co-evolutionary race that occurs between cooperative partners where each aims at outmaneuvering the partner and winning a greater share of the surplus. It has been stated that in contrast to the Red Queen theory, mutualistic interactions often favor slow rates of evolution (see e.g. Bergstrom & Lachmann, 2002).

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Key Terms
Competitive Intelligence, Co-Evolution, Organizations, Organizational Culture

The Emergence and Uniqueness of Competitive Intelligence in France

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Abstract

This article reviews French approaches to Competitive Intelligence. After establishing what forms CI take in French industry and language, the unique facets in France are discussed: government initiatives, the unique role of the Chambers of Commerce and Industry, and Regional Intelligence. A timeline is proposed illustrating how CI in France has evolved and who have been the key players. The equally original contribution of CI post-graduate degree programs is discussed together with the role of consultancies, support organizations, and academic research contributions. Three examples are included not only to elicit specific cases in Regional Intelligence, Consultancy, and Education, but also to illustrate how the different actors interact. Concluding remarks reflect on the outlook and restraints for CI in France.

Foreword

To the best of the authors' knowledge no comprehensive English language summary has been published in the academic world regarding Competitive Intelligence in France. This work is the first step towards creating an inventory of French approaches and with such a large topic range omissions are likely to occur. The authors welcome any contributions that should be part of future versions.

The Origins of Competitive Intelligence in France

Competition and competitive analysis have come historically late to the French economy. Up to the free-trade agreement embedded in the Treaty of Rome in 1953, the French economy was relatively free from foreign competition. However, as early as the 17th century, international intelligence networks were constructed to enhance economic performance. Upon the arrival of Jean-Baptiste Colbert, the Minister of Finance under Louis the 14th, French industry was in decline and the country required new skills and experienced master craftsmen. In 1662 Colbert created a network of agents whose brief was to identify and attract talent from Holland, Germany, Sweden and Italy to complement French industrial capabilities. Incentives of land, subsidies and monopoly concessions were proposed. At the same time French craftsmen were subject to the death penalty if they left French soil (Levet, 2001). Whether this was the starting point of a state inspired intelligence network

focused on national economic competitiveness, is debatable. Nevertheless, the hallmarks of CI, or as the French would call it *Intelligence Economique*, in France today, are the omnipresence of government organizations, a focus on Small and Medium Sized Companies, an emphasis on defensive tactics, and its presentation as a national, even patriotic movement.
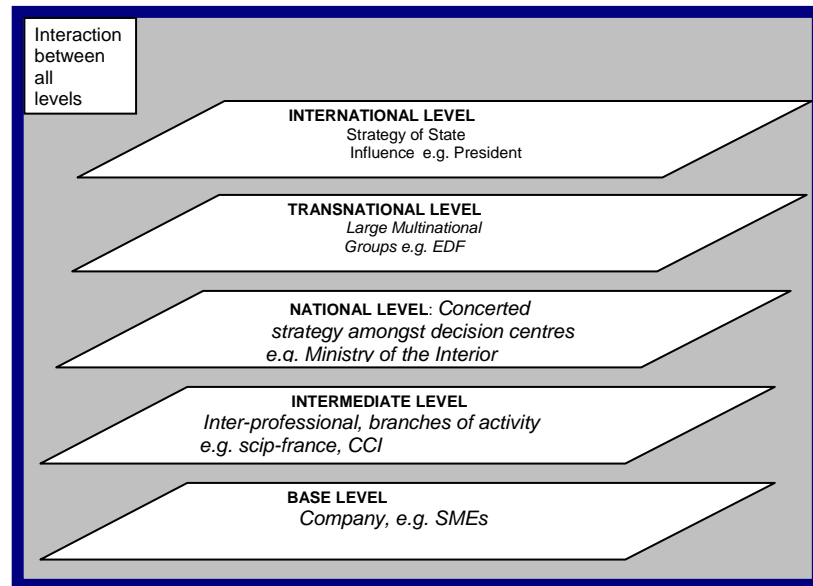
In France, the state is viewed as a dominant participant in economic activities. During the French Revolution both corporations and associations were outlawed (the decrees Allarde and Le Chapelier respectively, 1791), dramatically reshaping commerce and industry. The Chapelier decree was not annulled until 1865. Even after 1945 the political heritage has been one of standardizing the selection of elite decision makers to manage the economy. Today lobbying and think tanks are acknowledged as legitimate actions in democratic processes. This is a recent change of mentality, and one that has come through external pressures and economic realities rather than a political heritage.

From the mid-80s onwards, a few personalities have taken the initiative of developing CI. They came from various backgrounds, including academe, defense, government and business. These individuals are acknowledged for their contribution to the emergence of CI at practical and theoretical levels, providing a doctrinal approach to CI with a focus on its scientific components. They are considered the founding fathers of CI in France, and all but one are listed on the web site of the General Secretariat of National Defense. These founding fathers, either initiators or contributors, are listed in Appendix 1.

However, it is likely that most people call to mind Martre (1994), who defined *Intelligence Economique* (IE) as the combined, coordinated research actions of information treatment and the diffusion of economic actions for strategic and operational exploitation. Interestingly the French SCIP chapter was started in 1992, even if it remains outside of the international American centric SCIP organization. Leading government figures and the academic community generally consider IE as the French language translation of CI. This paper will refer to CI unless *Intelligence Economique* is mentioned in a specific governmental context. Therefore caution is needed, as IE in France is an evolving public policy with multiple dimensions and broader applications than CI in many other countries.

Competitive Intelligence in France is multidimensional in that it involves all levels of government, numerous support organizations from the private and the public sectors as well as public private partnerships and quasi-governmental organizations, like the Chamber of Commerce and Industry (CCI) or the Agency for the Diffusion of Information and Technology (ADIT). Francois Jakobiak (2006), as a former member of the Martre Commission, identifies five levels of IE shown in Figure 1. He notes that the only levels which researchers and companies have the skills and means to address are the last two; the inter-professional level and the company level. The other levels concern political decision-makers.

Figure 1
The Five Levels of IE

INTERACTION between all levels

INTERNATIONAL LEVEL
Strategy of State
Influence e.g. President

TRANSNATIONAL LEVEL
*Large Multinational
Groups e.g. EDF*

NATIONAL LEVEL: *Concerted
strategy amongst decision centres
e.g. Ministry of the Interior*

INTERMEDIATE LEVEL
*Inter-professional, branches of activity
e.g. scip-france, CCI*

BASE LEVEL
Company, e.g. SMEs

Source: Jakobiak, 2006

The uniqueness of Competitive Intelligence in France is that it encompasses all five levels. Competitive Intelligence in the USA, the UK, and Germany for example, is often considered a domain for the private sector and professional associations. The French view the USA as having superior Competitive Intelligence at the country level. The CIA's launch of In-Q-Tel in 1999 is often quoted, as is the advocacy center, which explicitly states its mission to help US business interests. These two visions as to whether the role of government is central or separate to CI is at the heart of the translation and definitional difficulties.

Government Initiatives

The Martre Report (1994) was undertaken and published within a governmental, national, even secretive framework. Clearly evaluating national competitiveness, it concluded that French large companies were focused on protecting 'knowledge capital' and had only limited technology surveillance. The loss of a large aeronautic contract in the Middle East to The United States at this time exacerbated the sense of falling behind. Worse still the Small and Medium sized Enterprises were failing to recognize the strategic stakes of CI. Notable were the four pillars of CI for France:

1. Encourage the practice of CI at the company level.
2. Optimize the transfer of information between the private and public sectors.
3. Construct data banks in light of the user needs.
4. Mobilize the training and education world.

The Carayon Report (June 2003), ordered by Prime Minister Raffarin, also addressed the national competitiveness of France. It included European level comparisons of how national governments manage *Intelligence Economique*. A notable change in semantics is the use of Bernard Carayon's term *Patriotisme Economique a*s a proxy for Intelligence Economique; he has developed this theme in his recent book, *Patriotisme Economique* (2006). His 2003 report provided 38 proposals. François Jakobiak, extended this report into a book (2004, 2006) to make IE more accessible to managers, consultants and students.

Proposition 3 was the establishment of an inter-ministerial High Representative for Intelligence Economique (HRIE), Alain Juillet. The role of the HRIE is summarized in Figure 2 below.

Figure 2
The Role of the HRIE
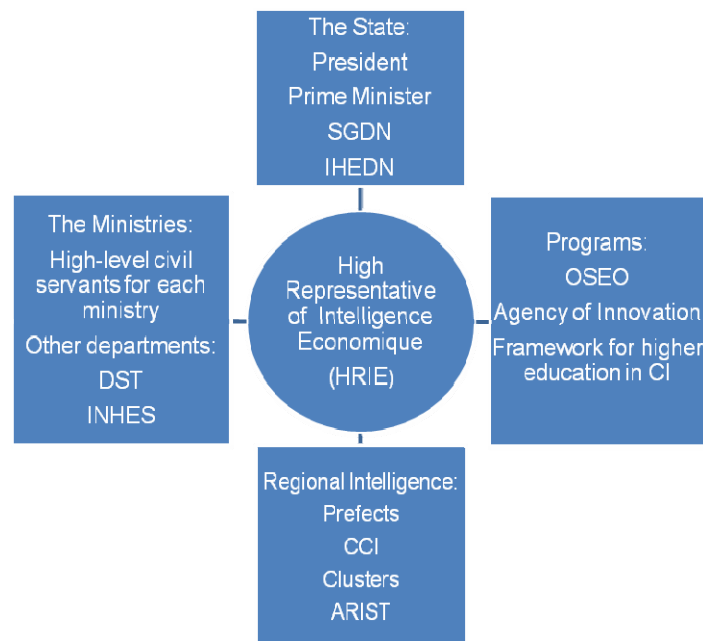
Alain Juillet is sometimes referred to as "Mister CI". The HRIE is to liaise with ministries, state government, regional intelligence and other programs like OSEO and the Agency of Innovation. These two programs that help finance and support SMEs in critical stages of development were merged in October 2007. The DST (Territorial Surveillance Directory) focuses on counter espionage. The Secretariat General of National Defense (SGDN) is the central body for coordinating the national IE program. The SGDN supports the Prime Minister in terms of national defense and security. Among others, it supervises the Institute of High Studies of National Defense (IHEDN). The SGDN is made up of five sections, plus the permanent secretariat of the inter-ministerial committee of intelligence (Comite Interministeriel du Renseignement), and the HRIE's team.

At present, it seems difficult to assess the impact of the national IE policy, which is currently being implemented. A few personalities tried to shed light on the first initiatives. According to Christian Harbulot (2006), France's IE policy is in its first phase which consists of raising awareness. The implementation of a modern IE apparatus is challenging, but the HRIE Alain Juillet has managed to have some success thanks to his perseverance and despite a relatively uncooperative environment. For instance, defensive CI has improved markedly.

Bernard Carayon published a second report called A Level Playing Field (*A Armes Egales*, 2006) in which he proposed the implementation of a European "Small Business Act" to level the playing field of European SMEs in face of their U.S. counterparts. While acknowledging advances in French CI, such as more collaboration between CI professionals, greater CI awareness and the certifying of degree programs, the report *A Armes Egales* also declared frankly some of the limitations of government initiatives. Chiefly, these concerned the involvement of the SGDN, which gave the impression to some that CI was about defense and security more than value creation. The hierarchical and even secret nature of the SGDN was questioned in terms of the effectiveness of intelligence gathering, integration and dissemination. The report also considered the contributions of the ministries to be very unequal with only the Ministry of the Interior and the Ministry of Defense being truly engaged. It should be noted that these observations were made at the end of 2005.

The unique facet of French Competitive Intelligence is this top down, state inspired approach that notably uses the infrastructure of the French Chamber of Commerce and Industry (CCI) to implement regional initiatives. The French CCI is made up of 155 chambers plus 20 regional offices. It is managed by 5150 elected managers and has an overall budget of 3.95 billion Euros. The three main objectives are company support, training, and facility management. Philippe Clerc is the director of CI at ACFCI (The French Assembly of French Chambers of Commerce and Industry).

ADIT (Agency for the Distribution of Information and Technology) was created in 1992 and is seen as a bridge between the public and private sectors in terms of strategic intelligence. There is an ongoing debate as to whether it should be

privatized. It has three fundamental objectives: provide competitive intelligence for large companies engaged in international commerce; assist SMEs through Regional Intelligence programs, and finally to provide a technology watch for French economic actors. An international network of experts spans Europe, Asia, North America, the Middle East, Russia and India.
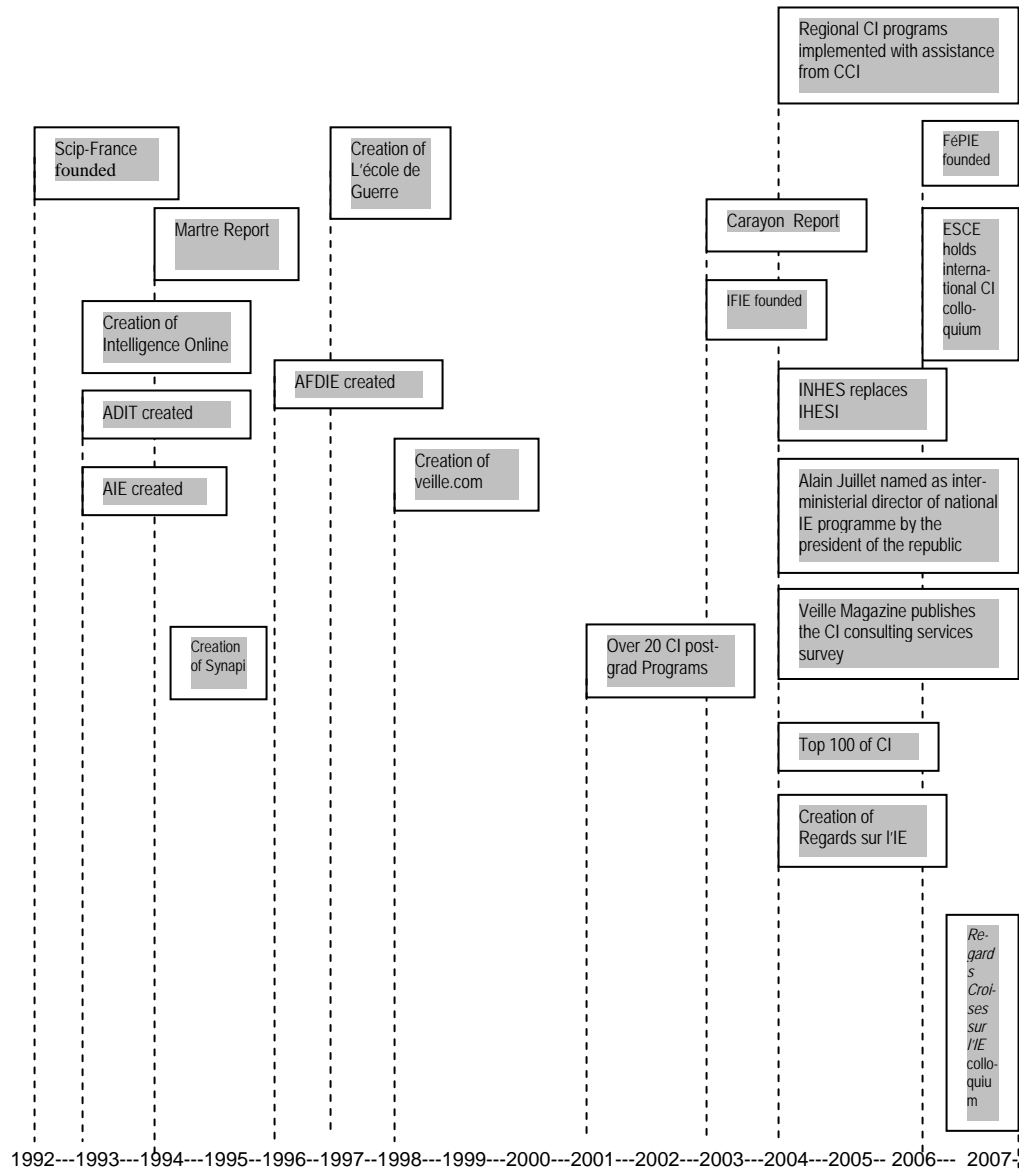
French Regional Intelligence programs are mostly targeting SMEs. While it is state inspired it is not state dictated. Local implementation tailored to regional economic needs is encouraged. This is largely training in CI techniques plus conferences defining what CI is and what are the stakes for SMEs, and consulting on necessary actions, such as defensive CI techniques and accessing pertinent data into decision-making. In the UK this type of activity may be referred to as regional economic development.

In French minds industry clusters are either a complement to or an integral part of Competitive Intelligence. The French government delineated 67 competitiveness clusters in July 2005 which has grown to 71 today. An overall state budget of 1.5 billion Euros was budgeted for a three-year period. A cluster is defined as an association of companies, research centers and educational institutions working together to generate synergies in a given market.

Figure 3 is a timeline that summarizes the key events and the emergence of organizations that have had a significant affect on CI in France. It encompasses the actors and events in government initiatives, professional organizations, regional intelligence programs and education. The Carayon Report in 2003 clearly propelled the field forward.

Figure 3
Timeline of Key Events for CI in France

Year	Event
	Scip-France founded
	Creation of L'école de Guerre
	Regional CI programs implemented with assistance from CCI
	FéPIE founded
	Martre Report
	Carayon Report
	ESCE holds international CI colloquium
	Creation of Intelligence Online
	IFIE founded
	AFDIE created
	INHES replaces IHESI
	ADIT created
	Creation of veille.com
	AIE created
	Alain Juillet named as inter-ministerial director of national IE programme by the president of the republic
	Veille Magazine publishes the CI consulting services survey
	Over 20 CI post-grad Programs
	Creation of Synapi
	Top 100 of CI
	Creation of Regards sur l'IE
	Regards Croisés sur l'IE colloquium

1992---1993---1994---1995--1996--1997--1998---1999---2000---2001---2002--2003---2004---2005-- 2006--- 2007-

French Competitive Intelligence Organizations

Table 1 summarizes the main French CI support organizations, their objectives, and date founded. We have listed the organizations that were most often cited by CI actors, and sorted them in alphabetical order. There are two groupings presented in the following order: CI professional associations and national think tanks.

Competitive Intelligence In Action In France

CI in France is often expressed through the interaction of various players from the government, consultancies, education, and companies. Three examples follow which elicit how these key players interact. Example one focuses on Regional Intelligence programs; example two explores the foundation of a leading CI school and the third example discusses the growth of a leading consultancy.

Example 1: CI and Innovation Team Up in Brittany

The Chamber of Commerce and Industry of Rennes created in 2006 a regional project named Novincie. The project involves creating awareness of CI concepts for regional enterprises and training in CI techniques. A unique feature is the combination of CI and innovation (from which the name is constructed). The geographical scope is the region of Brittany. Strategic partners include the CCI, the Rennes Management Institute (*IAE de Rennes*), the enterprise network of Intellectual Property, the regional Association of Auditors for the Institute of High Studies of National Defense (IHEDN) and the Enterprise Union for *Ile-et-Vilaine*. While open to any enterprise irrespective of size, a particular focus is the Small and Medium Sized Enterprises (SMEs) in traditional industries that are considered to need assistance in managing information, competitive analysis, and managing intellectual assets. Concrete actions to date have been the CI training course proposed by the Rennes Management Institute in 2006 and 2007 as well as a conference focusing on the exchanges of experiences by three companies.

In parallel, the CCI in Rennes has launched a pilot project with 13 enterprises to set up Competitive Intelligence units. This is under the auspices of the ACFCI (The French Assembly of French Chambers of Commerce and Industry, whose CI function is directed by Philippe Clerc). The sectors include agriculture and food industries, construction, furniture, telecom, and service providers. The companies must have less than 200 employees. The team includes an employee from CCI, another from DRIRE (*Direction Regional de L'Industrie, de la Recherché et de l'Environnement*) and the involvement of six external consultants. Financing is from the CCI, the Regional Council of Brittany, DRIRE, and the companies themselves (20%). Expansion of the program to the whole region is expected in 2008.

These regional based initiatives co-opt governmental, educational, and industry organizations to facilitate enterprises in their CI needs. This constitutes *Territorial Intelligence* in a French context.

Table 1
CI Support Organizations

French Acronym and English Translation	Organization Objectives	Date Founded
Professional Associations		
ADBS Association of Information and Documentation rofessionals www.adbs.fr	With nearly 5000 members, ADBS aims in particular to diffuse and develop the use of new technologies, publish contributions, promote the profession, and develop the skills of its members by offering training sessions.	1963
AIE Academy of Competitive Intelligence www.academie-ie.org	This association with several hundred members promotes CI and tries to understand and adapt CI to companies' needs. Notably, it runs a blog in partnership with Les Echos (a French business newspaper) and also organizes an annual CI literature prize.	1993
FEPIE French Federation of CI Professionals www.fepie.com	Seeks to professionalize the French CI world through a strict adherence policy, a code of ethics, and validating standards for training programs.	2006
IERSE Institute of Studies and Research for Company Security www.ierse.fr	Plays a three-fold role: trains companies in security and risk management, conducts research in this area, and takes part in the public policy of competitive intelligence and security.	1997
IFIE French Institute of Competitive Intelligence www.ifie.net	Provides CI training, recruitment services, and related studies. Wishes to accompany enterprises with their CI needs.	2003
SCIP France Society of Competitive Intelligence Professionals France www.scip-france.org	Currently with 200 members, this group provides a network of support and exchange for Competitive Intelligence Professionals. It is not an officially recognized affiliate of SCIP; the working language is almost entirely French.	1992
Synapi National Union of Information Advisers www.synapi.com	Synapi's objectives are to increase visibility and accessibility of Competitive Intelligence. It is considered as a network of experts and encourages initiatives with SCIP France and FePIE.	1994
National Think Tanks		
AFDIE French Association for the Development of Competitive Intelligence www.afdie.net	Acts as a think tank bringing together CI practitioners from the private and public sectors, including firms, schools, universities, and consultancies, and delivering proposals in the form of reports, case studies, notes, and methodologies.	1996
IHEDN Institute of Higher Studies for National Defense www.ihedn.fr	Acts as a portal for CI actors, associations and official reports. Implements its role of 'Economic Defense' through CI. Provides training on CI practices.	1936
INHES Institute of Higher Studies for Security www.inhes.interieur.gouv.fr	Plays a great role in regional intelligence policy by implementing economic security in the clusters of competitiveness, and by making SMEs aware of the necessity of economic security.	Replaced IHESI (1989) in 2004

Example 2: Creating The Ecole de Guerre Economique in France

Whether in English, The School of Economic Warfare, or French language, the chosen name has been an eye catcher since its founding in 1996. The school is notably the brainchild of Christian Harbulot, himself an adviser for the Martre report of 1994, and leading author of CI in France. This key figure in French CI was also the founder of ADITECH, the precursor of ADIT.

The philosophical underpinning of this school and its objectives result from a reflection on oriental strategic thought proclaiming strategy is inseparable from combat. In that sense the school has positioned itself as having a geo-political approach. The intellectual goal was to advance beyond both Marxist and Anglo-Saxon thinking. The invisible hand was seen as US power and not the market; this theme has been picked up more recently with the Carayon report of 2006, *A Armes Egales* (A level Playing Field).

Pedagogically then, the American style Master Degree Programs and Anglo-Saxon analysis methods are not seen as being the definitive model even if elements are to be integrated and followed. There is an emphasis on combining military and civil approaches both from home and abroad with a proactive 'offensive' use of information in economic decision making. Manifested in a postgraduate degree program, executive training modules, and research, the school takes a multi-disciplinary approach including the practical application of Information Technology.

Example 3: Acrienet and Acrieproj, Driving Forces Behind Public Private Partnerships

CI in France is often composed of public and semi-public bodies, which mostly work with SMEs to support them in terms of CI implementation and operation. Private consultants, especially those focusing on SMEs, often share CI projects with regional and local authorities and Chambers of Commerce. This example illustrates how a PPP (Public Private Partnership) can take shape in the French CI arena.

Founded in 1999, Acrie, a network of private CI consultancies, has developed both French and international service networks. Its founder and leader Pascal Frion, based in Nantes, agreed to set up a decentralized national network of independent private CI agencies, upon the proposal of the School of Economic Warfare. Mainly European, Acrie is based in nine French cities, and abroad in Italy, Portugal, Spain, Germany, Canada, and Argentina. All agencies hold the Acrie trade name as consultants operating under the same umbrella.

Acrie has strived to work in harmony with the public and semi-public bodies by acting as complementary consultants within the framework of regional CI programs. The headquarters of the network, Acrie Nantes, initiated a project to design a CI learning tool named AcrieNet. The latter consists of helping users conduct Internet research as efficiently as possible, in other words to provide structure and methodology. Once developed, AcrieNet was instrumental in various areas, notably during the implementation of CI in nine pilot French regional projects. Acrie had the

opportunity to cooperate with ADIT (Agency for the Diffusion of Technological Information) to equip regional prefectures.

Continuous development of AcrieNet was boosted in August 2004 by translating it into five languages: English, German, Spanish, Italian, and Portuguese. With AcrieNet, users not only learn by themselves how to conduct information research on the Internet but also learn about environmental scanning and Competitive Intelligence. In face of the demand for in-depth learning of CI, Acrie decided to extend its product range by designing AcrieProj, which is available only in French for the time being. This tool offers organizations the possibility to learn CI by conducting CI projects by means of methodologies, forms, checklists, case studies, best practices, examples, and resources.

With the aim of reducing the amount of time spent in analyzing information and optimizing the strategic questioning at the beginning of a CI project, AcrieProj has not only been interested in private organizations but also in the public world, as has AcrieNet. With AcrieProj, organizations can work alone on their CI projects without needing an external consultant. This is Frion's concept of "consulting without a consultant".

Acrie accompanies the users one month after the self-training starts, in terms of methodology transfer. Three months later, Acrie supports them by following up the implementation of best practices. The integration of 850 technical reference sheets and of shared databases into AcrieProj enables users to manage self-learning and to gain new experience and expertise in terms of CI. Furthermore, the interactivity of the tool allows users to customize AcrieProj according to their needs. These approaches of encouraging autonomy, customization, and the dissemination of best practices have proven to be effective in both private and public sectors.

Achievements and Challenges in the CI Consulting World

In 2004, Veille Magazine, which had surveyed 82 CI consultancies in France, published the results in a study titled *The Strategic Information Consulting Market*. In the same year, Intelligence Online published an in-depth study on *France's Top 100 of CI*, which aimed to give more insight into CI actors in France including consultancies. A second edition of France's Top 100 of CI in 2006 followed these two major 2004 French publications.

A comparative analysis of the three above-mentioned studies shows that CI has been expanding in France. With an estimated market of 125 million Euros in 2004 (Le Journal du Management, 2004), CI consulting firms kept on growing with a 15 to 20% revenue increase in 2005. Nevertheless, this burgeoning market does not represent a large size compared to the Anglo-Saxon market with its CI giants such as Kroll and Control Risk Group (Philibert, 2006). France's relatively small market size reflects a remaining discrepancy between the widespread and catchy *Intelligence Economique* term in the media, and the still limited practice of this modern management concept in the business world. CI is basically in the hands of about a hundred consultancies, which is rather limited.

Furthermore, Veille Magazine found out that only five cabinets generated a turnover higher than 5 million Euros in 2004. This is a better performance than in 2002, where only three consultancies surpassed 5 million Euros: the Geos group, Datops, and the government-owned ADIT. At that time, two other firms nearly reached 5 million Euros in turnover, Atlantic Intelligence and ESL & Network (Tavoillot, 2004). According to Intelligence Online (2006), the situation somewhat improved in 2005, since the top seven consultancies achieved an overall turnover of 56 million Euros, that is 8 million Euros average.

On 25 September 2006, the Prime Minister's general secretariat of national defense (SGDN) released an official list of CI professions and competencies. Veille Magazine's study depicted the key competencies of French consultants as being environmental scanning and strategy. In 2004, 54% of consultants were practicing environmental scanning which was a focus for 25% of the 82 consultancies interviewed. Strategy closely followed scanning, for it was a predominant activity for 24% of consultancies. "*Influence*" (Figure 4) in French means that an individual or a company can shape a political decision whereas "Lobbying" is for a whole industry or sector. According to Intelligence Online (2006), consulting firms tend to be closer to brain trusts. Not only those consultants specialized in CI but also an increasing number of strategy consultants such as Roland Berger Strategy incorporate CI into their services portfolio. The reason why the CI consultancies' expertise has moved to strategy is the further development of growth and mergers and acquisitions (M&A) strategies and of consulting activities within organizations.

Figure 4
Dominant CI competencies
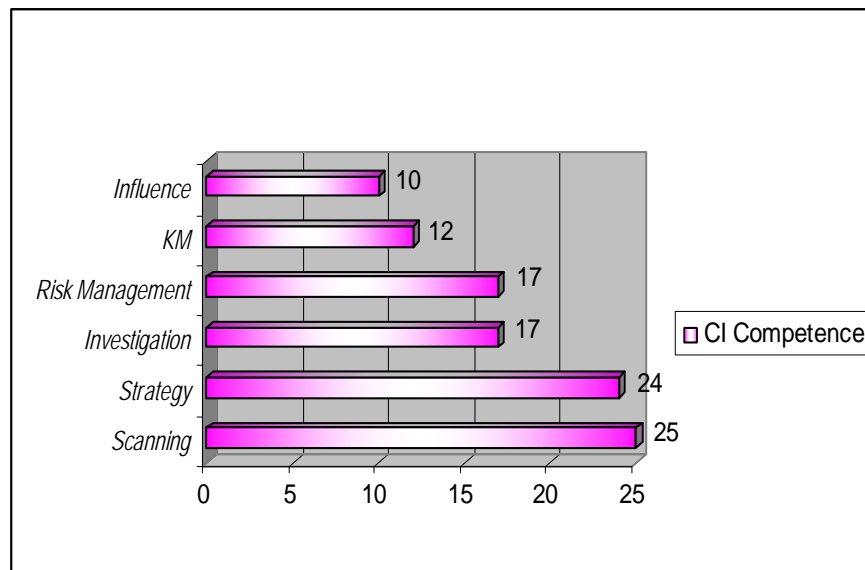
Source: Veille Magazine, 2004

Despite their relatively young existence of no more than ten years or so, the major French CI consultancies have managed to have an international reach. It was added that CI consultancies intend to find strategic information for their clients, help them acquire new markets and companies, or even face insecurity, especially in those countries where information flows are different from Europe (Fay, 2007). As a matter of fact, Europe-based companies tend to call for CI consultancies only when their attorneys or banking advisors cannot fulfill their needs, notably in view of takeover bids or large-scale financial maneuvers.

Company Practices In CI

Research has explored both large companies and SMEs in terms of company practices in CI. A survey of 1200 French companies in 2000 by IHEDN found that over half of them make an effort in CI and that most major French groups have an organized cell. Nevertheless, France's largest company, Total, only formally nominated a director of CI in 2003, the same year as Danone. While not much information on these developments seeps into the public domain, it is clear that large French companies have been active over the past five years in terms of formalizing their CI practices, nominating CI directors and creating CI cells. It was noted by the Tribune, a leading French business newspaper, that this emergence of CI directors in the hierarchy of the big French groups was more about the increasingly unreadable economic environment and ever-greater competition than the government initiatives. It does however go hand in hand with the Carayon report and the efforts of Alain Juillet. More significantly, this trend affects all industries and the public sector, and not just the traditional industries of CI focus such as aeronautics, aerospace, oil, defense, and health.

Just as with consultancies, CI has moved up to a strategic level within large companies. It is not limited to the environmental scanning and investigation functions any longer. At Sodexho, Sanofi–Aventis, and Areva, CI is directly put under the CEO's responsibility. Sometimes, corporate directors and heads of subsidiaries (Sanofi Pasteur) are in charge of CI. Companies such as STMicroelectronics, Renault, Saint-Gobain, and Gaz de France placed CI on the next lower level by nominating heads of CI departments (Intelligence Online, 2006). Whereas some companies are proactive and transparent when positioning CI in their organizational chart, others are more defensive by putting security first. This is the case of Areva since 2005, Michelin traditionally, PPR, and EDF (Tavoillot, 2004; Intelligence Online, 2006).

It was stated that many SMEs do not master the concept of Competitive Intelligence (*Rapport du Commissariat General du Plan*, 1994; Levet and Paturel, 1996; Hassid et al., 1997). In 2006, Jerome Bondu, the director of the IES (*Intelligence Economique et Strategique*) club, expressed the difficulty of convincing SMEs about the need for CI practices. Bulinge (2001) spoke of the need to have incremental steps for CI implementation in SMEs and of the importance of convincing decision-makers. Salles (2006) designed a model that enabled her to categorize the information needs of SMEs, notably in terms of the environment. By means of a longitudinal study

undertaken within a trade union, Al Abdulsalam and Paturel (2006) showed how trade unions can foster the practice of Competitive Intelligence within SMEs. Larivet and Brouard (2007) studied SMEs in the Rhone Alp region of France. They found that companies that undertake Competitive Intelligence or Environmental Scanning have an international orientation and privilege the strategies of differentiation, focus and diversification.

Large companies also call for the services of CI consultancies. In its 2004 study, Veille Magazine indicated a fairly high share of large corporations in the clientele of CI consultancies with 42%. The remaining 58% were pretty evenly spread among local government entities, institutions, and private organizations with less than 100, 100 to 500, and over 500 employees (Figure 5).

Figure 5
Client Profile
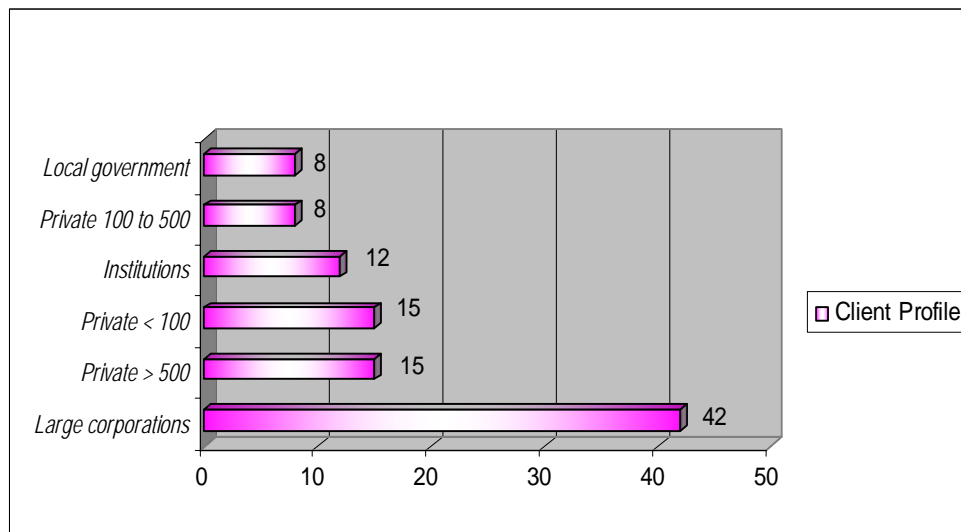
Source: Veille Magazine, 2004

Academic Teaching Programs

If there is any area where CI is most active in France, this may well be in education. In 2005, 54 teaching programs in CI were identified (Martinet, 2005). This abundance of programs inevitably led to concerns about standards. In 2004, a commission of 16 experts (professors and researchers) nominated by Alain Juillet proposed a framework of teaching programs in CI (*Referentiel de Formations en Intelligence Economique*). The High Representative for *Intelligence Economique* approved this framework in May 2005. The document was set to clarify the content and methodologies of CI and to give a guideline to education institutions in terms of CI training quality standards. More precisely, the purpose of this framework was to

identify the knowledge and know-how to be acquired by a student within the framework of a post-graduate professional-oriented teaching program in CI. The publication of the framework represents a first large step forward in the line of policy "education" given by Alain Juillet to raise awareness of CI in France.

Further to the framework of teaching programs in CI, several schools and universities reshaped their training programs or stated in their web sites they comply with the quality standard defined by the reference document. Master's Degree Programs in CI are either professional or research-oriented. The latter ones focus on career prospects in the research world with the preparation of a PhD as a next step. However, the boundaries between both masters are fading. Graduates with a professional-oriented master can also apply for a PhD. The offer for CI programs in France has exploded, especially in the early 2000s. Programs in CI can be categorized as follows: university Master's Degree Programs in CI, business school Master's Degree Programs in CI, engineering school masters in CI, private CI education, and Master's Degree Programs with a major in CI. There is a strong propensity to offer double-competency Master's Degree Programs, CI is often taught along with communication, marketing, hard sciences and IT for the graduates to be more competitive on the job market place. Without specialization, it is difficult to work in CI since many employers still fail to recognize the benefit of CI for their companies.

There are many initiatives for CI students. The magazine *Regards sur l'IE* (RIE) publishes learning materials on environmental scanning, Competitive and Regional Intelligence, information management, and lobbying. The visitors of RIE's COURSIE can download these resources free-of-charge. CI professionals from consultancies, companies, and universities can submit their contributions. Additionally, RIE has organized a national CI competition called COGENIE since 2006, in order to foster reflection on CI. This competition is run on the Internet and brings together students in CI from various French universities and business schools.

Research

As a relatively young discipline, CI has not yet imposed itself on the French research world, despite several attempts. The number of CI-focused academic journals do not account for the share of people interested in CI from a research perspective. One can consider ISDM (Information Sciences for Decision Making) as in the field but the *Revue d' l'Intelligence Economique*, published by AFDIE between 1997 and 2000, does not exist anymore. It is often covered by academic journals focusing on closely related and related disciplines such as risk management (*Risques et Management International*), information systems (*SIM*: Information and Management Systems), marketing (*Revue Internationale des Sciences Sociales* Market Management), defense (IHEDN's journal *Defense*) or on broader disciplines like management (*Revue Francaise de Gestion*).

CI research is a growing and increasingly recognized field in France. More and more students and even professionals decide to pursue a PhD in CI, in the form of a traditional university-based thesis or an industrial thesis. The latter can be

prepared within the framework of a CIFRE (Industrial Agreements on Training by Research) contract. A few awarding initiatives aim to encourage research in CI. In 2007, the National Scientific Research Center (CNRS) introduced a four-year CI research program with a yearly financial aid of 40,000 Euros. Since 1998, the prestigious IHEDN has delivered a yearly academic prize for research-oriented masters and PhD theses in the area of defense and security including CI. As for the AIE (Academy of Competitive Intelligence), it launched a literature prize called IEC (Competitive Intelligence and Competitiveness) in 1995 to award the best books or even PhD theses in CI. More recently, in July 2007, the CIGREF and the ANDESE invited Alain Juillet to award the best PhD thesis in CI at the colloquium *Regards Croises sur l'Intelligence Economique*.

Endeavors have been made, particularly by means of conferences and colloquia, to bring together practitioners and academics so as to mutually enrich practice and research. The *Rencontres de l'Intelligence Economique* (held at CERAM, Sophia Antiopolis) illustrates this state of mind very well, since this colloquium, held for the fifth time in 2007, is deliberately a blend of people coming from companies, schools, universities, government and consultancies to share viewpoints and findings on CI. Over the last ten years a new generation of CI researchers has emerged. The dean of CERAM business school, Alice Guilhon, continues to publish in Competitive Intelligence and is vice president of the INHES CI group. Franck Bulinge, another distinguished researcher in CI is also at CERAM, teaching and researching in CI and KM. The colloquium *Regards Croises sur l'Intelligence Economique* consists of the same concept and is organized by the CIGREF (IT Club of Large French Companies) and the ANDESE (National Association of Doctors in Economic and Management Sciences). In November 2006 the business school ESCE held a colloquium 'Competitive Intelligence and International Competition'. This was a multidisciplinary event and attracted some of the leading researchers in France. John Prescott (University of Pittsburgh) was one of the keynote speakers and Alain Juillet formally opened the colloquium. Sophie Larivet, based at ESCE, is an example of a French CI researcher straddling French and North American thinking on CI, co-authoring with Francois Brouard (University of Carleton, Canada). Nicolas Moinet, from the University of Poitiers, publishes findings in CI in relationship with environmental scanning, network management, and economic security. He has often co-authored with his fellow researcher Christian Marcon. Another initiative goes beyond France at European level: ATELIS, a French CI project of the business school ESCEM, associates a university research center CRRM, the ACFCI, the CCI of Touraine, a consultancy Intelleco, the CIGREF, plus other partners in France, China, and Indonesia. ATELIS is directed by Pierre Larrat. In March 2008, ATELIS is organizing the second edition of a European CI colloquium, in partnership with the Economics and Management Institute of Lisbon, so as to further deepen the CI-related issues at a European level.

Established researchers in CI include Robert Paturel from the University of Sud who was Larivet's PhD research director. He researches into CI within the

framework of strategic management and entrepreneurship, co-authoring notably with Jean-Louis Levet. Humbert Lesca as Director of Research at CERAG, The University of Grenoble, leads a group of researchers who have significant publication output. This group is notable for focusing on CI at the company level and they have assisted mostly French companies with implementing environmental scanning and CI systems. At the University of Toulouse, Maryse Salles has been a very active author on CI, notably in the area of decision-support information systems and the specific needs of SMEs. Her fellow Gabriel Colletis, a former scientific adviser at the *Commissariat General du Plan*, is interested in CI and the knowledge economy. Henri Dou is the Director of CRRM (Center Retrospective Research of Marseille) at the University of Aix-Marseille 3 and a contributing academic professor at ESCEM since 2005. He is a member of the CI education reflection group set up in 2004.

A distinctive school of CI thought also exists at what might be called the geopolitical level of Competitive Intelligence. As mentioned under the Government Initiatives section of this paper Christian Harbulot would be an author in this mould. Philippe Baumard, Philippe Clerc, and Jean-Louis Levet are all accomplished authors in CI as well as being players in government initiatives. The geopolitical school of thought may have been the one that has gained most national and international attention but research on company practices, notably in SMEs, and the role of information systems have notable French contributions.

The Outlook for CI in France

By 2007 the government, academic, and CI support organizations initiatives were resulting in an ever-greater awareness and practice of CI in France. This appears likely to continue and even to become a reference point for other countries, as is already the case in francophone North Africa. Additionally, the concept of CI has solidified with previous espionage and patriotic connotations having to compete with more analytical and value creation activities. The distinctive regional intelligence shows every sign of increasing with rising investment and expanded regional scope. This unique mix of government, quasi-government and enterprises is the critical experiment in France. The research and academic community look set to follow, contribute to, and measure this national effort. The result is unknown, but it is not too early to claim a unique French paradigm relative to CI. The accomplishments to-date include:

- A greater awareness of intelligence in decision making for SMEs,
- Stricter practices regarding defensive CI,
- Expanding regional initiatives that provide resources and training,
- A solid CI infrastructure in terms of information dissemination notably between private and public sectors,
- A young and focused cadre of CI experts studying and graduating from post graduate degree programs,

- An emerging research community in CI, striving to establish CI as a relevant and promising research discipline,
- Increasing acceptance of lobbying as a legitimate company activity.

Nevertheless, it has to be acknowledged that these activities arguably come from low bases.

Challenges to Growth

Although resources dedicated to CI are increasing there remains resistance from SMEs. Many are reluctant to follow government-sponsored programs and may only participate because it is funded. Their priorities are often elsewhere. Political interest may wane but there is no sign of this at the present. Even so, government involvement can lead to market distortion, excessive controls, and bureaucracy. Concern has also been expressed as to whether there will be jobs for the multitude of CI graduates that complete their CI Master's Degree Programs. The close association of industrial espionage from some quarters, notably, the use of the expression Intelligence Economique by the DST (Direction of Territorial Surveillance) for defensive CI, has not placed the subject favorably for all publics. While France is by no means isolated in terms of CI expertise, there is a linguistic and cultural positioning that is not always conducive to knowledge transfer. SCIP–France's reluctance to join the international network is a case in hand.

Conclusion

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 national to work collectively, transcending the public and private sectors to analyze 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.

Appendix 1
The Founding Fathers of CI in France
(Source: HRIE website)

Initiators
‣ Philippe CLERC, Director of CI, Innovation, and ICTs at the ACFCI (Assembly of French Chambers of Commerce and Industry)
‣ Bernard ESAMBERT, former CEO of the Financial Company Edmond de Rothschild
‣ Bernard GERARD, former Prefect and former Director of DST (Directorate of Territorial Security)
‣ Robert GUILLAUMOT, President of Alogic
‣ Christian HARBULOT, Director of The Ecole de Guerre Economique (School of Economic Warfare)
‣ Jean-Louis LEVET, Associate Professor at the University of Paris XIII
‣ Henri MARTRE, former President of Aérospatiale and former General Delegate for Armament
‣ Rémy PAUTRAT, former Prefect and former Director of DST (Directorate of Territorial Security)
Contributors
‣ Claude GUEANT, former Prefect, General Secretary at Elysée
‣ Pierre LACOSTE, Admiral, former Director of General Directorate for External Security
‣ Pierre MONGIN, former Prefect and Director of the Prime Minister's cabinet, President of RATP
‣ André VIAU, former Prefect, Director of the Defense Minister's cabinet
‣ Bernard CARAYON, Member of Parliament for the Tarn Region and Mayor of Lavaur

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