Competitive Intelligence and Small Companies: A study of Two Industries

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Abstract

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Competitive intelligence is a relatively new field that has been gaining prominence over the past decade, coinciding with a remarkable increase in firms' adoption of information systems. Competitive intelligence's increased prominence has been noticeable, both in the academic literature and in industry. In simple terms, competitive intelligence is meaningful information that allows you to be aware of your competitive environment. Most academic research into the subject has focused on large corporations while overlooking smaller companies. This study focuses on small companies. Based on a multiple case study, it investigates the prevalence of CI activity among small companies, the sophistication of this activity and the attitudes that owners hold towards the subject. It identifies several factors that may account for shaping CI activity, including the industry, the presence of networks of friends among competitors, and general attitudes towards competition.

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I would like to deeply thank all who have contributed to the thesis.

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Table of Content

List of Tables

List of Figures

1 Introduction

Competitive Intelligence (CI) is a relatively new and underdeveloped field in the management literature. Simply put, CI is meaningful information that allows you to be aware of your competitive environment. One can assume that CI, in one basic form or other, emerged about the same time as trade did. However, it has gained importance among companies over the last fifteen years, and the last decade has witnessed many efforts to formalize CI and provide it with a structure within the company. This growing interest in CI might be attributable to the progressive use of information systems by organizations over the last few years. In a benchmarking study, Lackman, Saban and Lansa (2000) found that 94% of responding market intelligence directors considered technology to be crucial to the success of the CI function in a company.

However, in spite of the fact that CI is being more and more recognized among company managers, it remains poorly studied in the academic literature (Wright, Pickton and Callow, 2002). Porter (1980, p.71-74) recognized the need for a "competitor intelligence system" at companies. In fact, Porter described a CI system that encompasses several processes, ranging from gathering information, to compiling it, cataloguing it, analyzing it and communicating the analysis to the decision makers and strategy formulators in companies.

2 Literature Review

2.1 Competitive Intelligence

The first hurdle that surfaces when attempting to study CI is finding a definition that is generally agreed upon, and which includes the scope of all functions and processes that are implicated in this phenomenon. Prescott and Smith (1995) noted in their survey of practices that most organizations tend to view CI as more or less an extension of the sales and marketing functions, and that the marketing department should have the responsibility of looking over CI activities. Lackman et al. (2000) observed similar results in their own surveys. However, some organizations seem to have developed their CI activities more than the average organization. Breeding (2000), in his case study of CI at Shell Services International Inc. (SSI), mentioned that the company differentiates between several types of intelligence, competitor intelligence being but one type of intelligence, the other types being: customer intelligence that covers existing and potential customers, market intelligence that covers more so macro market issues like trends and tendencies rather than specific customers, technical intelligence that has an internal, rather than external focus on technical competencies, and finally partner intelligence that covers profiles of proposed partners. Moreover, Breeding specified that CI provides information on several aspects of competitors' activities, namely human resource practices, sales, marketing, strategy, and research and development. Wright et al. (2002) differentiated between competitive intelligence and competitor intelligence, with competitive intelligence being any type of intelligence that enhances your competitive standing or competitiveness in your business, while competitor intelligence

being specifically intelligence on your competitors. Thus competitor intelligence is but a subset of the broader competitive intelligence.

Building upon the existing literature, we will consider competitive intelligence to include any type of activity aimed at monitoring competitors, potential and current, including partners and allies, and with this information gathered covering all types of competitor activity, including human resource practices, sales and marketing, R&D and general strategy. Moreover, CI would also cover activities that involve attempts to process the gathered information, analysis of that information, and the means used to store or communicate it. Recommendations on what course of action to take based on the analysis of information is, thus, not a part of CI activities, as it is a component of the managerial decision making process, itself being a matter of separate and intense study in the management literature. The constraints on the definition of competitive intelligence permit us to study the phenomenon while focusing on the aspects that are common to almost all presented definitions of the term.

It is also important to situate competitive intelligence within the field of strategic management. CI inevitably involves scanning of a company's competitive environment, itself being a component of the firm's external environment. In that respect, CI can be considered as a subset of general external environmental scanning. The external environment can cover competitors, customers, technological advances, and the political and social environments, among other sector. Competitive intelligence specifically concentrates on competitors, current and potential. Furthermore, some researchers consider competitive intelligence to be synonymous with competitive analysis (Smith and Prescott, 1987). We argue that competitor analysis is a crucial component of the

competitive intelligence system which includes data gathering, sorting and cleaning, analyzing, and presenting to decision makers. While analyzing information and relating it to other, previously obtained information may be the component that requires the most skills, the importance of the other components of the CI process renders us disinclined to reduce the definition of CI to competitive analysis exclusively. The Figure 2-1 illustrates our interpretation of how competitive intelligence fits within the strategic management literature.

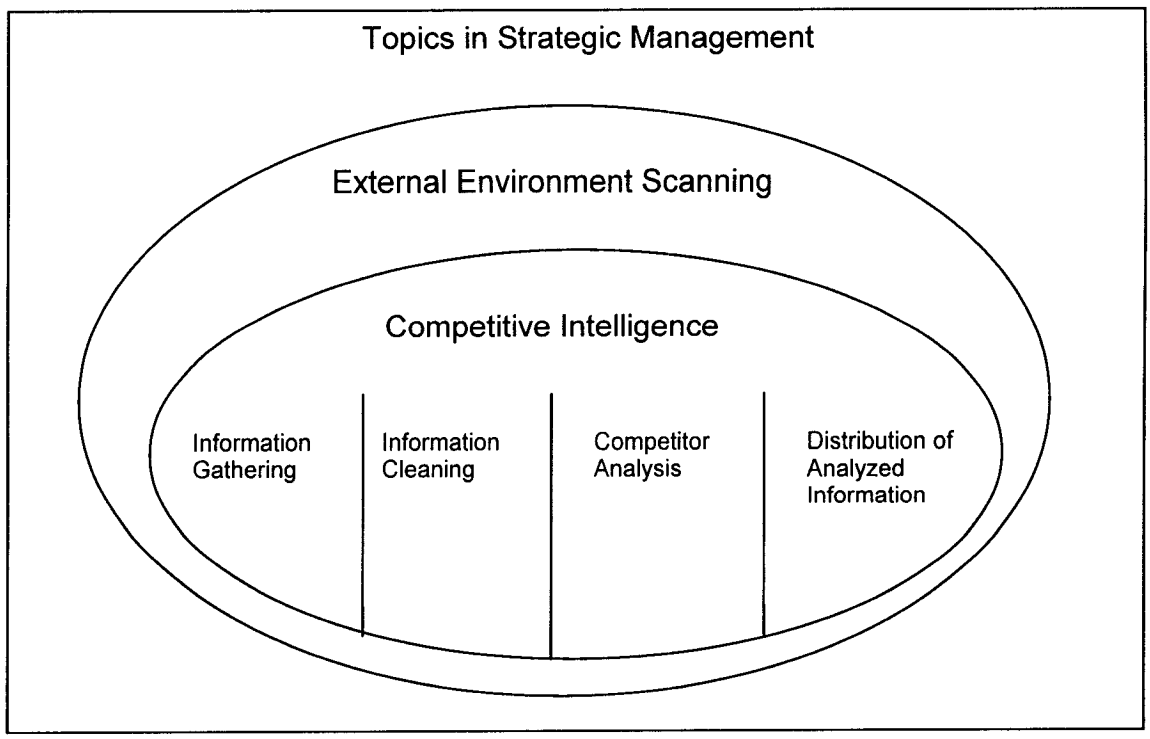

Figure 2-1 - Competitive intelligence within the strategic management literature

We went over the available academic literature, to get an idea of how developed the literature on the subject of competitive intelligence is.

We decided to search for theses and dissertation on the subject of CI. We used ProQuest Dissertations and Theses, and searched using the keywords "competitor intelligence" or "competitive intelligence". The results are shown below in table2-2, listed by year of publication.

Table 2-1 - Competitor or Competitive intelligence on ProQuest Digital Dissertations

Year published	Number of dissertations/theses
1992	2
1993	1
1994	2
1995	0
1996	1
1997	4
1998	3
1999	2
2000	2
2001	2
2002	0
2003	2
2004	1
Total	**22**

Finally, we looked for articles on CI in academic journals. We used ProQuest, using the keywords "competitor intelligence" or "competitive intelligence", while checking only for scholarly, peer reviewed journals. Our search resulted in 538 articles on the subject. However, we went through the articles one by one to differentiate between theoretical work, articles that provide a review on matters relating to CI, and actual empirical studies done on some aspect of CI. The results are summarized in Table 1.4.

Table 2-2 - Distribution of Academic articles on CI

	Case Studies	Surveys/ questionnaires	Experiments	Theoretical Papers	Total
Number of articles	29	35	4	470	538
Percentage	5.4%	6.5%	0.7%	87.3%	100%

A significant number of the empirical studies relate to computer and information systems that may have a use for competitive intelligence, as well as studies of technical subjects such as data mining and web searches. Relatively few empirical studies tackle the subject from a strategic business point of view.

What is noticeable about the last search is the large amount of reviews and theoretical papers on CI that are based on a relatively small amount of empirical studies. In addition, many of the empirical studies were on subjects indirectly related to CI. We did not come across any empirical study that specifically tested propositions related to CI.

2.2 Small Businesses and Competitive Intelligence

Similar to the lack of a consensus of a definition of competitive intelligence, there is a lack of consensus on the definition of a small business. The definition that we will use for our study is the one used by Industry Canada. According to Industry Canada (2005), a small business is one which generates revenues of more than $30,000 and less than $5,000,000, and which employs fewer than 100 employees. In Canada, in June 2004, there were 2.3 million business establishments, 97.7% of which can be classified as small businesses according to Industry Canada's criteria as mentioned above. According to 2003 statistics, small businesses employed around 5 million employees or 49% of the total labor force and contribute to around 43% of Canada's GDP.

Most surveys and studies of competitive intelligence have focused on large corporations and Fortune 500 companies that already have a formal, working CI unit (Prescott and Smith, 1989; Lackman et al., 2000; Tao and Prescott, 2000; Breeding,

2000). Wright, Pickton and Callow (2002), while studying CI practices in the UK, purposefully decided not to include any sole proprietorships or partnerships in their sample, assuming that these companies are less likely to have heard of competitive intelligence. Nevertheless, one would assume that even small companies engage in some type of activity in order to learn more on their competitors. The process by which information gathering takes place, however, is expected to differ from that used by some of the larger corporations.

Wright and Ashill (1998) differentiated between four types of information gathering, ranging from the most formal form of information gathering that is conducted using very methodical practices like hiring employees for the specific role of monitoring competitors, to the least formal that takes place through everyday activities such as reading the newspaper or talking to customers. In fact, the authors suggested informal information gathering methods for the smaller companies.

Hoping to compensate for some of the lack of research into competitive intelligence as it pertains to small companies, we focus our research in this study on the prevalence, importance and sophistication of competitive intelligence activity among small businesses, as well as attempt to identify those variables that are most likely to shape CI activity among these companies.

3 Conceptual Framework

3.1 Company Size and CI

As previously mentioned, available studies on CI are oriented towards the larger corporations, which tend to be those that adopt formal CI programs and possibly have dedicated CI departments or units. A formal CI program requires equipment, staff, staff training and a budget (Prescott and Smith, 1989). The results of the Lackman et al.'s (2000) survey suggests, though not spelled out, that the larger the company in terms of sales, the more employees work at its CI unit. The Wright et al. (2002) study of CI in the United Kingdom suggests, along the same line, that the companies with the greater resources tend to be the ones that can afford to have a dedicated CI unit or department. It is intuitive to believe that, even among the smaller companies, those with the greater resources are those that can afford to provide their CI activities with some form of structure, those resources being both human and financial. We form the following proposition:

Proposition: In small-sized enterprises, the size of a company, measured in terms of the number of employees, will be positively related to the degree of sophistication and structure in CI activities at that company.

Alternatively, one is tempted to believe that the purpose of obtaining competitive intelligence is to help achieve the bottom-line purpose of any business: generating more revenue and increasing profits. CI, in varying ranges of sophistication, requires investing resources, and companies would not be willing to put in these resources were they not

expecting a higher return on that investment. The relationship between a company's revenues and CI activity would be expected to be bidirectional; companies that generate more sales can afford to invest in their CI activity and thus be more structured and sophisticated in their CI activities, and companies that are more sophisticated in their CI activities expect to generate more revenues due to their increased reliance on CI activity. Studies that linked increased CI activity to increased sales are, if available, extremely scarce. Even scarcer are such studies that focused on small companies. Kara, Spillan and DeShields (2005) studied market orientation among small service retailers. Market orientation refers to a company's recognizing the needs of their customers and specifically responding to these needs. The study found a significant link between market intelligence generation and market orientation. Even though market intelligence is focused primarily on customers, it does overlap with competitive intelligence, as market intelligence extends to include information on competitors and how these competitors affect their own customers (Kara et al., 2005). The study also found a significant and positive relationship between market orientation and a company's performance which the researchers measured in terms of sales and profit goals. As mentioned, the relationship between a company's sales and the sophistication of its CI activity is expected to be bidirectional, and we expect a significant relationship between the two. We form our second proposition on the relationship between company size and CI activity:

Proposition: In small-sized enterprises, the size of a company, measured in terms of sales, will be positively related to the degree of structure and sophistication in CI activities at that company

3.2 Information Technology and CI

The link between computer use and competitive intelligence is, as in the case of other previously mentioned links, assumed but not substantiated. Porter (1980) suggested that a library can be used to store information gathered on a company's competitors. At the time, Porter was referring to a library in the classical sense, made up of paper reports and publications and assigned to a librarian who would be responsible for the day-to-day functioning of the library. At the time, most computers were unable to conveniently store the huge amounts of information on various competitors. However, Porter did recommend using computers to catalogue the available data.

The use of databases to electronically store CI information seems to have gradually increased ever since (Prescott and Smith, 1989). More currently, managers of some of the larger companies have recognized the importance of having an electronic library to store and organize information on the competitive environment (Lackman et al., 2000; Breeding 2000). Very little research has been done on the smaller companies' use of computers for CI purposes.

However, Li (1997), while studying marketing information systems in smaller companies noted that these companies are not taking advantage of IT like the larger companies are for CI purposes; while most of the surveyed companies actually held computerized information on their customers and more than half did gather information on their competitors, only about one in five kept computerized versions of data on competitors. The reason for this is unclear, but it is plausible that keeping information on customers electronically is easy, since storing customer's contact information on

spreadsheets is often enough, whereas the storing of information on competitors involves much larger amounts of data including lists of products and prices and special offers, and requires extensive and expensive database systems that may not be available to some of the smaller companies. In addition, managing large database systems requires technical expertise rarely available to small companies.

On the other hand, several studies reported that the public domain is often used as a primary source of information on a company's environment, including competitors (Wright et al., 2002; Lackman et al., 2000; Elenkov, 1997). The Internet, being one component of the public domain, can be a valuable and easily accessed source of information on one's competitors, or one's business environment, in general. For example, competitors' prices for some products can be relatively easy to find on the Internet.

In spite of the wide availability of the Internet, SMEs may not be taking full advantage of the World Wide Web as a source of information on its market or its competitors (Wood, 2001). The reasons for this underutilization are still not fully understood. It may be that research over the Internet may be considered to be time consuming and requiring research skills so that not all of the smaller businesses can afford it. Interestingly, Dholakia and Ksherti (2004) were studying the factors that influenced the adoption of information and communications technologies in general, and the Internet in particular, by small- and medium-sized companies. The study divided the adoption of the Internet into four stages ranging from having no access to the Internet, to having a computer and having access but no company website, to having a simple website, and lastly to selling on the web. The study noted a marginally significant but

positive relationship between the size of the company in terms of employees, and the level of adoption of the Internet.

We expect similarly that the size of the company will have an effect on the use of the Internet for competitive intelligence purposes. In that case, we suggest that even among small businesses to which the Internet is available, those with the greater number of employees will be more likely to use the Internet for CI activities than the smaller companies.

Proposition: In small-sized enterprises, the size of a company, measured in terms of the number of employees, will be positively related to the frequency and extent of use of the Internet for CI purposes.

3.3 Industry and CI

The link between a company's reliance on competitive intelligence and the industry that it operates in is very vague at present. Among the relatively few surveys on competitive intelligence practices, most have focused on the use and the role of CI in companies, on the skills and qualifications of those who are responsible for CI programs, or on the methods and sources of competitive information (Prescott and Smith, 1989; Tao and Prescott, 2000; Lackman et al.; 2000). The Tao and Prescott (2000) study listed the relative percentages of each industry that its sample of Chinese firms belonged to; however, it did not study whether the presence of formal CI activity at a firm was linked to the industry that the firm belongs to. The Li (1997) study broke down its sample into 49 industry categories, and specifically stated how many companies in each category had

a functioning marketing information system. No statistical analysis was made to determine whether companies in particular industries were more likely than those in other industries to use marketing information systems; however, a preliminary examination of the results does suggest that such a relationship may exist. Marketing information systems and competitive intelligence systems share some similarities in their role and functioning, so that an intriguing discovery in one field cannot be generalized to the other, but warrants a similar study in the other field.

Among the studies that we came across, the Wright et al. (2002) was the one that notably made reference to differences in the prevalence of dedicated CI units among companies in its sample. It noted, for example, that standalone, dedicated CI units were more present among services companies than other companies.

The reasons for difference in the rates adoption of dedicated CI units are probably numerous. Possibly, some companies operate in industries that are innately more competitive than others, requiring constant and more thorough monitoring of their environments than others. Among some industries, companies may benefit from resources that they already possess and that prove to be very useful for their CI activity. An example of that might be IT or telecommunications firms that already possess technical skills and computer equipment that are assets that can be used in CI activities. We expect these differences to be evident as we study small enterprises operating in various industries, as well. We form our proposition relating CI activity to the Industry:

Proposition: The sophistication, intensity and importance of CI activity at small-sized companies will vary depending on the industry in which the company operates.

3.4 Environmental Uncertainty and CI

The available literature on uncertainty as it relates to competitive intelligence is, in addition to being scarce, both ambiguous and even contradictory at a first glance. Experiments have shown that people (including managers and decision makers in companies), tend to prefer reducing ambiguity or incalculable uncertainty before making decisions. In the Ellsberg task (1961), in which the author was debating whether uncertainty that can be calculated or viewed as 'risk' prevails, the author devised an experiment in which subjects were asked to gamble based on the according to the following rules:

" Let us suppose that you confront two urns containing red and black balls, from one of which a ball will be drawn at random. To 'bet on Red$_I$' means that you choose to draw from Urn I; and that you will receive a prize, a (say$100) if you draw a red ball, and a smaller amount b (say, $0) if you draw black.

You have the following information. Urn I contains 100 red and black balls, but in a ratio entirely unknown to you; there may be from 0 to 100 red balls. In Urn II, you confirm that there are exactly 50 red and 50 black balls." (Ellsberg, 1961).

Participants were then asked if they preferred betting on Red$_I$ or Black$_I$ and the majority showed no preference, since the odds that red or black would win were the same. However, when participants were asked whether they preferred to bet on Red$_I$ or

Red_{II}, most people chose the box with the known combination over the one with the unknown composition, a phenomenon referred to as ambiguity avoidance, even though in practical terms, the odds of winning (or losing) were actually the same, were the participant to choose from either box.

These conclusions have been corroborated in several replications and variations of the Ellsberg task. Kühberger and Perner (2003) noted that the conclusions from the Ellsberg task hold much to a greater extent in competitive situations than in cooperative ones. The Ellsberg experiment has inspired several other studies on how people deal with ambiguity or uncertainty when processing available information and making decisions. In a related study, Van Dijk and Zeelenberg (2003) noted that people tend to discard ambiguous or incomplete information and, when provided with ambiguous information, take decisions similar to those taken when no information was provided at all.

One common point to those studies is that people favor situations where they have the most available, precise and complete information before they make decisions; thus they strive to reduce incalculable uncertainty. One would expect managers to behave in a similar fashion as they are faced with choices that influence the businesses they are running. Intuitively, one would suppose that, during times of higher environmental uncertainty, managers would push for more information, from their CI activities among other sources, in order to minimize incalculable uncertainty before they take action.

However, the available literature does not always support these assumptions. Some authors, when discussing environmental scanning, differentiate between sources of information that are personal or impersonal on one dimension, and internal(inside) or external(outside) on another dimension (Aguilar, 1967; Elenkov, 1997). Personal sources refer to the information involving direct person to person communication, such as that communicated during phone conversations or informal chats, whereas impersonal source refers to information emanating from reports or acquired during general meetings; i.e., the information was presented to a general audience, not to a particular individual. On the other hand, information originating from the inside refers that which is communicated from sources within the company, such as peers, managers or other employees, whereas information from the outside is communicated from sources lying outside the company, such as customers, managers of competing firms, or government agencies.

Note that the information itself is about the external environment of the firm in any case, but it is the source that communicates the information to managers that is personal/impersonal or internal/external. Information provided by CI activity at a company could be considered as internal. However, in small-sized companies, intelligence may be passed on to managers through personal rather than impersonal means. During periods of uncertainty, one would expect managers to accelerate environmental scanning in general and CI activity in particular, in order to be armed with more information before making decisions, resulting in an increase in information provided to managers from inside, personal and impersonal sources. However, these assumptions are not consistently supported by studies.

Elenkov(1997) studied Bulgarian firms passing through times of strategic uncertainty, and noted that these companies did not scan the environment more frequently during uncertain periods than during normal periods, and that there was a boost in the demand by managers for personal, externally supplied information while there was no increase in the demand for impersonal, internally provided information.

Whether these results can be generalized to North American companies is debatable. Daft, Sormunen and Parks (1988) noted that during times of environmental uncertainty, unlike their Bulgarian counterparts interviewed in the Elenkov (1997) study, American CEOs were likely to scan the environment more frequently. Also unlike Bulgarian managers, American CEOs relied almost equally on internal and external sources of information, and reported an increase in the need for information from both types of sources. However, American CEOs did seem to prefer personal sources of information over impersonal sources, since the CEOs reported a greater increase for the need of the former than the latter sources. The reasons for these differences are not clear, but could be based in cultural disparities or simply disparities in business running between the two regions.

Our study covers North American companies, and based on the existing research, we expect that managers request more frequent environmental scanning during uncertain periods, in order to support their decision making, and that CI activity would increase both in intensity and frequency. We form the following proposition:

Proposition: An increase in environmental uncertainty will be positively related to an increase in CI activity at small sized companies.

3.5 Targets of CI activity

Competitor identification is one of the essential first steps towards competitor analysis. Two relevant theories on competitor identification dominate in the academic literature; the first is market-based theory, and the second, resource based.

Market-based theory is founded on the premise that competitors are thus labeled as long as they operate in the same industry, compete in the same markets, and offer similar products or services (Kotler, Cunningham and Turner, 2001). The theory has been used in the academic literature (Baum and Korn, 1999). The other theory, resource-based theory, considers competition to exist based on the similarity of resources, both tangible and intangible, between two firms. Consider a company that has resources that provide it with a competitive advantage. Then, consider a second company that gained access to resources that match the first's. According to resource-based theory, the first company's competitive position is threatened (Peteraf, 1993), even if the two companies do not yet operate in the same markets.

Each of the two theories has its advantages and shortcomings. For example, market-based theory might be more straight-forward and be able to identify close competitors fairly quickly, when compared to resource-based theory. On the other hand, market-based theory might not be able to identify potential competitors as effectively as resource-based theory.

More recently, researchers appear to combine both theories in their work (Bergen and Peteraf, 2002; Peteraf and Bergen, 2003, Bloodgood and Bauerschmidt, 2002, Chen, 1996), boosting a claim that the two theories are complementary, rather than contradictory. For example, competitors can be represented on a two-dimensional grid that considers both resource similarity and market commonality between the target (firm being studied) and the focal firm (firm doing the study). Accordingly, firms can be classified into several categories such as direct competitors, indirect competitors, potential competitors or simply non-competitors (Bergen and Peteraf, 2002). Competitors that fall into the same category as the focal firm will be viewed as stronger competitors (Porac and Thomas, 1990).

In theory, both market-based and resource-based theories should provide an analyst or decision maker with an extended list of competitors, both actual and potential. In practice, managers appear to be myopic when identifying competitors, considering only those that are direct competitors (Levitt, 1960; Kotler et al., 2001, Porac and Thomas, 1990). This observation appears natural, as managers often possess limited resources and thus cannot analyze every single competitor, much less respond to each (Porter, 1980; Peteraf and Bergen, 2003). In a field study, Clark and Montgomery (1999) noted that managers typically identified only a few competitors, and tended to name the larger players in an industry as competitors.

Drawing on the previous literature, we argue that small and medium enterprises lack the resources to identify many competitors, and instead will focus on those that operate in the same markets and offer very similar products. Also, resource-based theory appears to be oriented towards larger corporations, and we argue that small companies

will consider companies that possess significantly more resources than they do to pose a more serious threat than the smaller companies, simply because the bigger companies are those that can afford to engage in competitive action, such as price reductions. When it comes to information gathering, it may be easier to gather information on the bigger companies, as these are more likely to be mentioned in news reports, government reports and publications. In addition bigger companies may have websites that can easily be consulted. We form our last propositions on the targets of CI activity:

Proposition: In small sized companies, CI activities will be directed towards larger firms.

Proposition: In small sized companies, CI activities will be directed towards firms that offer a similar range of products and services.

Proposition: In small sized companies, CI activities will be directed towards firms that serve the same market, and thus are in close physical proximity.

4 Methodology

4.1 Conceptualization and Operationalization

A set of variables were identified for each proposition, methods of operationalization for these variables were devised, and a set of specific questions that would be used to provide measure of each variable were formed. Those questions relating to different variables were organized together to produce a questionnaire that would be addressed to participating companies.

For example, for the proposition which theorizes the existence of a relationship between the size of a company and the sophistication and structure of its CI activity, the size of the company (independent variable) was determined by asking interviewees how many employees they employ on average throughout a year, and what range of sales they typically generate in a given year, whereas the sophistication and structure of CI activity (dependent variable) were determined by a set of six questions on their CI activity covering the frequency of competitor monitoring, the extent of involvement of staff and employees in CI activity, how focused their CI activity is, how systematic their approach to CI is as opposed to being intuitive, and whether they have invested in any software or reports to help them with their CI activity.

In the case of the proposition which similarly speculates that a relationship exists between a company's size and the extent of its use of the Internet for CI purposes, the size (independent variable) was measured through the same questions used in the previous proposition that asked for the number of employees and sales. The use of the Internet (dependent variable) was measured through four questions that relate to the company's use of the Internet for CI and covering the frequency of use, the perceived

importance of the Internet for CI activity, the skills developed by employees for using the Internet for CI and the amount of information that interviewees typically find on the Internet.

One of the propositions suggests that different industries have different attitudes to CI and rely on CI to different degrees. To test for that proposition the participants were to be divided into different groups depending on which industry they belong to. The items and questions used for the propositions mentioned above would be used to test for inter-group differences. In addition to the questions used for the other propositions, two questions were asked: the first asked for the perceived importance of being aware of the competition's status. The second question asked about the extent that information on competitors influenced the participants decision-making.

The proposition relating CI activity to uncertainty theorizes that an increase in CI activity would be experienced if an increase in environmental uncertainty is experienced as well, without hypothesizing a causal relationship between the two. CI activity was broken down into three separate components, competitor monitoring in general, the use of the Internet for competitor monitoring, and the use of external reports on the competition. Participants were asked to select a level of frequency of activity for the last three years in each of these components. Three choices of frequency were provided to participants: rarely, moderately and frequently. Similarly, environmental uncertainty was broken down into three components: customer uncertainty or concern about having a steady inflow of customers, economical uncertainty or uncertainty caused by a slow or fluctuating economy, and competitor uncertainty or concern that competitors may negatively affect one's business. Also, participants would be asked to select a level of

uncertainty for the past three years about each of these three components. There were five possible selections: Low, medium-low, medium, medium-high, and high.

The last set of propositions speculate that companies would direct the bulk of their CI activity towards larger, nearby companies that offer very similar products. Participants would be asked to think about the competitors that they monitor the most, and without naming them, indicate their most monitored competitors' relative size, be it smaller, same size or larger than they are, their relative location, be it close by, in the same city or in a different city, and the relative range of products or services compared to theirs.

The table in appendix A explains the relationship between the propositions, the variables the method of operationalization and the questions to be asked. Table 4-1 summarizes the propositions and the corresponding measures that are used to test the propositions.

In addition to the questions that were asked testing for specific propositions, additional questions were asked to be able to study the particularities of each company, including the environment that the company operated in, the attitudes of the participants and the like. The complete questionnaire that was used can be found in Appendix B.

Table 4-1 – Propositions and Variables

Proposition	Independent Variable(s)	Dependent Variable(s)
In small companies, the size of a company, measured in terms of the number of employees, will be positively related to the degree of structure in CI activities at that company.	*Number of employees*	*Sophistication in CI activity*
In small companies, the size of a company, measured in terms of sales, will be positively related to the degree of structure in CI activities at that company.	*Yearly sales or revenues*	*Sophistication in CI activity*
In small companies, the size of a company, measured in terms of the number of employees, will be positively related to the degree of structure in using the Internet for CI purposes.	*Number of employees*	*Use of Internet for CI activity*
The intensity and importance of CI activity at small companies will vary depending on the industry in which the small company operates.	*Industry*	*Perceived importance of CI for business* *Sophistication in CI activity*
An increase in environmental uncertainty will be positively related to an increase in CI activity at small companies.	*Environmental uncertainty*	*Intensity of CI activity*
In small and medium-sized companies, CI activities will be directed towards:		
- Larger firms.	*Relative size of target company*	*Proportion of CI activity directed at target company*
– Firms that offer the same range of products.	*Relative range of products of target company*	*Proportion of CI activity directed at target company*
– Firms that are in close proximity.	*Relative location of target company*	*Proportion of CI activity directed at target company*

4.2 Research Design

A field study that involves studying actual small companies and their corresponding CI activity was considered to be most convenient to gather data and test the propositions presented.

One issue to be given consideration was that the subject being studied may be sensitive in nature to some potential participating companies; some companies may be concerned about sharing information about how they monitor their competitors. Thus, it was assumed that participants may respond better in this kind of situation if they get to know the researcher in person so that they may be assured that their information is handled in all confidentiality, rather than if they were to receive a mail questionnaire or survey that they are asked to fill. Also, the relative lack of research into the subject of competitive intelligence among small companies warranted that it would be interesting and useful to learn about the particulars that explain why small companies behave the way they do, and so a multiple case-study was deemed appropriate in this situation (Yin, 2004; Miles and Huberman, 1994; Eisenhardt, 1989). The actual data from the case studies were both quantitative and qualitative in nature (Eisenhardt, 1989; Yin1981). In fact, the propositions to be studied require a combination of quantitative and qualitative data to be addressed.

While quantitative data can normally be easier to analyze, qualitative data usually offers "rich descriptions and explanations of processes" (Miles and Huberman, 1994, p1). However, many issues related to qualitative data persist, among them the labor-and time–intensiveness required for data gathering, coding and analyzing, the risk of researcher bias, and the generalizability of the findings (Miles and Huberman, 1994; McClintock,

Brannon, and Maynard-Moody, 1979). Multiple case studies are in general not meant to be used to be generalized to a population, but instead are meant to test theories (Miles and Huberman, 1994; Yin, 2004). Acknowledging that the results of the study would not be generalizable to beyond the sample that was studied, and bearing in mind that multiple case studies are labor-intensive and time-consuming, we decided to go ahead with this approach, maintaining that multiple case-studies were the most suitable for the situation.

4.3 Sample and Data Collection

The fact that an onsite field research was to take place narrowed down our pool of potential participating companies to the Montreal area. It was decided to study small companies among two non-related industries, to be able to do an across-case comparison (Yin, 1981). Our choice fell on the multimedia industry and the nightlife industry.

Montreal is well-known for its startups in multimedia, which the government at one point helped setting up through grants and other monetary incentives. Montreal is also well known in North America for its nightlife, evident in the presence of a large number of restaurants, pubs, bars, nightclubs, and the like.

The data to be collected was to come from a variety of sources, primarily from interviews with the owners or managers of the participating companies, but also from other sources including direct observation, written material supplied by the companies, and company websites, among others.

Recruitment of participants took place in either of two methods; the first was used primarily for recruiting participants among the multimedia industry, and consisted of cold-calling companies and, after talking to the right person, asking if they would like to

participate in the study. The other method involved contacting companies through references and snowball sampling, and was used primarily to recruit among nightlife companies. A total of 15 companies were studied, 7 in the multimedia industry, and 8 in the nightlife industry.

Companies in the multimedia industry included companies that offered web design services, software tutorials, interactive services, 2D graphics, 3D graphics software, and comprehensive web solutions. The size of multimedia employees ranged from 3 to 9 employees on average. Multimedia companies normally hire employees on a project basis, and so the number of employees at the company normally varies throughout a year. Companies were asked for the average number of employees who worked throughout a given year. Most companies were quite young; the participating companies' time in business ranged from 9 months as a minimum to 72 months as a maximum. On average the companies had been in business for 43.5 months, or just over three years and a half.

Companies in the nightlife industry included supperclubs, nightclubs, lounges, and English and Irish pubs. The size of nightlife companies ranged from 9 employees to 75 employees. The nightlife companies' time in business ranged from 8 months to 112 months (9 years and four months). The participants' average time in business was 51 months, or four years and three months. Table 4-2 provides a summary of the companies that participated.

Table 4-2 - List of participating companies

Company	Industry	Ownership Status	Person Interviewed	Months in Business	Number of Employees	Specialty
A1	Multimedia	Partnership	Partner	9	7	Interactive Advertising
A2	Multimedia	Sole Proprietorship	Owner	33	3	Software Tutorials/ Flash Animation
A3	Multimedia	Sole Proprietorship	Owner	59	8	Comprehensive Web Solutions
A4	Multimedia	Partnership	Partner	42	5	2D Animation/ Storyboarding
A5	Multimedia	Sole Proprietorship	Manager	72	4	Web development/ design
A6	Multimedia	Partnership (recently)	Partner	30	9	3D Graphics software
A7	Multimedia	Partnership	Partner	60	6	Comprehensive Web solutions
B1	Nightlife	Partnership	Partner	29	75	Supper Club
B2	Nightlife	Sole Proprietorship	Owner	27	14	Irish Pub
B3	Nightlife	Partnership	Partner	18	19	Nightclub
B4	Nightlife	Partnership	Manager	21	25	Nightclub
B5	Nightlife	Sole Proprietorship	Owner	140	50	Irish Pub
B6	Nightlife	Partnership	Partner	8	19	Lounge
B7	Nightlife	Partnership	Partner	53	17	Irish Pub
B8	Nightlife	Sole Ownership	Owner	112	9	English Pub

The researcher visited the participating companies at a time that was convenient for them, and held semi-structured interviews that lasted about 45 minutes on average, asking the questions from the questionnaire provided in the appendix. Sometimes, additional questions that seemed appropriate were asked to further understanding of the company's situation. The data collection was done over a period of three months, from mid-November 2004 to mid-February 2005. The persons who were interviewed were owners, part-owners, or managers of the participating companies.

4.4 Validity and Reliability

The interviews were transcribed in a verbatim manner, and a sample of transcriptions was coded early in the data gathering process. The coding relied on a quantification strategy, as performed by Van de Ven and Poole (1990), and as presented by Langley (1999) as an alternative coding strategy that allows researchers to classify and reduce large amounts of qualitative data to quantitative categories, allowing for statistical analysis of the data. The coding key evolved over the course of the research, and was changed several times to become as precise as possible. For each of the questions pertaining to the propositions that relate company size or industry to CI activity, a score ranging from 0 to 2 was given with that score reflecting a magnitude or frequency or level. For example, a 0 would indicate a low level, frequency or magnitude, a 1 a moderate frequency or magnitude, and a 2 a high frequency or magnitude. The following extracts from the coding key illustrate the point. Note that the participants were not asked to circle or choose one of the possible three scores. The questions were open ended, and it was the coder who, while performing the analysis, would select what score to give on each of the questions, based on the coding key.

2. Do you regularly update yourself on the activities of your competitors? If yes, how often?

    0- Less than once every two weeks /ad-hoc/infrequently
    1- Once every two weeks → once a week
    2- More than once a week/ continuously/ always aware

3. Do you follow some systematic way of monitoring the competition?

    0- Not at all/ very ad-hoc/ very passive monitoring.
    1- Basic structure in CI activities/ mostly intuitive.
    2- Sophisticated structure in CI/ mostly systematic.

4. When updating yourself on the activities of competitors, do you know beforehand what specific information about them it is you would like to know?

    0- No/ non-specific
    1- General checklist (Covering general product descriptions, prices, location, events…)
    2- Specific checklist (covering general checklist as above + including information to analyze competitors' business, to analyze competitors' employees, competitors' products)

The complete coding key used for all the questions and propositions is presented in full detail in Appendix C.

In addition to the information gathered through the interviews, the researcher used corroborative triangulation using different types of data sources (Eisenhardt, 1989) to check the face validity of the information presented in the interviews. The fact that the interviews were done at the companies' locations allowed the researcher to take note of some direct, onsite observations, as well as look at some internal documents whenever these were made available to the researchers. The researcher also looked at participants'

websites, as thirteen of the fifteen respondents had working websites and two were constructing theirs.

Reliability of the coding was tested through the coding and recoding of a sample of transcripts. Coding by one person and recoding by another person is used to test for inter-rater reliability, whereas coding and recoding by the same person, usually done after a lapse of time following the initial coding, is used to test for intra-rater reliability. Three graduate students recoded a transcription each, and the coding was compared to that of the primary researcher, thus testing for inter-rater reliability. In addition, the primary researcher recoded a sample of transcriptions several weeks after the initial coding of these transcriptions, thereby testing for intra-rater reliability. Inter-rater reliability was calculated at .74 and Intra-rater reliability was calculated at .88. Both were deemed acceptable at levels recommended by Miles and Huberman (1994).

Finally, after the data was completely quantified, a set of statistical tests were done on the data to test particular propositions, as presented in the next section.

The quantification strategy was used mainly to test for the propositions, yet the analysis involved additionally a content analysis of the interviews as a method of strengthening the findings, as well as generating new propositions based on the multiple case-studies. The next section covers the analysis in detail.

5 Analysis

The analysis was divided into two stages. As a first stage, the analysis focused on verifying if the data gathered from the cases fit with the propositions that were suggested. To simplify this stage of the analysis, we utilized a data reduction technique based on quantification of the data so that statistical tests could be done on the data (Van de Ven and Poole, 1990; Langley, 1999). The first part of the analysis section explains that approach in further detail.

We also decided to do a further exploration in order to identify factors and variables that may contribute to shaping CI activity. Given the situation, we decided to use a content analysis of the interviews mainly, focusing on quotes and themes that were repeated from one case to another. Using this approach is useful for identifying factors and issues that could not be foreseen while building the conceptual framework for the research study. This stage of the analysis is presented in the second subsection of the analysis section, under the title "Qualitative Content Analysis".

As mentioned, testing for the propositions relied first on a quantification strategy. Given the relatively small sample size, our analysis was restricted to using descriptive statistics, the student's t-test, or testing for correlations among the data. The exclusive use of these was appropriate, given the situation.

5.1 Using Data Reduction and Quantification

5.1.1 Industry and CI

Proposition: The intensity and importance of CI activity at small companies will vary depending on the industry in which the small company operates.

To test for the proposition we checked to see if the two industries scored significantly differently in three areas: General competitive intelligence activity, Internet use for competitive intelligence activities, and the perceived importance of competitive intelligence for their business. Specifically, a student's t-test was done to see if the mean score for each of the two groups in each of these areas was statistically different from that of the other group.

Multimedia companies scored, on average, 2.8 points higher than nightlife companies on general CI activity. Multimedia companies also scored 3.5 points higher than nightlife companies on the use of the Internet for CI purposes. Both differences were statistically significant. However, there was no statistically significant difference among the two groups between the perceived importance of CI activity for their business. The results are summarized below:

Table 5-1 -Group Statistics, t-test for difference in means in score between the two industries

	Industry	N	Mean score	Std. Deviation	t	Sig. (2-tailed)
Score on overall CI activity (on a 12 pt scale)	Multimedia	7	8.43	1.618	4.204	0.001*
	Nightlife	8	5.63	.916		
Score on Internet for CI activity (on an 8 pt scale)	Multimedia	7	6.29	1.380	3.944	0.002*
	Nightlife	8	2.88	1.885		
Score on importance of CI (on a 4 pt scale)	Multimedia	7	2.71	.756	.512	0.617
	Nightlife	8	2.38	1.598		

** Statistically significant at 95% level*

The next tables summarize the frequency distributions of scores on the three previously mentioned measures, organized by industry.

Table 5-2 -Frequency distribution of scores on overall CI activity – Multimedia industry

	Score (on 12-point scale)	Frequency	Valid Percent
	6	1	14.3%
	7	1	14.3%
	8	1	14.3%
	9	3	42.9%
	11	1	14.3%
Total		7	100.0%

Table 5-3 - Frequency distribution of scores on overall CI activity – Nightlife industry

	Score (on 12-point scale)	Frequency	Valid Percent
	4	1	12.5%
	5	2	25.0%
	6	4	50.0%
	7	1	12.5%
Total		8	100.0%

Table 5-4 - Frequency distribution of scores on use of Internet for CI activity – Multimedia industry

	Score (on 8-point scale)	Frequency	Valid Percent
	4	1	14.3%
	5	1	14.3%
	6	1	14.3%
	7	3	42.9%
	8	1	14.3%
Total		7	100.0%

Table 5-5 - Frequency distribution of scores on use of Internet for CI activity – Nightlife industry

	Score (on 8-point scale)	Frequency	Valid Percent
	0	1	12.5%
	1	1	12.5%
	2	1	12.5%
	3	2	25.0%
	4	2	25.0%
	6	1	12.5%
Total		8	100.0%

Table 5-6 - Frequency distribution of scores on perceived importance of CI – Multimedia industry

	Score (on 4-point scale)	Frequency	Valid Percent
	2	3	42.9%
	3	3	42.9%
	4	1	14.3%
Total		7	100.0%

Table 5-7 - Frequency distribution of scores on perceived importance of CI – Nightlife industry

	Score (on 4-point scale)	Frequency	Valid Percent
	0	2	25.0%
	2	1	12.5%
	3	3	37.5%
	4	2	25.0%
Total		8	100.0

5.1.2 Targets of CI activity

Proposition: In small companies, CI activities will be directed towards:

– Larger firms.

– Firms that offer the same range of products.

– Firms that are in close proximity

To test for the three sub-propositions, we tested the responses that participants gave on questions 15, 16 and 17 respectively, which asked about the characteristics of the competitor that the participants monitored most closely. The sample was divided according to which industry it belonged to first. There are four possible responses for each question, ranging from 0 to 3, in increasing order, with the exception of 3, which denotes a nonspecific or varied response. Thus it was considered to be adequate to check for the mean response on each question, while removing any "3" values from the sample.

On question 15, which asks about the size of the competitor that is most monitored by participants, the answer that would support the proposition is "2" or larger firms. Two firms among the multimedia participants provided answers that could be classified as "3" and were dropped from this part of the analysis. A one-sample t-test was done on both industries, to see if the mean response was different from 2. Results appear to support the sub-proposition in the case of multimedia companies, but not nightlife companies. The mean for multimedia companies was 1.80, and for nightlife companies 1.375, significantly different from 2, as shown below.

Table 5-8 - One-Sample Statistics, test value = 2

	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Multimedia: Competitor Size	5	1.8000	.44721	-1.000	.374
Nightlife: Competitor Size	8	1.3750	.51755	-3.416	.011*

** Statistically significant at 95% level*

The following table summarizes the frequency distributions of the reported size of the most monitored competitors relative to the research participants' size. As can be noticed, none of the participants reported looking at smaller competitors frequently. Most answers varied between competitors that were approximately the same size, or larger.

Table 5-9 - Frequency distribution of size of competitors that are most monitored

	Relative size	Frequency	Valid Percent
	Smaller	0	0%
	Same Size	6	40.0%
	Larger	7	46.7%
	Undetermined/ Varied	2	13.3%
Total		15	100.0%

Similarly for the second sub-proposition, the ideal response on question 16 supporting the proposition would be "1", or the same range of products. A one-sample t-test was done to check if the mean response was different from "1" for both industries. The mean response for multimedia companies was 1.16, and that of nightlife companies was 1.00. The results support the sub-proposition that companies tend to direct their CI activity towards companies offering a similar range of products.

Table 5-10 - One-Sample Statistics, test value = 1

	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Multimedia: Competitor Products	6	1.1667	.75277	.542	.611
Nightlife: Competitor Products	7	1.0000	.57735	.000	1.000

** Statistically significant at 95% level*

Similarly like was done for the relative size, the following table summarizes the frequency distributions of the reported range of products and services offered by the most monitored competitors, relative to the range of products offered by the participants. The majority (53.3%) reported the competitors monitored most closely to offer a similar range of products and services.

Table 5-11 - Frequency distribution of range of products of competitors that are most monitored

	Relative range of products	Frequency	Valid Percent
	Smaller range	2	13.3%
	Same range	8	53.3%
	Larger range of products	4	26.7%
	Undetermined/ Varied	1	6.7%
Total		15	100.0%

A slightly different procedure was done to test for the last sub-proposition. The different possible responses for question 17, which asks about the location of the main competitors, are "0" – in the neighborhood, "1" – in the city, but not in the same neighborhood, "2" – In a different city or country, or "3" – for varied or unspecified. The sub-proposition is not very specific as to what close in proximity means, so the so we considered that the response that supported the proposition could be either 0 or 1, i.e. in the same neighborhood or city. For multimedia companies, the mean was 1.2, and for nightlife companies, the mean was 0.375. To test for the proposition, we tested to see if the mean for these two samples was statistically different from 2 or not. If it was, then the proposition would be supported, but if the mean for either sample did not turn out to be significantly different from 2, then the proposition would not be supported for that sample. As the results below show, the mean response for nightlife companies was statistically different from 2, but that of multimedia companies was not. The results offer strong support for the proposition among nightlife companies, but somewhat less among multimedia companies.

Table 5-12 - One-Sample Statistics, test value = 2

	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Multimedia: Competitor Location	5	1.2000	.83666	-2.138	.099
Nightlife: Competitor Location	8	.3750	.51755	-8.881	.000*

** Statistically significant at 95% level*

As in previous cases, a frequency distribution, in combination with means, provides a clearer picture of the answers provided that pertain to the proposition. The

following table provides the frequency distribution of the reported location of the competitors that are monitored most closely, relative to the location of participating companies. 80% of participants reported that their main competitors are located at least within the same city as they are. However, two of the multimedia companies reported main competitors to be located in the United States.

Table 5-13 - Frequency distribution of location of competitors that are most monitored

	Location	Frequency	Valid Percent
	Same neighborhood	6	40.0%
	Same city	6	40.0%
	Other city/country	2	13.3%
	Undetermined/ Varied	1	6.7%
Total		15	100.0%

5.1.3 Uncertainty and CI Activity

Proposition: An increase in environmental uncertainty will be positively related to an increase in CI activity at small companies.

Testing for H4 was done through the tables that were filled out by respondents, having to do with the change in CI activity over a period of three years, ranging from 2002 to 2004, and the change in environmental uncertainty over the same period (See questionnaire in Appendix B). CI activity was broken down into three components; competitor monitoring, Internet use for competitor monitoring, and use of external written material. Environmental uncertainty was broken down into three components as well; customer sector uncertainty, economic uncertainty and competitor sector uncertainty. A cumulative score on CI activity, as well as a cumulative or total score on

environmental uncertainty were calculated by adding up the individual scores on each of the three components for each year.

We tested for correlations among the three areas of CI activity and the three sectors of environmental uncertainty, as well as cumulative CI activity and cumulative environmental activity. The only relationships that were significant at the $p<0.05$ level were the negative correlations between the use of external reports, or written material, and both customer sector and economical sector uncertainty, these apparent correlations possibly being due to random variation, rather than concrete relationships. There was no significant correlation between the use of external reports and competitor sector uncertainty. The results do not support the proposition on uncertainty and CI activity.

Given that the two industries scored differently on several variables, among them the intensity of competitive intelligence activity, we decided that it would be appropriate to look for partial correlations between competitor intelligence activity and uncertainty while controlling for the industry. It seems intuitive to do so, since, for example, to nightclub owners, frequent competitor monitoring may represent a frequency which would be different from a web designer's concept of frequent competitor monitoring. We added a nominal variable to the data indicating whether the data comes from a company in the nightlife industry, or the multimedia industry. We noted that the correlations between total competitive intelligence activity and uncertainty become much more significant. These correlations remained negative. Thus the proposition was not supported by the results.

Table 5-14 - Correlations without controlling for the industry

		Competitor Monitoring	Internet Competitor Monitoring	External Reports Monitoring	Total CI score	Customer Sector Uncertainty	Economic Sector Uncertainty	Competitor Sector Uncertainty	Total Uncertainty
Competitor Monitoring	Pearson Correl.	1							
	Sig. (2-tailed)	.							
	N	44							
Internet Competitor Monitoring	Pearson Correl.	.446(**)	1						
	Sig. (2-tailed)	.002	.						
	N	44	44						
External Reports Monitoring	Pearson Correl.	.262	-.058	1					
	Sig. (2-tailed)	.086	.710	.					
	N	44	44	44					
Total CI score	Pearson Correl.	.818(**)	.664(**)	.591(**)	1				
	Sig. (2-tailed)	.000	.000	.000	.				
	N	44	44	44	44				
Customer Sector Uncertainty	Pearson Correl.	-.081	.179	-.414(**)	-.157	1			
	Sig. (2-tailed)	.602	.245	.005	.310	.			
	N	44	44	44	44	44			
Economic Sector Uncertainty	Pearson Correl.	-.192	-.020	-.379(*)	-.288	.502(**)	1		
	Sig. (2-tailed)	.213	.897	.011	.058	.001	.		
	N	44	44	44	44	44	44		
Competitor Sector Uncertainty	Pearson Correl.	.186	.036	.020	.115	-.010	-.114	1	
	Sig. (2-tailed)	.226	.818	.898	.456	.949	.461	.	
	N	44	44	44	44	44	44	44	
Total Uncertainty	Pearson Correl.	-.057	.095	-.407(**)	-.182	.772(**)	.749(**)	.414(**)	1
	Sig. (2-tailed)	.715	.538	.006	.237	.000	.000	.005	.
	N	44	44	44	44	44	44	44	44

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 5-15 - Partial correlations while controlling for the industry variable

		Competitor Monitoring	Internet Competitor Monitoring	External Reports Monitoring	Total CI score	Customer Sector Uncertainty	Economic Sector Uncertainty	Competitor Sector Uncertainty	Total Uncertainty
Competitor Monitoring	Pearson Correl.	1							
	Sig. (2-tailed)	.							
	DOF	0							
Internet Competitor Monitoring	Pearson Correl.	.469(**)	1						
	Sig. (2-tailed)	.002	.						
	DOF	41	0						
External Reports Monitoring	Pearson Correl.	.279	.0184	1					
	Sig. (2-tailed)	.069	.907	.					
	DOF	41	41	0					
Total CI score	Pearson Correl.	.823(**)	.649(**)	.651(**)	1				
	Sig. (2-tailed)	.000	.000	.000	.				
	DOF	41	41	41	0				
Customer Sector Uncertainty	Pearson Correl.	-.133	-.049	-.397(**)	-.287	1			
	Sig. (2-tailed)	.394	.753	.008	.062	.			
	DOF	41	41	41	41	0			
Economic Sector Uncertainty	Pearson Correl.	-.227	-.202	-.361(*)	-.377(*)	.454(**)	1		
	Sig. (2-tailed)	.143	.194	.017	.013	.002	.		
	DOF	41	41	41	41	41	0		
Competitor Sector Uncertainty	Pearson Correl.	.198	.104	.009	.144	.026	-.095	1	
	Sig. (2-tailed)	.204	.506	.957	.357	.868	.543	.	
	DOF	41	41	41	41	41	41	0	
Total Uncertainty	Pearson Correl.	0.092	-.084	-.389(**)	-.277	.748(**)	.730(**)	.460(**)	1
	Sig. (2-tailed)	.557	.590	.010	.072	.000	.000	.002	.
	DOF	41	41	41	41	41	41	44	0

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

5.1.4 Company Size and CI Activity

Proposition: In small companies, the size of a company, measured in terms of the number of employees, will be positively related to the degree of sophistication and structure in CI activities at that company.

Proposition: In small companies, the size of a company, measured in terms of sales, will be positively related to the degree of sophistication and structure in CI activities at that company.

Proposition: In small companies, the size of a company, measured in terms of the number of employees, will be positively related to the frequency and extent of use of the Internet for CI purposes.

These propositions refer to relationships, and we found that the best method to proceed with was to look for correlations between the different variables, as we did for the proposition relating uncertainty to CI activity. However, a quick inspection of the data suggests that the size of the companies, both in terms of sales and employees, was skewed towards one industry. Multimedia companies had between 3 and 9 employees, and generated sales of levels 1 to 3 on the sales range scale; whereas nightlife companies had between 9 and 75 employees, and generated sales of between levels 3 and 4 on the sales range scale. We did a student's t-test to verify if the difference in size was significant. As the Table 5-16 below shows, multimedia companies had a mean of 6

employees, where as nightlife companies had a mean of 28.5 employees. Also the mean sales range for multimedia companies was 2.14 on a 5 level scale, whereas that of nightlife companies was 3.63. Both differences were statistically significant at the $p<0.05$ level.

As we noted, the size of the participating companies and the score each company had on CI activity were both correlated to the industry in which the companies operated. What we were looking for is whether any correlation exists between a participating company's size and its respective score on CI activity, independent of the correlation with the industry. We decided to look for partial correlations between size and CI score, as well as size and the score on Internet use for CI purposes while controlling for the industry. Often, the correlation between two variables may exist because both are correlated to a third variable. Calculating partial correlations between the two variables excludes the influence of the third variable on the correlation, thus yielding a theoretical correlation between the two initial variables, had the third variable not existed (Kerr, Hall and Kozub; 2002). When calculating for partial correlations, no significant correlations appeared, as shown in the Table 5-17. The propositions relating to the size of the company are not supported.

In addition to testing for these specific correlations, we tested for different correlations as well, including such variables as the age of the company. Most of these correlations did not show any significant results, with the exception of when we isolated nightlife companies and tested for the correlation between the sales and the score on Internet use for CI purposes. As can be seen in Table 5-18, a negative but strong correlation existed between the sales and the score that nightlife companies got on their

use of the Internet for CI purposes. The results suggest that as nightlife companies' size got smaller, they relied more on the Internet. These results disagree with proposition relating the company size to the use of the Internet for CI activity..

Table 5-16 - Participants' average number of employees and sales mean , grouped by industry

	Industry	N	Mean	Std. Deviation	t	Sig. (2-tailed)
# of employees	Multimedia	7	6.00	2.160	-2.624	.021(*)
	Nightlife	8	28.50	22.488		
Sales	Multimedia	7	2.14	.900	-3.980	.002(**)
	Nightlife	8	3.63	.518		

** Difference in means is statistically significant at the 0.01 level (2-tailed).
* Difference in means is statistically significant at the 0.05 level (2-tailed).

Table 5-17 - Correlations while controlling for the industry variable

		Number of employees	Sales	Months in operation	Overall CI score	Internet for CI score
Number of employees	Pearson Correlation	1				
	Sig. (2-tailed)	.				
	DOF	0				
Sales	Pearson Correlation	.3452	1			
	Sig. (2-tailed)	.227	.			
	DOF	12	0			
Months in operation	Pearson Correlation	.094	-.068	1		
	Sig. (2-tailed)	.748	.817	.		
	DOF	12	12	0		
Overall CI score	Pearson Correlation	-.031	.146	.004	1	
	Sig. (2-tailed)	.916	.619	.989	.	
	DOF	12	12	12	0	
Internet for CI score	Pearson Correlation	-.253	-.215	-.243	.010	1
	Sig. (2-tailed)	.382	.460	.403	.974	.
	DOF	12	12	12	12	0

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 5-18 - Correlations for nightlife industry isolated

		Sales of nightlife companies	# of Employees, nightlife companies	Internet for CI score
Sales of nightlife companies	Pearson Correlation	1		
	Sig. (2-tailed)	.		
	N	8		
# of Employees nightlife companies	Pearson Correlation	.534	1	
	Sig. (2-tailed)	.173	.	
	N	8	8	
Internet for CI score	Pearson Correlation	-.736(*)	-.302	1
	Sig. (2-tailed)	.037	.467	.
	N	8	8	8

* Correlation is significant at the 0.05 level (2-tailed).

5.2 Qualitative Content Analysis

As we went through the interviews, we noted that participants exhibited varying attitudes towards CI activity. CI appeared to have varying degrees of prominence among the companies that were interviewed, with those on one extreme that considered CI activity to be crucial to their business, those on the other extreme that viewed CI as a function that should only be given minimal attention, and those companies in the middle that appear to place moderate importance on CI. These attitudes became evident as companies expressed how important it was to be aware of competitor activity, as well as through these companies' description of the amount of effort, creativity and resources that they were willing to put in to learn about their competitors and their competitive environment.

5.2.1 Categorization of Companies

We decided it was appropriate to classify companies into 3 major categories, based on their attitude towards CI. The first category, which we will call CAT1, includes those companies that considered it best to focus on one's own business and not mind the competition, contending that CI is given only minor attention and minimal resources, including time. Companies in the second category, or CAT2, are those that acknowledge the importance of CI, providing their CI activity with a moderate amount of attention and resources. The third category, or CAT3, includes those companies that considered CI to be crucial and/or gave their CI activity a decent amount of attention and resources, often using creative ways to learn more about their competitive environment.

According to the general classification described above, we determined that, among the seven multimedia companies that were interviewed, five could be classified as CAT3, one as CAT2 and one as CAT1. When considering the eight nightlife companies that were interviewed, we noted that one could be placed among CAT3, four among CAT2, and three in CAT1, as noted in figure 5-1.

Some of the companies were fairly easy to classify because their comments and description of CI activity were fairly consistent. Others were more difficult to classify because the description of their CI activity somewhat diverged from the overall attitude that they displayed towards CI. An example of that is an interviewee from the nightlife industry who mentioned that it did not appear to be important to him to be regularly aware of competitors' activity, yet, later on, mentioned that, when hosting an event, he would regularly check with other establishments to see if these might be hosting events too during that same week, in order to coordinate the dates so that no two establishments host events that too close to each other, time wise. We decided to include this establishment among CAT1 rather than CAT2 because we had the overall impression that it tended to view CI activity as a reactive rather than proactive function.

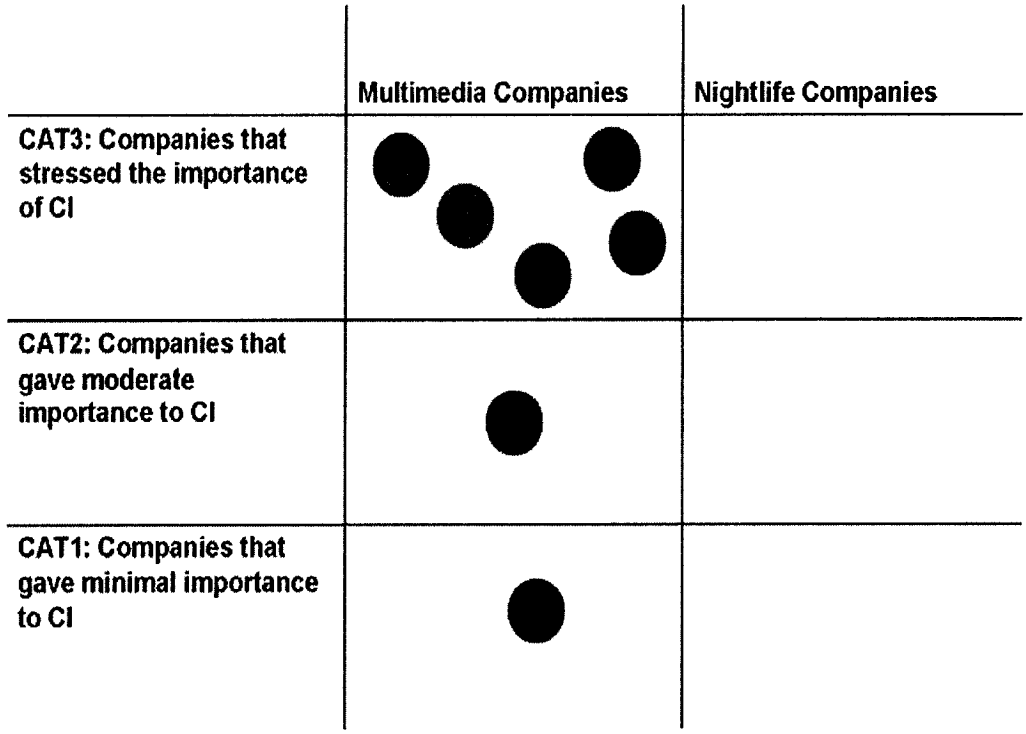

Figure 5-1 Distribution of companies among categories, by industry

The next table provides quotes from interviews that typify the general attitude of participating companies towards CI.

Table 5-19 - Classification of companies

	Multimedia Companies	Nightlife Companies
CAT3: Companies that stressed the importance of CI	"The more we inspected the competition, the more we realized that it is a key element of success" "I am always scanning what's happening, what the trends are. That's all part of finding your right positioning" "It's fundamental (to be aware of your competitors' activity). There's no way around it."	
CAT2: Companies that gave moderate importance to CI	"When you are doing initial research in regard to a new product or something, all you have to do is look at what the competition is doing"	"...we cannot be arrogant or passive, and sit by and say we're the only game in town. There are other games in town. For certain, we make ourselves very aware of

CAT2: Companies that gave moderate importance to CI (cnt'd)		the competition in the community..." "You have to know what's happening in the city. Even if you think you're alone, and you don't care about all the rest. Even if you're not related, you have to know what's happening, because in the end, you're in the nightlife industry.
CAT1: Companies that gave minimal importance to CI	"If I were to say that I actively go out and research our competitors, not so far as just to know their area of activity, Otherwise, it's kind of like going into industrial espionage; we don't really care that much."	"Most of the time, I don't really look at competitors. I do my stuff, and if it works, it works, and if it doesn't, it doesn't" "...I put my energy and I focus in-house, instead of keep looking what's going on out there"

5.2.2 Factors that influence Attitudes towards CI

One subject that was brought up during some interviews was that of leaders and followers in the industry, the leaders being those who set the trends, and the followers being those who copy them. Reference to leaders and followers were significantly much more present in interviews with companies in the nightlife industry than with those in the multimedia industry. This subject is apparently a much more sensitive one to companies in nightlife, probably because nightlife companies are expected to offer a distinctive experience to clients, rather than a standard experience than can be found at any other club or pub. Thus nightlife companies would definitely prefer to be seen as those that are unique, or those that set the trends in the industry that others follow.

Two standpoints that relate to CI and to the leader-follower concept emerged during the interviews. The first, more prevalent view, appeared to associate CI activity with tendency to follow the trends, rather than set them. The other, less prevalent view,

perceived CI activity as necessary in order to outdo your competitors. Companies that maintained the first view appeared to downplay their CI activity and the importance of CI for their business. On the other hand, those that held the second view appear to consistently emphasize the importance of CI. Out of this observation, we form new propositions in regard to CI.

Proposition: Companies that associate CI activity with the state of being a follower in the industry will tend to deemphasize their CI activity.

Proposition: Company that view CI activity as necessary to achieve the status of a leader in the industry will tend to stress the importance of CI.

The next table further explains the leader-follower concept raised during some of the interviews, using excerpts from some of the interviews for illustration.

Table 5-20 - "Leaders and Followers"

	Multimedia Company	**Nightlife Company**
CAT3: Participant overall stressed importance of CI activity	"It's (the industry) very competitive, and I need to beat those guys (competitors). By managing them, I'll know better how to beat them"	"(It's very important to learn about competitors) to make sure they are not doing better than you are. You know, you always have to aim to be the best, the best in service and atmosphere"
CAT2: Participant overall gave moderate importance to CI activity		"What I find is a lot of the competition, without sounding arrogant at all, follows what we have done. We seem to be the ones that stick our neck out first, and they'd follow suit." "We try pretty much to keep ourselves on level with everybody else. I don't see anyone personally being the

CAT2: Participant overall gave moderate importance to CI activity (cnt'd)		leader of the industry." "It's not something you would follow exactly, but if you always base yourself on your competitors, you'll always be a step behind"
CAT1: Participant downplayed the role of CI	"We find a lot of companies within the area of (specialty of company) tend to look at each other too much, and they follow one another. Therefore, what's the point? Would you rather be a follower, or a leader?"	"I find whenever I start looking at competitors, I don't move forward. I just stay there and look at them" "Basically, I try to look at myself as a kind of leader in this industry... I don't want to brag or anything, but I don't feel that there is anything in Montreal for me to look up to" "To be honest with you, there are a lot of club owners in Montreal who watch other clubs to see what they are doing, and they copy them. But that is not my case"

Another interesting issue that emerged while doing the interviews was the perceptions and attitudes that the participants had towards the competition. In a phenomenon apparently unique to their industry, participants in the nightlife industry appeared to benefit from a network of friends among other nightlife establishment owners, something that participants in the multimedia industry lacked, or failed to bring up during the interviews. The presence of these networks benefited them in their business activity including CI activity, as several interviewees mentioned obtaining a significant amount of CI through their friends through casual, evident means such as calling up their fellow publicans or club owners. Those participants that described the networks that they were part of also exhibited less reserve about acknowledging the importance of CI activity, maintaining that it is important for any business within their industry. The reason

may lie in the fact that the presence of these networks of friendship allowed many nightlife establishment owners to obtain most of their required competitive information without the need to resort to discreet or covert means, thus making these owners much more willing to describe their activity in that domain. At the same time, these networks may also concurrently have a curtailing effect on CI activity, because it may not be appropriate to seek excessive information on your friends who happen to be your competitors as well. The bulk of the companies that referred to these networks during the interviews were among those that were classified as those that had moderate views of CI, rather stressing or downplaying its importance. Table 5-21 illustrates some excerpts that refer to these networks (in bold). We propose that the presence of these networks moderates companies' view of CI activity.

Proposition: Having a network of friends among competitors moderates the importance of CI activity to these companies.

Also of interest is the attitude that some companies expressed towards the competition. Two companies in the nightlife business described some competitors whose actions exceeded those that fall within the regular interactions associated with competition, mentioning companies that resented others' success and those that purposefully tried to harm others. One company in the multimedia industry resented the mentality that according to him prevailed in his industry, claiming that competition in his industry was driven by the mentality that there can only be winners or losers in this business, leaving no space for a win-win situation. One factor that is common to these

statements is that they express a negative view of the competition. Another factor is the fact that they all originated from companies that downplayed the significance of CI activity during the interviews. It may well be that the resentment of some of the competitive interactions that take place in their industry pushes these companies to purportedly distance themselves from any industry practices that may have a deceitful connotation to them. In other words, CI to them is simply spying on your competitors, and doing so would place you on par with competitors that resent or purposefully try to harm other businesses. We propose that companies that hold some negative views towards the competition also would tend to downplay CI activity. Table 5-21 shows some excerpts that relate to having some negative views of the competition.

Proposition: Companies that have a negative view of the competition will tend to deemphasize CI activity.

Table 5-21 - Attitude towards the competition
Extracts in italics refer to negative attitudes towards the competition.
Extracts in Bold refer to the existence of a network of friends among competitors.

	Multimedia companies	Nightlife companies
Participant overall stressed importance of CI activity		**"I'm not knocking my competitors, and I wouldn't consider myself to be a competitor of my friend (neighboring pub owner). I wouldn't consider that competition"**
Participant overall gave moderate importance to CI activity		**"They (nightlife owners) may be competition, but we're also pretty good friends. Of course, we realize pretty quickly that we are in competition"** **"We're all in competition... and we're all friends. We all play golf together, I would go to other pubs and enjoy a couple of pints of Guinness and the owners of other pubs would come here."** **"Well, you have to be friends with all of them (competitors), because you need**

Participant overall gave moderate importance to CI activity (cnt'd)		**their help too... they invite me, I invite them; it's like a very close community"** **"We (nightlife owners on the same block) are friendly with each other, and we regularly help one another "**
Participant downplayed the role of CI	*"...whereas the way that I think market strategies or business methods and managing has always been stuff that's disgusting, typical, 50's, American view of kill or be killed."*	*"There are too many people in this business, and when they open, their target is not to work but to kill someone else's business. They open and they tell people that they will hurt that other business so much..."* **"We go out have dinner at another restaurant, we go to other clubs. As long as everyone is helping everybody, it's a good thing"** *"In this business, you may not think you have enemies, but people get jealous of you sometimes... like, people, if you're doing well, won't be happy about it"*

5.2.3 Use of the Internet for CI Purposes

We also performed a more in-depth study of the relationship between the Internet and CI activity. Participating companies utilized the Internet for CI purposes to different extents as well. On a continuous scale, we noted that some companies on one extreme found the Internet to be very irrelevant to their CI activity, while companies on the other extreme found the Internet to be practically their only source of information on competitors and competitor activities. To simplify matters, we are able to differentiate between three levels of Internet usage for CI purposes:

- Companies in Internet Level 1 (IL1) are those that find the Internet to be useful only to a very minor extent, and preferred relying on other methods to learn about competitors, such as through customers, salespeople and contacts.

- Companies in Internet Level 2 (IL2) found the Internet to be an important source of information, and used it significantly in conjunction with other methods such as those described above.
- Companies in Internet Level 3 (IL3) relied heavily and almost exclusively on the Internet for their CI activity.

Based on the definition of these three levels of varied reliance on the Internet as well as the interviews done, we were able to classify the participating companies into each of these three levels. Four of multimedia companies were classified as IL3, and three as IL2. None of the multimedia companies were classified as IL1. Among nightlife companies, four were classified as IL2, and four as IL1. None among nightlife companies were classified as IL3. The classifications are illustrated in Figure 5-2.

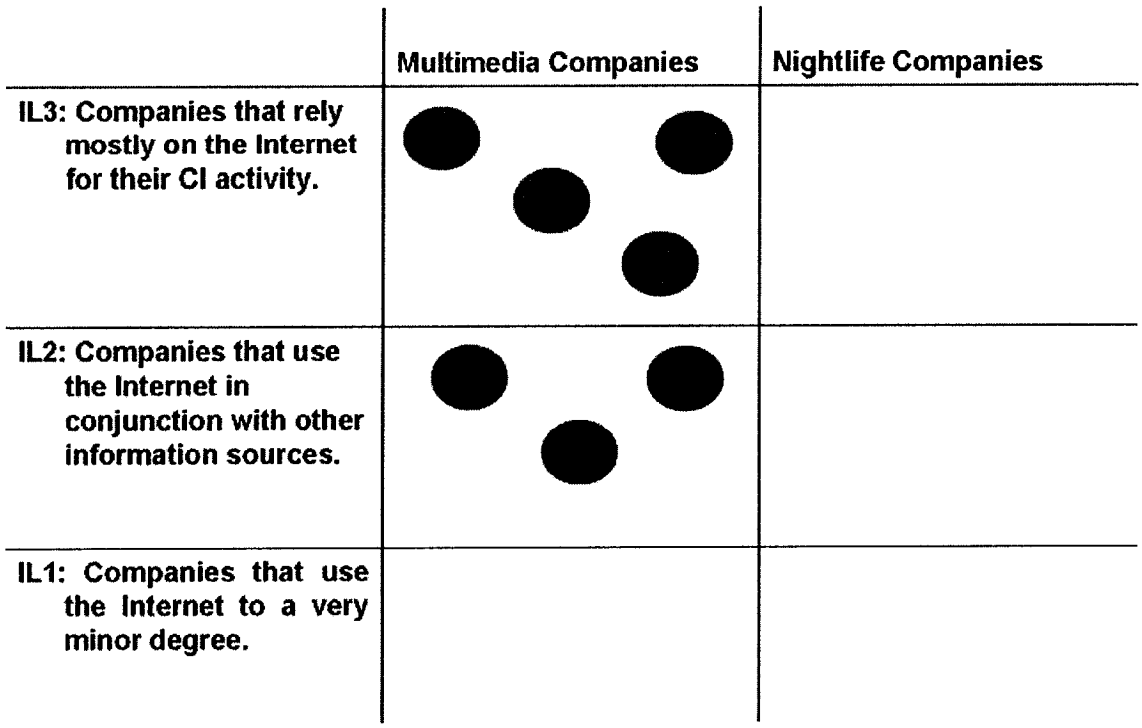

Figure 5-2 Distribution of companies among categories of Internet use, by industry

The Table 5-22 presents some quotations from interviews that characterize companies' use of the Internet for CI purposes:

Table 5-22 - Perceptions and attitudes towards the Benefit of the Internet for CI

	Multimedia Companies	Nightlife Companies
IL3: Companies that rely mostly on the Internet for their CI activity.	"Basically, from a website, you can get a rich profile of the company. You know pretty much what they do; you'd only miss some details. But you learn about a good portion of their company" "Well that (the Internet) is how I found about all of them (competitors)" "Most of the research on competition is done on the web. So if there is a person who is not up there (on the web), and who is working secretly I won't have a clue about his existence. "	
IL2: Companies that use the Internet in conjunction with other information sources.	"(through the Internet) You can find out almost anything about anybody... but you do a lot of personal filtering to survive what may be actually going on within the company"	"Like say if you want to know what they're charging for New Year's, you can learn about that by going to their website, but if you go to their place, they may not tell you if they know you're the owner of another (nightlife company)" "The Internet's something we're interested in. We check on each other, or we let them know we're here"
IL1: Companies that use the Internet to a very minor degree.		"We don't need to go on the Internet to see what our neighbors are doing; it's much easier to walk to our neighbors and see how they are doing..." "I don't do it (use the Internet for learning about competitors) often. None of my staff does it either."

Evidently, some industries are more visible on the Internet than others, and companies in some industries are more open to using the Internet for CI activity than

companies in other industries. Data from the study is consistent with the original propositions raised before data collection

5.2.4 Factors that determine the Targets of CI Activity

Participants were asked which was the characteristic that was most important, when choosing which competitor to monitor closely, consequently to their description of the most monitored competitor(s). Specifically, participants were asked to choose among the size of competitors, the location of competitors, and the range product and services of competitors relative to theirs. Six of the seven multimedia companies (85.7%) mentioned the products and services to be the most important factor, whereas five of the nightlife companies (62.5%) included products and services, thus giving credence to the conclusion that products and services are in fact the most crucial factor. On the other hand, twelve of the fifteen (80%) companies mentioned having a primary competitor that they monitored significantly being located in Montreal.

Yet, the lower citation of the relevance of products and services among nightlife companies may be an indication of the fact that competition among nightlife companies may come not only from similar establishments, but from any supplier of entertainment, including bars, clubs, sporting events, festivals and the like. Many participants in the nightlife industry alluded to these being competitors in their respect. The following are a few quotes taken from interviews referring to the idea:

"I'm in the nightlife business, so anybody in that business is a competitor, whether it's a restaurant, or a club, or a bar, or a tavern"

"Sometimes, I could consider one of my competitors to be a restaurant. Another time, I could consider my competitor to be a club. Next time, my competitor could be an ex-employee here who decided to hold a party at his loft. It's random; I don't really judge a competitor on what they have to offer"

"We kind of look at the macro aspect of competition here, being movies, vacation, travel; anything that one would spend their money on rather than going to (our place)"

"Like the Bell Centre may be considered competition as well because people get beer there, and can eat there. Yet, at the same time, there's a benefit to our place. Same with when the jazz festival is in Montreal or the Grand Prix. You know there are many, many aspects about the downtown environment that we look at"

Based on the interviews, we perceived that the products and services of competitors as well as the location of the competitor were both significantly important. Yet the importance varies depending on the industry. We propose that either the products and services provided by competitors, or the location of competitors will be the most influential factor in determining which competitors to keep an eye on, all depending on the industry.

Proposition: The products and services provided by competitors, as well as the location of competitors are factors that will determine which competitor one's CI activity will target the most.

Proposition: The products and services provided by competitors will take precedence over the location of the competitors, or vice-versa, depending on the industry.

5.2.5 Uncertainty and CI Activity

While testing for the proposition relating environmental uncertainty to increased CI activity, we did not notice a relationship between environmental uncertainty and the

frequency of CI activity. During the interviews, most participants provided some descriptions of how the two were related, and what were the perceived main sources of uncertainty for their businesses.

In specific terms, while matching competitor monitoring frequency to environmental uncertainty magnitude, we found no statistically significant correlation between the two factors. As previously mentioned, the data covered the year that the interview was done, and the previous two years, in case the company had been operating for three years. Yet, several nightlife establishment owners and managers reported an increased interest in knowing how competitors were doing when their own business slowed. Some reported ups and downs in business during the same year, mentioning that being quieter prompts them to check other places, to see if the slowdown is normal and affecting all the industry, or whether is symptomatic of a problem within their own establishment. A few quotes taken from the interviews illustrate this point:

"When you hit a low period, like say exam time for students, you will look more at your competitors to see how things are going for them, just to see if it's only you. So that's the only time I would look, but most of the time, I'd wonder if it was only us, but looking at others, I'd find out that their business has slowed as well."

"...when you see the market is going down, you always look for the reason, to understand what is going on. You're curious to see if it's the same in other places..."

"when you're a bit quieter, you would want to make sure that everybody else is quieter, then that would make sense. And that's what's going on, everybody is quiet. But, if you're quiet and everybody else is busy, then obviously you know there is a problem"

"We will, from time to time, walk into one of our competitors' (place) on a Friday evening knowing if we're busy or not, and seeing if they're busy or not"

In general, nightlife companies perceived environmental uncertainty to be increasing. Places that were more established perceived less change in uncertainty over

the past years than places that were new. Evidently, nightlife companies attract a lot of interest when they open, being described as "the place to be" by one of the respondents. But over the course of a year or so, gradually lose some of their appeal to customers. Also many participants reported a definite increase in competition, with more and more places opening. In addition, several social, economic and political factors appeared to increase environmental uncertainty for nightlife owners who cited several reasons for that increase, including the US dollar losing some of its value relative to the Canadian making coming to Montreal less appealing to Americans, the absence of hockey season which typically draws crowds to bars and pubs, the upcoming smoking ban in pubs and clubs in Montreal, the hassle of flying after September 11th 2001, making it less appealing for tourists to come to Montreal, the occasionally tense political climate between the USA and Canada, and the increasing cost of living in Montreal without there being a comparable increase in salaries, thus leaving local clients with less disposable income.

6 Discussion

The study began by testing some formulated propositions. The results are summarized in Table 6-1, below:

Table 6-1 – Summary of proposition results

Proposition	Conclusion
In small companies, the size of a company, measured in terms of the number of employees, will be positively related to the degree of sophistication and structure in CI activities at that company.	***Not supported***
In small companies, the size of a company, measured in terms of sales, will be positively related to the degree of sophistication and structure in CI activities at that company.	***Not Supported***
In small companies, the size of a company, measured in terms of the number of employees, will be positively related to the extent and frequency of use of the Internet for CI purposes.	***Not Supported***
The intensity and importance of CI activity at small companies will vary depending on the industry in which the small company operates.	***Supported***
An increase in environmental uncertainty will be positively related to an increase in CI activity at small companies.	***Mixed Supported***
In small and medium-sized companies, CI activities will be directed towards:	
- Larger firms.	***Partly Supported***
– Firms that offer the same range of products.	***Supported***
– Firms that are in close proximity.	***Moderate Support***

In addition, the following propositions were made:

Proposition 1: *Companies that associate CI activity with the state of being a follower in the industry will tend to deemphasize their CI activity.*

Proposition 2: *Company that view CI activity as necessary to achieve the status of a leader in the industry will tend to stress the importance of CI.*

Proposition 3: *Having a network of friends among competitors moderates the importance of CI activity to these companies.*

Proposition 4: *Companies that have a negative view of the competition will tend to deemphasize CI activity.*

Proposition 5: *The products and services provided by competitors, as well as the location of competitors are those factors that will determine which competitor one's CI activity will target the most.*

Proposition 6: *The products and services provided by competitors will take precedence over the location of the competitors, or vice-versa, depending on the industry.*

The research has generated some results that are expected, while some others are a little surprising. The fact that the data collection was performed through interviews and

subsequent transcriptions provided the researchers with a rich amount of data that helps in the interpretation of the results.

6.1 Interpretation of Results

A preliminary analysis of the data suggested that there was a significant difference in the reliance on CI activity between the two industries. Therefore, the researchers decided to control for the industry when testing for most of the propositions.

The result of the proposition that suggested a notable difference in CI activity among industries is hardly surprising. Companies in the nightlife industry tended to downplay the prominence of CI activities in the running of their business. On the other hand, multimedia companies, with exceptions, were less reserved in describing their CI activities. In numerical terms, multimedia companies scored on average 2.5 points higher than nightlife companies on a twelve-point scale, in terms of their structure in CI activities. Multimedia companies also scored, on average, 3.4 points higher than nightlife companies on the use of the Internet for CI purposes. The difference can be partially explained by the fact that multimedia companies can get most of the information on competitors through the Internet, which is easily accessible, and very convenient to use. It is accessible at all times, and is non-intrusive. Multimedia companies reported using other sources of information including their own sales force and their clients, but the Internet is their primary source of information on competitors. Also, multimedia companies can use the Internet in ways that extend beyond simply going to their competitors' websites and looking at their specialty, portfolio and news. Some respondents reported monitoring their statistics relative to their competitors, for example

search engine ranking. Another factor that favors the use of the Internet by multimedia companies is the Internet skills available within the companies. As one respondent put it: "You ask me about Internet skills. Well, the Internet is my business; of course I have Internet skills."

On the other hand, nightlife companies, in general and with some exceptions, reportedly could not make as much use of the Internet as multimedia companies. While some reported visiting the websites of nightclubs that are in other countries, for inspiration or otherwise, most didn't find the Internet as useful, stating several reasons. Nightclubs do not update their websites frequently, so one could not find out about scheduled events by visiting websites. Also, it is illegal in Quebec to advertise alcohol and alcohol specials, including on one's website. Nightlife company owners and managers revealed that most information on competitors they receive is through word of mouth or by visiting other places. In essence, they lack the convenience of using the Internet.

Another factor that appeared to be of consequence was attitude. The issue of leader-follower appeared almost every time during interviews with nightlife company owners, but only once among multimedia companies. Among nightlife companies, following other's trends is to be avoided, and any activity aimed at learning about competitors, irrespective of the type of information sought, is de-emphasized, to avoid being interpreted as a sign of being a follower in the business, rather than a leader. Respondents reported they had no one to look up to. Multimedia media also had less reserve on the issue. One respondent plainly said: "There is a huge amount of competition in this business, and I want to be the best. If I want to best the best, I simply

need to be aware of what I am up against at all times." While going through the interviews, the researcher had the impression that multimedia companies viewed competitor monitoring as a sign of strength and being in control of one's external environment, whereas nightlife companies were concerned that competitor monitoring might be interpreted as a sign of weakness. One should consider whether similar results could be noticed if other industries were to be studied.

The fact that the viewpoint associating being a follower to CI activity was significantly more prevalent among nightlife companies than multimedia companies drives one to speculate whether certain industries are likely to display such an attitude more than others. If companies in a particular industry tend to be significantly concerned about their image, striving to be seen as leading trend-setters as opposed to imitating followers, then these companies may very well hold similar attitudes, downplaying their CI activity. One may expect similar attitudes coming from companies from such industries as the fashion industry, or luxury sports car manufacturers.

Still another factor that might come into play could be the fact that multimedia companies have few personal relationships with their competitors, whereas nightlife companies know their competitors very well, and there is often an element of friendship between them. In fact, on two separate occasions, the researcher noticed that the owners of other nightlife establishments were present at the establishments of two of the participants. This personal relationship may act as a reason to play down one's competitor monitoring behavior. Keeping tabs on friends' businesses, even if these are competitors as well, may be an issue that some would avoid, or at least be reluctant to describe.

The proposition on the targets of CI activity, when broken down, suggests that companies would tend to monitor mostly competitors that are larger than they are, that offer more or less the same range of products, and that are in close proximity. Multimedia companies tended to look more at larger companies, whereas nightlife companies looked both at companies their own size and larger. The difference may be explained partly by the fact that multimedia companies were fairly small. Practically all employed, on average throughout the year, fewer than ten employees. As for nightlife companies, their size was more varied than multimedia companies. The largest had 75 employees, the smallest 9. However, unlike multimedia companies that can actually grow to employ hundreds, even thousands of employees as in the case of the large corporations, nightlife companies tend to be quite small. Most nightlife companies tend to have well under a hundred employees. A multimedia company may identify as its competitor a company that is many times its size. On the other hand, nightlife companies tend to be quite comparable in size, especially in terms of client capacity, which is the factor that most participants considered when discussing their size compared to competitors.

When it comes to products and services offered, both multimedia and nightlife companies appeared to monitor mostly companies that offer a similar range of products, as these were the companies that were most like them, and thus were direct competitors.

Finally, when the proximity of the most monitored competitors is concerned, nightlife companies monitored mostly local competitors, but multimedia companies looked at both local and out-of-town competitors. Even though it was beyond the scope of the data gathered, it appears that, among multimedia companies, those companies that

offered services that are very available locally, such as web or interactive services, appeared to look more at local competitors, whereas those companies that offered a specialty service tended to look more at competitors that are out of town, or in another country.

One of the propositions suggested that as environmental uncertainty increases, so would CI activity. The data gathered and statistically analyzed did not support the proposition. Some previous studies have failed to support such a relationship as well (Elenkov, 1997). In fact, the present study suggested a negative correlation between the use of reports of external sources and general environmental uncertainty, mostly customer sector and economic sector uncertainty.

The manner in which perceived environmental uncertainty was measured may have been too broad; participants were asked to provide a score on perceived environmental uncertainty, broken down into components, for each one of the previous three years. Several respondents in the nightlife business pointed out to the presence of seasonality, or periodicity that accounted for several highs and lows in business throughout a single year. In fact these periods of highs and lows could be pinpointed to as much as specific weekends throughout the year. For example, for businesses around Crescent Street in Montreal, Grand Prix weekend, which occurs in June, is definitely a time of increased business, whereas the time between New Year and mid March is expected to be a time of slower business. The same applies to nightclubs, as those that cater to university students experience slower business during exam periods and increased business immediately after. Participants suggested that these periods are mostly known and occur consistently year after year.

However, unusually slow business during periods that are normally busy would cause owners to start asking questions. It is during such times that nightlife company owners would go on to check other places, to see if the unusually slow business is limited to their business or if it extends to others in the neighborhood.

Some multimedia companies spoke of a certain seasonality in business as well, suggesting that summer was a busier time for them, or that winter was, depending on the company. One respondent said that uncertainty is simply when the company's pipeline of contracts becomes empty for two or three months. That is the time when multimedia companies may start observing competitors to see if they are landing any contracts, or to check their hiring patterns. They may also notice an increase in employees at competitors' companies applying to their own, suggesting present or imminent layoffs.

An issue relating to uncertainty that was discussed in the conceptual foundation section is the classification of the information presented to managers according to whether it is internal or external, personal or impersonal. The study did not delve into a deep analysis of the issue and how it relates to CI at small companies. However, it is an interesting concept that is worth contemplating; especially as it relates to the Internet. The studies that researched these types of information were done in organizational environments where the Internet either did not exist, or where the use of the Internet was minimal (Aguilar, 1967; Daft, Sormunen and Parks, 1988; Elenkov, 1997). Information obtained on the Internet becomes harder to classify as to whether it is personal or impersonal; on the one hand, the information is usually public and intended for everyone, yet the use of certain software, including agents, allows for a "personal" presentation of information. This software "selects" which information to present to managers, and

presents it in a manner that limits the need to sift trough the information and clean it on the manager's part. Yet, one could argue that "personal" information is defined as that provided by one person and intended for another person. In this situation, information obtained from the Internet cannot be considered of a "personal" nature unless an employee obtains the information through the Internet, cleans it and sends it to his or her manager.

It is also worth considering whether information obtained through the Internet can be classified as "external" or "internal" in nature. Again, it would seem to depend on the manner in which it was presented to managers. If managers were to browse the Internet themselves, the information may be seen to be more so "external" rather than internal in nature, because the information is obtained from distant servers that are not within the company's surroundings. On the other hand, if an employee were to contribute to the presentation of information obtained, by excluding information that are deemed irrelevant, for example, then the information may be seen as having an "internal" component to it.

The proposition on company size and CI activity suggest a positive relationship between company size and the reliance on CI, as well as the use of the Internet for CI, without implying any causal relationship. Size was based on either the number of employees at the company, or the sales or revenues generated by the company. The study did not find any statistically significant relationship between those factors, even after controlling for the industry, as we already know that multimedia companies rely more on CI than nightlife companies do. The small sample size is definitely a limiting factor, but the possibility that no relationship actually exists is just as real.

The only strange finding is a relationship that appeared among nightlife companies but not multimedia companies; the study noticed a possible negative, but strong and statistically significant relationship between the sales and the use of the Internet for CI purposes. In plain English, as their sales increased, it appears that nightlife companies relied less on the Internet as a source of information on competitors. We are unable to interpret this strange finding. If any past or future studies discover a similar pattern, then a more in-depth study of the matter may be done.

6.2 Limitations

The study had several limitations that must be listed in order to be able present a more thorough interpretation of the results. To begin, as is almost always with multiple case studies, the sample size was fairly small, consisting of fifteen cases. While some patterns did appear even when taking only fifteen companies into consideration, having a larger sample size could have possibly provided a more concrete support to the current results, or, alternatively, produced new results. On the other hand, multiple case studies provide a very large and rich amount of background information that proves very helpful in interpreting the results. A survey probably would have provided a larger sample size, but the information collected would not be as rich.

Also, case studies normally are not intended to generalize the results to different populations than the ones being studied, as mentioned by Yin (2004). In that respect, the inclusion of multimedia companies may have possibly had a significant effect on some of the findings. For example, multimedia companies are known to use the Internet extensively, and so, if the sample did not include multimedia companies, but companies

from an industry that is not as reliant on the Internet, that may have produced a different outcome in regard to some of the propositions. Also, the fact that all interviews were done in Montreal may restrict the possibility of generalizing the findings to beyond the city.

A factor that may also have come into play is the fact that data was gathered through interviews, and so the information provided is subjective, and relies extensively on the perception and memory of participants. The researcher attempted to counter the effect of that factor by applying corroborative triangulation in the study.

In addition, an obvious possible limitation is the fact that the subject being studied is sensitive in nature, and is a subject that not everyone is comfortable discussing. The selection of nightlife company participants was done mostly through snowball sampling, as mentioned before, with the person who provided the reference being a possible competitor. The fact that the researchers were referred to companies by competitors may had some participants feel somewhat uneasy, in spite of all assurances being given that all the information provided by the participants will be treated with confidentiality, and that no references to names of participating businesses would be included in the thesis or any subsequent reports.

6.3 Future Research

The results provide some possibilities for future study. In addition, some unusual patterns that were not specifically being studied but which came up during the study may be looked into further. We have come up with a potential list of issues to be studied. We also suggest some modifications to the methods used in this current study.

The first was mentioned earlier; studying two industries that are not heavily reliant on the Internet, and notice any similarities and differences in findings. A possibility might be to study two industries within the same main domain like manufacturing or within providers of services. As it appears in the study, an industry's reliance on the Internet may be significantly correlated to how much emphasis on CI activities companies may be able to put. It could well be that the reliance on the Internet is a significant variable itself when studying competitive intelligence.

Another possibility is to study uncertainty and CI activity over a shorter period of time, instead of amalgamating the pattern into a single year. Accounting for variations over a shorter period of time may allow for greater and better scrutiny of the issue. Such a project may include not only participants' observations but direct observations by the researchers as well, a factor that may allow for consistency when evaluating the frequency of CI activity, for example. It is not unexpected that one participant may label checking on competitors once a week as frequent competitor monitoring, whereas another participant may consider weekly competitor monitoring to be not frequent enough.

One phenomenon that was not intentionally studied, but that emerged, was the lack of any significant relationship between the age of the company and its sales generated. The older companies did not necessarily generate more revenues than did their younger counterparts, and it may be interesting to compare that result with other studies that have found a similar lack of relationship or, alternatively, found a significant relationship between the two variables.

An ambitious project would be to study the relationship between overall competition in an industry and the score that an industry would get on CI activity. One might be tempted to look into whether industries that are more competitive or more crowded or concentrated also happen to rely more on CI than are companies that are less competitive or concentrated. Additional measures would inevitably need to be developed in order to define and devise a method to quantify industry competitiveness. Of course, such a design would need to go beyond multiple case-studies, and would certainly require a large sample.

One issue occurred to the researchers while completing the study; it has to do with the relationship between the perceptions of participants, and the actual situation. When asked about whether they frequently monitored competitors, one participant answered negatively, but as the interview proceeded, the participant said:" You know, now, as you ask me more and more questions, I notice that I am doing that (looking up information on competitors) more frequently than I think I am." The situation becomes even more of importance when participants are asked to rate their competitor monitoring behavior or environmental uncertainty levels in retrospect, referring back to a year or two in the past. It would be interesting to study the relationship between participants' impressions or perceptions on matters of CI and the actual circumstances. Such a project calls for more extensive field observations coupled with participants' observations and perceptions.

6.4 Conclusion

The research is one of the first attempts to study competitive intelligence specifically among small companies. On an academic level, it furthers our understanding

of the differences between companies in various industries. Each industry functions according to a different business model, and that model affects all aspects of day-to-day business running, including how companies view competitors and interact with them continuously. The thesis, being based on a design that is quantitative as well as qualitative in nature, sheds light on some of those differences in a manner that extends beyond simply informing about small companies' behavior to include the reasons and rationales behind that behavior; i.e. the study covers not only "how" companies behave, but also "why" they behave as they do. In addition, business research on companies in the nightlife industry is quite scarce, especially from a strategic management perspective.

From a practical perspective, the thesis may aid in the companies' own understanding of their business and their industry. Several participating companies displayed interest in receiving a report on the results of the study.

Finally, competitive intelligence is a matter that every single company functioning in a free market economy has to cope with, at one point or the other. Hopefully one of the impacts of this study is to alleviate any concerns or misconceptions that people might have of this issue, and to help further the issue of competitive intelligence into mainstream academic research.

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Appendices

A. Operationalization of Proposition Table

Proposition	Variables	Method of operationalization	Question
In small-sized enterprises, the size of a company, measured in terms of the number of employees, will be positively related to the degree of structure in CI activities at that company. ***In small-sized enterprises, the size of a company, measured in terms of sales, will be positively related to the degree of structure in CI activities at that company*** ***(Prescott and Smith, 1989; Lackman et al., 2000; Wright et al. 2002).***	Independent: • Number of employees Dependent: • Structure in CI activities Independent: • Yearly Sales Dependent: • Structure in CI activities	1. Continuous vs. ad-hoc CI 2. Unfocused vs. focused CI 3. Allocation of resources, human and financial	1. How many employees do you employ/ what range of sales do you typically meet per year? 2. Do you regularly update yourself on your competitors? If yes, how often? 3. Do you follow some systematic way of monitoring the competition? 4. When updating yourself on competitors, do you know beforehand what it is you would like to know about them? 5. Do you personally look for information to update you on the competition, or do you have employees do that? 6. Have you invested in any tools or software that may help you in analyzing your competitors? If yes, what is the software, and how is it useful? 7. In the past year, have you bought any reports from external sources that offered you significant information on your competition?

In small-sized enterprises, the size of a company, measured in terms of the number of employees, will be positively related to the frequency of use of the Internet for CI purposes. ***(Wright et al., 2002; Lackman et al., 2000; Elenkov, 1997; Wood, 2001).***	Independent: • Number of employees Dependent: • Use of Internet for CI	1. Perceived usefulness of the Internet for CI 2. Frequency of Internet use for CI 3. Skills developed	1. Are you connected to the Internet at your office/store? 2. Do you find the Internet to be useful for gaining insight into the competition's status? Explain... 3. Do you regularly use the Internet to update yourself on competitors? If yes, how often do you use the Internet for such purposes? 4. Have you or any of your employees developed any skills in using the Internet for monitoring the competition? 5. Whenever you do use the Internet to look up some information on your competitors, do you usually find the information you are looking for?
The importance of CI activity at small-sized companies will vary depending on the industry in which the Small-sized company operates. ***(Tao and Prescott, 2000; Li, 1997; Wright et al. 2002).***	Independent: • Industry Dependent: • Importance of CI	1. Importance and frequency of reliance on CI	1. How important is it, in your industry to be aware of the status of the competition? 2. How often do you rely on information about the competition before you take major business decisions? (In addition, questions from H1 would be used to test for structure of CI)
An increase in environmental uncertainty will be positively related to an increase in CI activity	Independent: • Environmental uncertainty Dependent:	1. Sources of uncertainty 2. CI role in increasing uncertainty	(Participants would be asked to fill out tables describing CI activity levels, as well as environmental activity

at small - sized companies. ***(Ellsberg, 1961; Kühberger and Perner, 2003; Aguilar, 1967; Elenkov, 1997; Daft, Sormunen and Parks, 1988)***	• Intensity of CI activity		levels, over the past three years. Please see appendix for details of tables used)
In small-sized companies, CI activities will be directed towards the larger firms that operate in the same markets as the SMEs. ***(Levitt, 1960; Kotler et al., 2001; Porac and Thomas, 1990; Clark and Montgomery, 1999)***	Independent: • Size of focal company • Size of target company • Market commonality between two companies Dependent: • Intensity of CI activity towards target company	1. Perceived importance of CI. 2. Proportion of CI activity	1. Which among the following three categories of competitors do you monitor most closely: larger, smaller or approx. same sized competitors? 2. Which among the following three categories of competitors do you monitor most closely: competitors that offer a broader range than, the same amount of products/services, or only some of the products/services that your company does? 3. Which among the following two categories of competitors do you monitor most closely: Competitors that are in close proximity to you, or competitors that offer products/ services remotely (such as over the phone or Internet) 4. Which of the three mentioned characteristics is most important for you in determining which competitor to monitor?

B. Interview Questions

Date of Interview:
Company Name:
Name of Interviewee:
Title of Interviewee:
Could you tell us a bit about your company; how it started, what it offers?

1. Are there a large number of competitors in your business?

2. Do you regularly update yourself on the activities of your competitors? If yes, how often?

3. Do you follow some systematic way of monitoring the competition?

4. When updating yourself on the activities of competitors, do you know beforehand what specific information about them it is you would like to know?

5. Do you personally look for information to update you on competitor activities, or do you have employees do that?

6. Have you invested in any tools or software that may help you in analyzing your competitors? If yes, what is the software, and how is it useful?

7. In the past year, have you bought any reports from external sources that offered you significant information on your competition?

8. Are you connected to the Internet at your office/store?

9. Do you find the Internet to be useful for gaining insight into your competitors' activities? Explain…

10. Do you regularly use the Internet to update yourself on competitors' activities? If yes, how often do you use the Internet for such purposes?

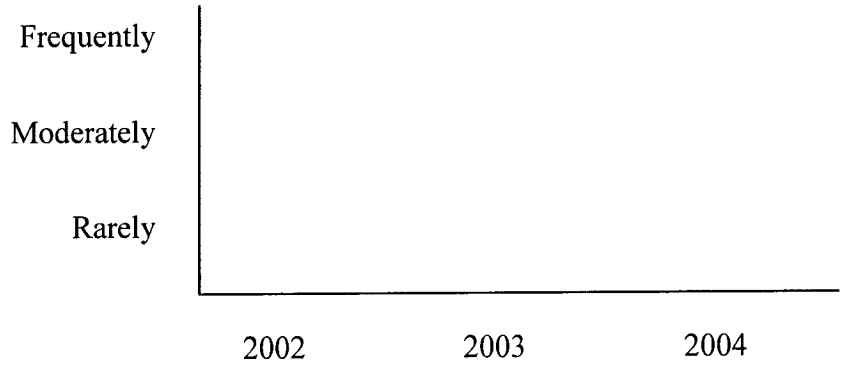
11. Have you or any of your employees developed any skills in using the Internet for monitoring the competition?

12. Whenever you do use the Internet to look up some information on your competitors, do you usually find the information you are looking for?

(The following tables are to be filled by participants, checking a single frequency level for each of the three years)

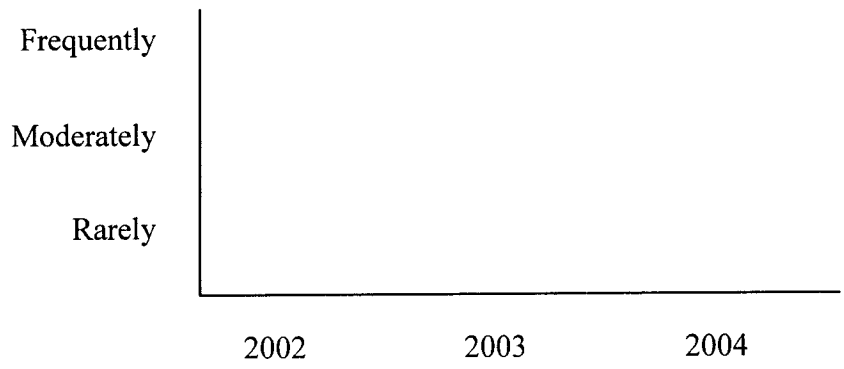
CI activity by year (to be filled by participants)

Competitor Monitoring



Internet use

Use of external reports



13. How important is it, in your industry to be aware of the status of the competition?

14. When you take a major business decision, how often is that decision influenced by information you obtain on your competitors?

For the next four questions, I would like you to think about the competitors that you monitor most closely.

15. Which among the following three categories of competitors would they fall into: larger, smaller or approx. same sized competitors?

16. Which among the following three categories of competitors do they fall into: competitors that offer a broader range than, the same amount of products/services, or only some of the products/services that your company does?

17. Which among the following two categories of competitors do they fall into: Competitors that are in close proximity to you, or competitors that are physically distant?

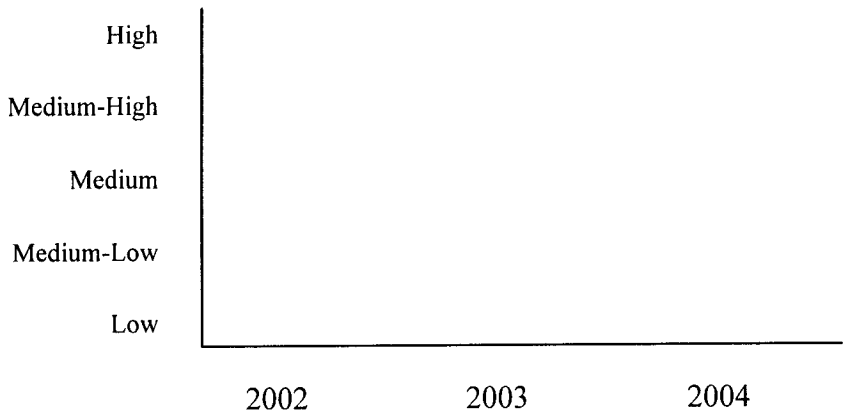
18. Which of the three mentioned characteristics is most important for you in determining which competitor to monitor?

19. (Define uncertainty for the purpose of this study. Tables to be filled by participants, checking a single level of uncertainty level for each year)

Strategic Uncertainty by sector/year

Customer Sector

Economic Sector



Competitor Sector

20. In your opinion, did the situation during the most uncertain of times affect your competitors as much as it affected your company?

21. During that period, how important was it to keep up-to-date on your competitors' activities as opposed to more normal periods?

22. Are you aware of what your competitors did at the time to adapt to the situation?

23. How many employees do you currently employ?

24. What range of sales do you typically meet a year?

    a. Less than $100,000
    b. Between $100,000 and $250,000
    c. Between $250,000 and $1,000,000
    d. Between $1,000,000 and $5,000,000
    e. Over $5,000,000

25. How long have you been in business?

C. Coding Key used for Quantification

C.1 Propositions on the Company Size and CI Activity

In small-sized enterprises, the size of a company, measured in terms of the number of employees, will be positively related to the degree of structure in CI activities at that company.

In small-sized enterprises, the size of a company, measured in terms of sales, will be positively related to the degree of structure in CI activities at that company

Independent Variables: Size

23. How many employees do you currently employ?

24. What range of sales do you typically meet a year?

    a. Less than $100,000
    b. Between $100,000 and $250,000
    c. Between $250,000 and $1,000,000
    d. Between $1,000,000 and $5,000,000
    e. Over $5,000,000

Dependent Variable: Sophistication and structure in CI activity

2. Do you regularly update yourself on the activities of your competitors? If yes, how often?

    0- Less than once every two weeks /ad-hoc/infrequently
    1- Once every two weeks → once a week
    2- More than once a week/ continuously/ always aware

3. Do you follow some systematic way of monitoring the competition?

    0- Not at all/ very ad-hoc/ very passive monitoring.
    1- Basic structure in CI activities/ mostly intuitive.
    2- Sophisticated structure in CI/ mostly systematic.

4. When updating yourself on the activities of competitors, do you know beforehand what specific information about them it is you would like to know?

0- No/ non-specific
1- General checklist (Covering general product descriptions, prices, location, events…)
2- Specific checklist (covering general checklist as above + including information to analyze competitors' business, to analyze competitors' employees, competitors' products)

5. Do you personally look for information to update you on competitor activities, or do you have employees do that?

   0- Neither.
   1- Either manager or employees.
   2- Both

6. Have you invested in any tools or software that may help you in analyzing your competitors? If yes, what is the software, and how is it useful?

   0- No/ none at all/ only Internet browsing.
   1- Use of some non-specialized tools or software (Other than simple Internet browsing)
   2- Yes, specialized tool or software for analyzing competitors' business or products.

7. In the past year, have you bought any reports from external sources that offered you significant information on your competition?

   0- None.
   1- Use of written material (like newsletters, financial reports…), but not specifically buying of reports made by analysts.
   2- Purchase of reports made by analysts.

C.2 Proposition on the Company Size and the Use of the Internet

In small-sized enterprises, the size of a company, measured in terms of the number of employees, will be positively related to the frequency of use of the Internet for CI purposes.

Independent Variable: Size

25. How many employees do you currently employ?

Dependent Variable: Use of Internet for CI

9. Do you find the Internet to be useful for gaining insight into your competitors' activities? Explain…

    0- Unimportant/irrelevant
    1- Somewhat important/ in some situations/ for some types of information.
    2- Very important in most instances

10. Do you regularly use the Internet to update yourself on competitors' activities? If yes, how often do you use the Internet for such purposes?

    0 – Ad-hoc/ less than twice a month
    1 – Once every two weeks → once a week
    2 – More than once a week

11. Have you or any of your employees developed any skills in using the Internet for monitoring the competition?

    0- Basic browsing skills.
    1- Moderate skills.
    2- Very skilled.

12. Whenever you do use the Internet to look up some information on your competitors, do you usually find the information you are looking for?

    0 – Rarely
    1 – About half the time
    2 – Most of the information

C.3 Proposition on the Industry and CI Activity

The intensity and importance of CI activity at small-sized companies will vary depending on the industry in which the company operates.

Independent Variable: Industry (Multimedia or nightlife)

Dependent Variables: Sophistication and structure in CI activity.

Perceived importance of CI for business.

(Sophistication and structure are measured using the same questions used for the previous propositions)

Perceived importance of CI:

13. How important is it, in your industry to be aware of the status of the competition?

    0 – Very low importance.
    1 – Somewhat
    2 – Very important

14. When you take a major business decision, how often is that decision influenced by information you obtain on your competitors?

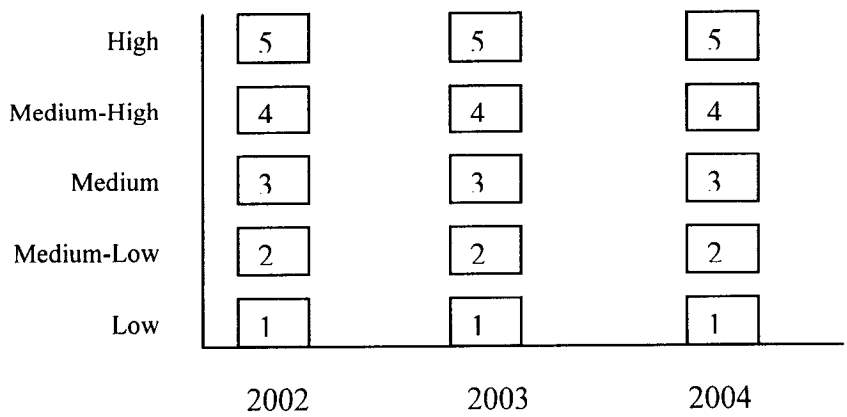
    0 – Very rarely / almost never
    1 – Sometimes/ in certain situations
    2 – Very Often

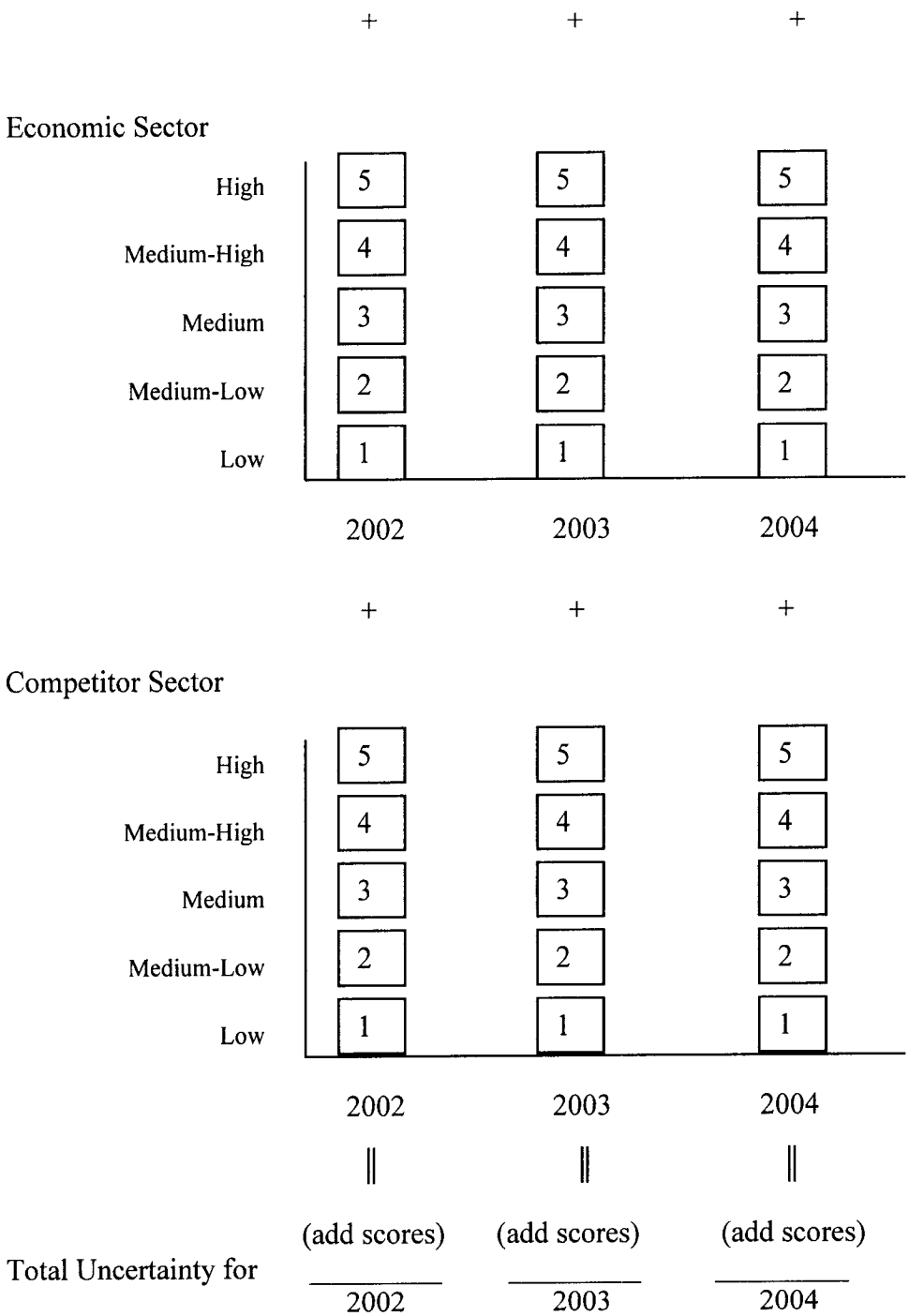
C.4 Proposition on Uncertainty and CI Activity

An increase in environmental uncertainty will be positively related to an increase in CI activity at small companies.

Independent Variable: Perceived environmental uncertainty (Give score ranging from 1 to 5 for each year, depending on level of uncertainty for that year. For total uncertainty for each year, add individual scores of each sector for that year)

Customer Sector




+
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Economic Sector
High
Medium-High
Medium
Medium-Low
Low
5
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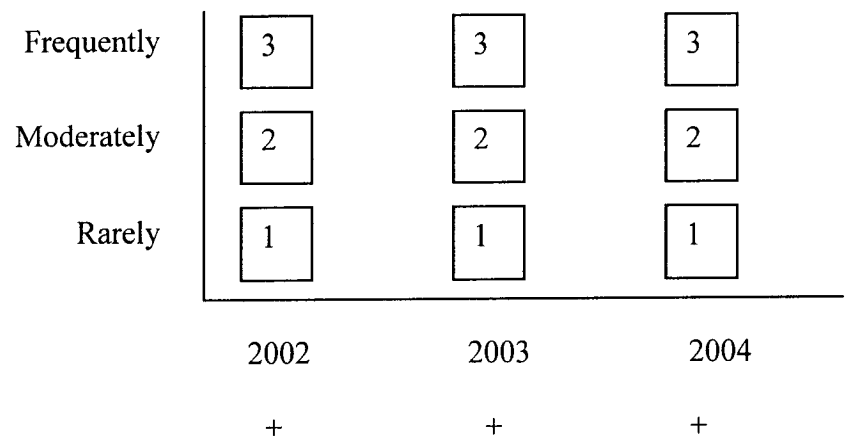
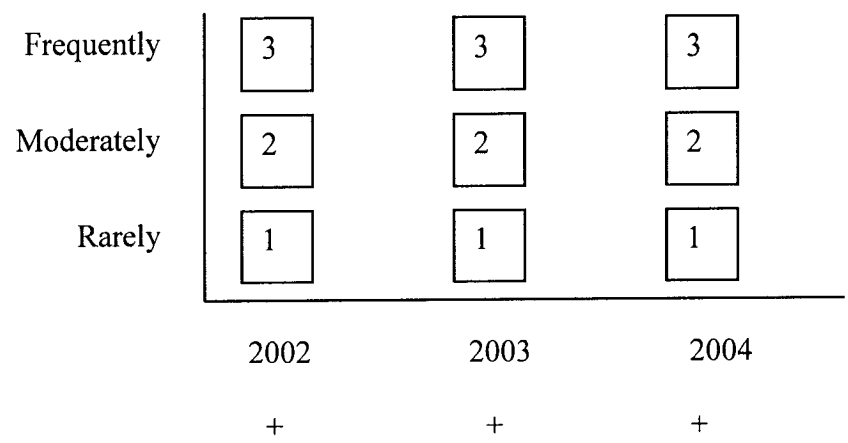
1
5
4
3
2
1
2002
2003
2004
+
+
+
Competitor Sector
High
Medium-High
Medium
Medium-Low
Low
5
4
3
2
1
5
4
3
2
1
5
4
3
2
1
2002
2003
2004
(add scores)
(add scores)
(add scores)
Total Uncertainty for
2002
2003
2004

Dependent Variable: Frequency of CI activity (Give score ranging from 1 to 3 for each year, depending on level of either competitor monitoring, use of Internet for CI, and the use of external reports for CI for that year. For total CI activity frequency for each year, add individual scores of each of competitor monitoring, Internet use for CI and use of external reports for CI for that year)

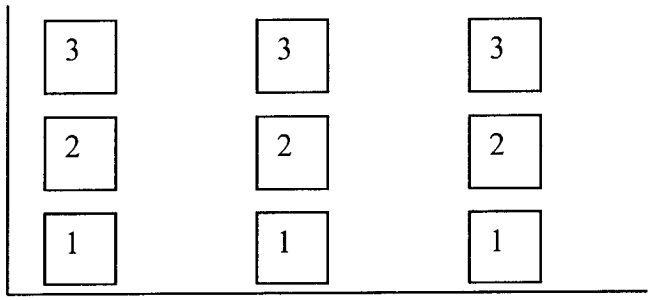
Competitor Monitoring



Internet use



Use of external reports



2002 2003 2004

‖ ‖ ‖

(add scores) (add scores) (add scores)

Total CI for _____ _____ _____

2002 2003 2004

C.5 Propositions on the Targets of CI Activity

In small sized companies, CI activities will be directed towards larger firms.

Dependent Variable: Relative size of target company (competitor that is monitored most closely by participants)

For the next four questions, I would like you to think about the competitors that you monitor most closely.

15. Which among the following three categories of competitors would they fall into: larger, smaller or approx. same sized competitors?

    0 – Smaller
    1 – Same size
    2 – Larger
    3 – Unspecified/varied

In small sized companies, CI activities will be directed towards firms that offer a similar range of products and services.

Dependent Variable: Relative range of products and services offered by target company (competitor that is monitored most closely by participants).

For the next four questions, I would like you to think about the competitors that you monitor most closely.

16. Which among the following three categories of competitors do they fall into: competitors that offer a broader range than, the same amount of products/services, or only some of the products/services that your company does?

    0 – Less products
    1 – Same range
    2 – More products
    3 – Unknown/varied

In small sized companies, CI activities will be directed towards firms that serve the same market, and thus are in close physical proximity.

Dependent Variable: Relative location of target company (competitor that is monitored most closely by participants).

For the next four questions, I would like you to think about the competitors that you monitor most closely.

17. Which among the following two categories of competitors do they fall into: Competitors that are in close proximity to you, or competitors that are physically distant?

    0 – In Neighborhood
    1 – Same city but different neighborhood
    2 – Different city/ country
    3 – Unspecified/ varied

D. SPSS Printouts

D.1 Propositions on Size, CI and the Internet

T-Test

Group Statistics

	Industry	N	Mean	Std. Deviation	Std. Error Mean
# of employees	1	7	6.00	2.160	.816
	2	8	28.50	22.488	7.951
Sales	1	7	2.14	.900	.340
	2	8	3.63	.518	.183

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
# of employees	Equal variances assumed	9.179	.010	-2.624	13	.021*	-22.50	8.574	-41.023	-3.977
	Equal variances not assumed			-2.815	7.147	.025*	-22.50	7.993	-41.321	-3.679
Sales	Equal variances assumed	2.870	.114	-3.980	13	.002**	-1.48	.372	-2.287	-.678
	Equal variances not assumed			-3.838	9.308	.004**	-1.48	.386	-2.351	-.613

* Difference is significant at the 0.05 level (2-tailed).
** Difference is significant at the 0.01 level (2-tailed).

Correlations while controlling for the industry

	Number of employees	Sales	Months in operation	Overall CI score	Internet for CI score
Number of employees	1.0000 (0) P= .	.3452 (12) P= .227	.0945 (12) P= .748	-.0311 (12) P= .916	-.2535 (12) P= .382
Sales	.3452 (12) P= .227	1.0000 (0) P= .	-.0681 (12) P= .817	.1459 (12) P= .619	-.2152 (12) P= .460
Months in operation	.0945 (12) P= .748	-.0681 (12) P= .817	1.0000 (0) P= .	.0042 (12) P= .989	-.2426 (12) P= .403
Overall CI score	-.0311 (12) P= .916	.1459 (12) P= .619	.0042 (12) P= .989	1.0000 (0) P= .	.0098 (12) P= .974
Internet for CI score	-.2535 (12) P= .382	-.2152 (12) P= .460	-.2426 (12) P= .403	.0098 (12) P= .974	1.0000 (0) P= .

Correlations for nightlife industry isolated

		Sales of nightlife companies	Employees nightlife companies	Internet for CI score
Sales of nightlife companies	Pearson Correlation	1	.534	-.736(*)
	Sig. (2-tailed)	.	.173	.037
	N	8	8	8
Employees nightlife companies	Pearson Correlation	.534	1	-.302
	Sig. (2-tailed)	.173	.	.467
	N	8	8	8
Internet for CI score	Pearson Correlation	-.736(*)	-.302	1
	Sig. (2-tailed)	.037	.467	.
	N	8	8	8

* Correlation is significant at the 0.05 level (2-tailed).

D.2 Propositions on the Industry and CI Activity

T-Test

Group Statistics

	Industry	N	Mean	Std. Deviation	Std. Error Mean
Score on overall CI activity	0 (Multimedia)	7	8.43	1.618	.612
	1 (Nightlife)	8	5.63	.916	.324
Score on Internet for CI activity	0 (Multimedia)	7	6.29	1.380	.522
	1 (Nightlife)	8	2.88	1.885	.666
Score on importance of CI	0 (Multimedia)	7	2.71	.756	.286
	1 (Nightlife)	8	2.38	1.598	.565

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Score on overall CI activity	Equal variances assumed	1.783	.205	4.204	13	.001**	2.80	.667	1.363	4.244
	Equal variances not assumed			4.051	9.215	.003**	2.80	.692	1.243	4.364
Score on Internet for CI activity	Equal variances assumed	.375	.551	3.944	13	.002**	3.41	.865	1.542	5.279
	Equal variances not assumed			4.030	12.660	.002**	3.41	.846	1.577	5.244
Score on importance of CI	Equal variances assumed	3.916	.069	.512	13	.617	.34	.663	-1.092	1.771
	Equal variances not assumed			.536	10.256	.603	.34	.633	-1.067	1.745

* Difference is significant at the 0.05 level (2-tailed).

** Difference is significant at the 0.01 level (2-tailed).

D.3 Proposition on Uncertainty and CI Activity

Correlations without controlling for the industry

		Cmpttr Mtnrng	Intnrt Cmpt Mntrg	Extrnl Rprts Mntrg	Total CI score	Cstmr Sctr Uncrtnty	Ecnmc Sctr Uncrtnty	Cmpttr Sctr Uncrtnty	Total Uncertainty
Cmpttr Mtnrng	Pearson Correlation	1	.446(**)	.262	.818(**)	-.081	-.192	.186	-.057
	Sig. (2-tailed)	.	.002	.086	.000	.602	.213	.226	.715
	N	44	44	44	44	44	44	44	44
Intnrt Cmpt Mntrg	Pearson Correlation	.446(**)	1	-.058	.664(**)	.179	-.020	.036	.095
	Sig. (2-tailed)	.002	.	.710	.000	.245	.897	.818	.538
	N	44	44	44	44	44	44	44	44
Extrnl Rprts Mntrg	Pearson Correlation	.262	-.058	1	.591(**)	-.414(**)	-.379(*)	.020	-.407(**)
	Sig. (2-tailed)	.086	.710	.	.000	.005	.011	.898	.006
	N	44	44	44	44	44	44	44	44
Total CI score	Pearson Correlation	.818(**)	.664(**)	.591(**)	1	-.157	-.288	.115	-.182
	Sig. (2-tailed)	.000	.000	.000	.	.310	.058	.456	.237
	N	44	44	44	44	44	44	44	44
Cstmr Sctr Uncrtnty	Pearson Correlation	-.081	.179	-.414(**)	-.157	1	.502(**)	-.010	.772(**)
	Sig. (2-tailed)	.602	.245	.005	.310	.	.001	.949	.000
	N	44	44	44	44	44	44	44	44
Ecnmc Sctr Uncrtnty	Pearson Correlation	-.192	-.020	-.379(*)	-.288	.502(**)	1	-.114	.749(**)
	Sig. (2-tailed)	.213	.897	.011	.058	.001	.	.461	.000
	N	44	44	44	44	44	44	44	44
Cmpttr Sctr Uncrtnty	Pearson Correlation	.186	.036	.020	.115	-.010	-.114	1	.414(**)
	Sig. (2-tailed)	.226	.818	.898	.456	.949	.461	.	.005
	N	44	44	44	44	44	44	44	44
Total Uncertainty	Pearson Correlation	-.057	.095	-.407(**)	-.182	.772(**)	.749(**)	.414(**)	1
	Sig. (2-tailed)	.715	.538	.006	.237	.000	.000	.005	.
	N	44	44	44	44	44	44	44	44

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Correlations while controlling for the industry

	CMPT_MTNG	IT_CMPT_MNG	EXL_RPT_MTG	TOT_CI	CUS_UNCT	ECON_UNCT	CMPT_UNCT	TOT_UNCT
CMPT_MNTG	1.0000 (0) P= .	.4689 (41) P= .002 **	.2796 (41) P= .069	.8231 (41) P=.000 **	-.1332 (41) P= .394	-.2272 (41) P= .143	.1978 (41) P= .204	-.0921 (41) P= .557
IT_CMPT_MTG	.4689 (41) P= .002 **	1.0000 (0) P= .	.0184 (41) P= .907	.6497 (41) P=.000 **	-.0494 (41) P= .753	-.2018 (41) P= .194	.1043 (41) P= .506	-.0844 (41) P= .590
EXL_RPT_MTG	.2796 (41) P= .069	.0184 (41) P= .907	1.0000 (0) P= .	.6517 (41) P=.000 **	-.3979 (41) P= .008 **	-.3610 (41) P= .017 *	.0086 (41) P= .957	-.3892 (41) P= .010 *
TOT_CI	.8231 (41) P= .000 **	.6497 (41) P= .000 **	.6517 (41) P= .000 **	1.0000 (0) P= .	-.2873 (41) P= .062	-.3772 (41) P= .013 *	.1438 (41) P= .357	-.2773 (41) P= .072
CUS_UNCT	-.1332 (41) P= .394	-.0494 (41) P= .753	-.3979 (41) P= .008 **	-.2873 (41) P=.062	1.0000 (0) P= .	.4540 (41) P= .002 **	.0261 (41) P= .868	.7483 (41) P= .000 **
ECON_UNCT	-.2272 (41) P= .143	-.2018 (41) P= .194	-.3610 (41) P= .017 *	-.3772 (41) P=.013 *	.4540 (41) P= .002 **	1.0000 (0) P= .	-.0953 (41) P= .543	.7305 (41) P= .000 **
CMPT_UNCT	.1978 (41) P= .204	.1043 (41) P= .506	.0086 (41) P= .957	.1438 (41) P=.357	.0261 (41) P= .868	-.0953 (41) P= .543	1.0000 (0) P= .	.4606 (41) P= .002 **
TOT_UNCT	.0921 (41) P= .557	-.0844 (41) P= .590	-.3892 (41) P= .010 *	-.2773 (41) P=.072	.7483 (41) P= .000 **	.7305 (41) P= .000 **	.4606 (41) P= .002 **	1.0000 (0) P= .

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

D.4 Propositions on the Targets of CI Activity

Competitor Size

T-Test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Mmdia-CmptrSize	5	1.8000	.44721	.20000
NghtLf-CmptrSize	8	1.3750	.51755	.18298

One-Sample Test

	Test Value = 2					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Mmdia-CmptrSize	-1.000	4	.374	-.2000	-.7553	.3553
NghtLf-CmptrSize	-3.416	7	.011 *	-.6250	-1.0577	-.1923

* Difference is significant at the 0.05 level (2-tailed).

Competitor range of products and services

T-Test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Multimedia-Competitor Products	6	1.1667	.75277	.30732
Nightlife Competitor Products	7	1.0000	.57735	.21822

One-Sample Test

	Test Value = 1					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Multimedia-Competitor Products	.542	5	.611	.1667	-.6233	.9567
Multimedia-Competitor Products	.000	6	1.000	.0000	-.5340	.5340

Competitor location

T-Test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Mmdia-CmptrLctn	6	1.1667	.75277	.30732
NghtLf-CmptrLctn	8	.3750	.51755	.18298

One-Sample Test

	Test Value = 2					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Mmdia-CmptrLctn	-2.712	5	.042*	-.8333	-1.6233	-.0433
NghtLf-CmptrLctn	-8.881	7	.000**	-1.6250	-2.0577	-1.1923

* Difference is significant at the 0.05 level (2-tailed).
** Difference is significant at the 0.01 level (2-tailed).