Measuring Competitive Intelligence Outcomes: A Case Study

Faculty advisor endorsement: France Bouthillier, School of Information Studies, McGill University

1. Introduction

Through measurement, information services quantify their performance and value, and communicate with stakeholders. Identifying and quantifying value, however, has historically been an accounting-based activity that has relied on financial figures that do not capture significant intangibles for organizations, such as innovation (Lev, 2001).

Information services may provide financial benefits to clients and parent organizations, but often the results of the services are cognitive, personal, and cannot be accurately represented by dollars. This has led managers, such as librarians, to ask if the value of information services could be more accurately demonstrated to stakeholders (Poll & Payne, 2006) and if the representation of value requires a shift in discourse around the topic of measurement to evolve new, non-financial, qualitative measures (Town, 2011).

In the field of library and information studies (LIS), scholars are investigating the value of information services to users, asking how managers and researchers can go beyond process measures such as usage statistics as arbiters of success, to outcome and impact measures. In the LIS literature can be found examples of LIS professionals and researchers attempting to develop outcome and impact measures which might better demonstrate the value of information services against organizational purpose and mandates, and not just functionality or cost-effectiveness. 'Impact' has been defined by Poll for library-type services as "the tangible or intangible difference or change in an individual or group resulting from the contact with library services", while outcomes are "direct, pre-defined effects of the output related to goals and objectives of the library's planning" such as customer satisfaction levels (2012, p. 123).

In this proposal is described a case study to examine one instance of an information service, a competitive intelligence (CI) unit, and how CI interacts with organizational decision-making processes to produce – or not produce – beneficial outcomes and impacts for the organization. The findings will provide some valuable fieldwork-based evidence to support the development of outcome-based performance metrics for CI. This purpose of this study is twofold: one, to determine whether the hypothesized causal relationship between CI and decision outcomes can be identified and isolated for measurement (e.g., improved customer service); and two, to critically examine prescriptive models of CI outcome measurement in the literature against the constraints of practice and measurement theory.

2. Literature Review

A knowledge-based view of the firm (Grant, 1996) suggests that the information capabilities of organizations determine performance. 'Performance' is a complex concept which for this study denotes the quantity and quality of desired beneficial results accruing due to purposeful organizational activities against yardstick standards (internal or external) of productivity and profitability. Competitive intelligence (CI) is a type of information service used by organizations: the process and the products of an organization's data collection and analysis about the competitive environment (Fleisher & Blenkhorn, 2001), with close historic and practical ties to covert intelligence, military intelligence, business intelligence, and market intelligence (Buchda, 2007; Juhari & Stephens, 2006). Managers of organizations have indicated when surveyed that the primary benefit they expect to receive from CI is improved decision-making (Marin & Poulter, 2004), resulting in savings of time and money from improvements to internal business processes (Herring, 1996), improvements in customer service (Qingjiu & Prescott, 2000), and improved ability to anticipate threats and opportunities in the marketplace

(Hannula & Pirttimaki, 2003), among others. Most expected outcomes can be loosely grouped under the headings of financial outputs, improved client relationships, and innovation in products and services.

No evidence has yet been found to establish the relationship, if any, between CI and these hoped-for benefits, although some correlations have been found between CI use and positive organizational performance (e.g., Adidam, Banerjee, & Shukla, 2012). This situation has complicated the development of performance-based measures for CI.

Scholars and practitioners of competitive intelligence indicate in the literature that significant challenges exist in identifying how to measure the outcomes and impact of intelligence. These challenges are frequently attributed to conceptual and methodological problems of measurement also cited in intellectual capital (IC), knowledge management (KM), and library and information studies (LIS) measurement literatures. These methodological issues are related to intangible results, secondary effects, and the occasional time lag for results to appear (see for example Kujansivu & Lönnqvist, 2009). Methodological challenges are further complicated for CI in that if the purpose of CI is to improve decision-making, any research into CI value as it affects decision-making must necessarily rely on highly subjective data and attempt to quantify cognitive effects.

Conceptual problems include a multiplicity of prescriptive measurement models in the literature and descriptions of unique practice. Scholars have applied prescriptive models of measurement to measure the value and performance of CI, but these have not been evaluated (e.g., Kujansivu & Lönnqvist, 2009; McGonagle & Vella, 2002; Davidson, 2000). CI measurement in practice has defaulted to activity measures of process and usage (Ganesh, Miree, & Prescott, 2004), while CI practitioners call for improvements to measurement (Marin

& Poulter, 2004). In the literature there are significant assumptions being made about intelligence benefits that are unsubstantiated by research (Lönnqvist & Pirttimäki, 2006), partly because there is a lack of research-based evidence. In response, scholars interested in determining the value of CI have made calls for empirical data (Hughes, 2005), case studies (Wright & Calof, 2006), and additional fieldwork, so that measures of competitive intelligence outcomes might be developed (Marin & Poulter, 2004) and that the benefit and value of CI to organizations might be determined in relation to decision-making.

3. Objectives and Research Questions

The author of this research proposal takes an instance of an information service – a competitive intelligence unit – and proposes a research study to investigate how the value of the service can be identified, quantified, and represented to stakeholders when its primary purpose, to inform and improve decision-making, is intangible. The purpose of this research project, in light of these calls for research, is twofold. First, to determine what relationship, if any, exists between CI and decision outcomes; second, data collected will be used to evaluate prescriptive models of CI measurement in the literature. Three research questions have been formulated:

1. How, when, and by whom is CI used as an input into organizational decision-making?
2. When CI is used, what are the organizational outcomes in critical categories such as finances, client relationships, and innovation?
3. In light of organizational constraints, which measurement methods identified in the literature are most appropriate for use in determining CI outcome and impact?

This research design has been developed in order to identify the intangible strategic outcomes and impact of competitive intelligence (CI), if possible, and how they determine CI value in relationship to the decision-making process. Identification will then serve as a

preliminary step to measurement, taking into account reported challenges and difficulties related to representing and quantifying aspects of organizational decision making, outcomes, and impact. The conceptual and methodological concerns for measurement described briefly above mandate qualitative research methods.

The research design is a case study, examining decisions affected by CI (the unit of analysis) at an organization with a formal CI unit. This research design responds to calls for more field research, such as case studies, investigating specific and particular aspects of the CI cycle and CI measurement (Ganesh, Miree, & Prescott, 2004; Calof & Wright, 2008).

4. Research Design

In order to address these research questions, a case study is proposed to investigate practice and feasibility in CI measurement. Qualitative and explorative research will take place at a single organization with a CI unit. A CI unit is defined as dedicated resources and staff specifically tasked with generating CI deliverables such as reports and presentations for internal CI clients and decision makers. With the help of CI unit employees, decisions informed by CI and made within the organization 2-5 years in the past will be identified for study. This timeframe is to allow decision outcomes to have been manifested but employees involved to still be in the organization. Interviews and document analysis will be the research methods used.

A model of the conceptual framework is provided below.

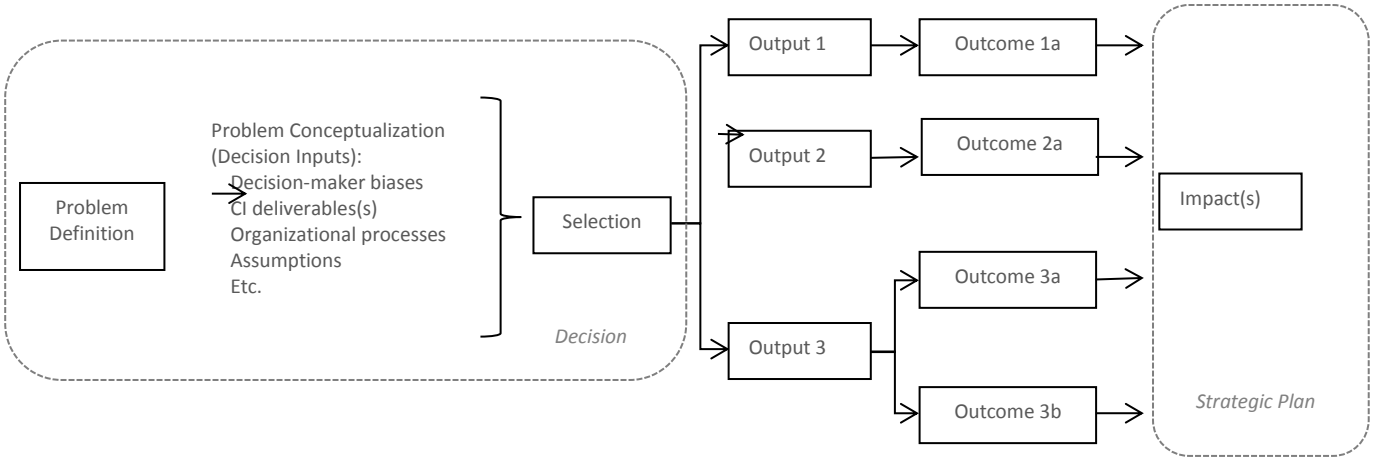

Figure 1: A model of the conceptual framework for the study

Here the first stage of organizational decision-making, the problem definition, leads to problem conceptualization, in which CI is one input among potentially many. The organizational decision-making process terminates with a selection from an array of possible actions. A decision is defined as a process that involves these three stages, and is the unit of analysis.

Subsequent to the selection and ensuing activity, outputs begin to appear, followed in time by more intangible outcomes. These outcomes in turn impact the organization, either leading it to fulfilment of or divergence from the organization's strategic plan. In the proposed model, a 'good' measure becomes one that allows time for impact to manifest, accounts for the role of CI in decision making, and relates CI to organizational strategy. Indicators of finances, innovation, and client relationships of value or benefit can then be traced through tangible outputs in multiple dimensions of the organization.

This case study site will be an organization that: has a CI unit in operation at least three years (to ensure maturity in its operations); employs a minimum of two full-time CI employees (identified by job function and not title); and has a strategic plan detailing goals for the organization in place for at least three years.

Once access to a case study site has been established, a combination of interviews and document analysis will be used to examine 'traceable decisions', that is, strategic decisions informed by a CI product 3-5 years ago. Those decisions will be studied to determine if and how CI affected the decision-making as an input to the organizational decision-making process. A single decision will serve as the unit of analysis. These will be identified with the cooperation of the case study site manager(s) and decision makers.

The number of decisions isolated for analysis will entirely depend on how many decisions provide saturation. It is expected that the case study as it is described here will involve the interviews of 10-15 people, some of whom may have only one decision example to provide. Although the researcher anticipates that respondents will state that they believe CI to be useful to decision-makers and be able to provide examples, the interview guides are designed to capture negative responses and experiences, which will also provide useful data.

In this study, document analysis will be used concurrently with the interviews to cross-reference subjective statements whenever possible and provide some objective data. For example, subjective reports of CI value can be referenced against management's CI unit usage reports. Stories of meetings held can be checked against meeting minutes. A list of documents to be requested as a starting point for the document research at an organization such as Google or the Coca-Cola Company can be found in table 1:

Document
Strategic plan(s) for past five years
Shareholders' annual reports for past five years
Stock quotes for past five years
Chairman/CEO statements for past five years
Press releases for past five years, particularly focussing on those related to traceable decisions and three indicators
Industry reports published by a third party
Press releases and other documentation published by competitors and industry observers relating to products and services affected

Strategic (business) plans for past five years
Training documents relating to CI use, processes, products
CI deliverables used to inform the traceable decisions
Emails related to the decision, CI used, or evaluations of the decision or its results after the fact
Other documentation, such as sales reports, related to identified outputs/outcomes of decisions

Table 1: Preliminary list of documents for collection at case study site

Once the data collection is completed, decision objectives and outcomes will be compared against the organization's strategic plans from both the time the decision was made, and the time the research is undertaken, in order to examine how well the outcomes align with strategic goals and assess impact. If, for example, a given decision results in an innovative outcome of a new product, the researcher can examine how that product has been used or valued since being introduced to the market and if it has fulfilled any requirement of the current or past strategic plan.

The data collection and preliminary data analysis has been broken into stages, summarized in the table below. They will be followed by a final data analysis stage, in which recommendations for CI measurement found in the literature will be examined and tested.

Research Question	Steps	Methods:	Deliverable
1. How, when, and by whom is CI used as an input into organizational decision-making?	Understand how CI is used as an input into decision-making at the organization	Interviews with CI unit employees, internal clients, decision makers; review of training documents	An account of CI practices within the case study organization for comparison to normative accounts of CI/ decision-making practice in the literature
	Understand the organization's strategic decision-making process	Interviews with decision makers and managers	
2. When CI is used, what are the organizational outcomes in critical categories such as finances, client relationships, and innovation?	Describe foundational factors, implementation, and strategic/tactical objectives of decisions	Interviews with decision-makers and managers involved with the strategic decisions; document analysis; chains of evidence tables	1. Model(s) of retrospective decision analysis with CI as an input; 2. Chains of evidence tables showing relationship(s) if any between inputs and outcomes of decision-making
	Identify decision outputs and outcomes		
	Source assessments of the decision outcomes, value		
	Identify where (if) outputs and outcomes align with the strategic plan		

3. In light of organizational constraints, which measurement methods identified in the literature are most appropriate for use in determining CI outcome and impact?	Test prescribed measurement methods and tools with the data collected from case site	Data analysis	Recommendations as to best measurement methods, tools, and approaches

Table 2: Research questions connected to data collected

Once data has been collected, the researcher will do some preliminary data analysis as described in the section on data collection. Data will be analysed to discover what role CI had in each traceable decision, identify outcomes, relate outcomes to the strategic plan, consider the value placed on CI and its role in the organization, and identify attitudes and practices in CI measurement. Other decisions will be analysed to determine the role, or lack thereof, of CI, within departments and activities of the organization.

5. Significance

The value of this proposed case study research is that it examines CI's role in advising/influencing a decision, which field research assessing CI value has not yet done (see Blenkhorn & Fleisher, 2007; Lönnqvist & Pirttimäki 2006; Marin & Poulter, 2004), thus filling a gap in the literature, and informing future research methodology into CI value and practices. Another outcome will be the testing of prescriptive measurement methods and tools in the CI literature, which will help inform not only CI measurement research, but also practice. Most particularly, valuable data and insight will be gained into how outcomes of intelligence can be identified and assessed objectively. CI practitioners have reported that measurement is a priority area of development for the field (Hannula & Pirttimaki, 2003; Qingjiu & Prescott, 2000). This data will be applied to developing measurement tools and methods for practical use.

6. Conclusion

Although correlations have been found between CI and positive organizational performance (e.g., Adidam, Banerjee, & Shukla, 2012), a cause and effect relationship has not yet been identified and described in relation to specific outcomes, which might then serve as indicators of performance. As a result, scholars have called for field research investigating this relationship. Simultaneously, recognizing that performance measures currently in practice are of questionable value, multiple calls have been made for research to investigate how CI performance can be measured, taking into account that the primary value of CI is in how well it informs decision-making (Sawka, in Blenkhorn & Fleisher, 2007; Lönnqvist & Pirttimäki 2006; Marin & Poulter, 2004).

CI scholars have argued that the primary purpose of intelligence is to inform decision making, with the intent to increase the likelihood of the most optimal outcomes (Bose, 2008). CI units can be described as a specialized type of information service, with CI deliverables being a specialized type of information product, used with the intent to develop more effective decision-making. Understanding the impact of these intelligence services and products upon decision-making, and through decision-making upon organizational outcomes, has implications for performance measurement to demonstrate the value of information services in LIS and other fields, improvement to organizational decision-making processes, and the role of competitive intelligence services within organizations.