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A research agenda for intelligence studies in business

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A research agenda for intelligence studies in business

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ABSTRACT This research paper defines the scope for a research agenda for competitive intelligence (CI), market intelligence (MI) and more generally for intelligence studies in business. Respondents in the survey defined the scope to include analysis, traditional phenomena or problems, new phenomena, trans- or cross disciplinary studies, methodological issue and industry specific studies. Respondents were also asked to come up with terms for a good definition of the study. We found that existing definitions of CI in use are overlapping with definitions of other more established fields of study, like decision sciences and marketing intelligence. Respondents agreed that it's practical to define the study in terms of understanding the external environment. In the discussion a parallel is made to the notion of surrounding world analysis and Stevan Dedijer's ideas about social intelligence. A broad discussion leads to a renewed interest for disciplines studied by the humanities as we show what has been lost in the development of the social sciences. Implications are shown and future studies suggested.

KEYWORDS business intelligence, competitive intelligence, intelligence studies, market intelligence, research agenda

1. INTRODUCTION

1.1 A brief historical perspective

Deshpande and Webster (1989, p.1) remind us that "when Drucker (1954) first articulated the marketing concept, he noted that marketing was not really a separate management function but rather the whole business as seen from the customer's point of view." In much the same way today the disciplines studying information and intelligence have chosen a particular point of view of a particular department (marketing), of a particular technology or service (big data, business intelligence and data-as-a-Service, or DaaS) or from the question of competitive advantage (intelligence studies (IS), whether it's state or business) or strategy, which could be called the outside view. The problem is that there are many views or perspectives studying the same phenomenon, and to a large extent their respective adherents or researchers do not read each other's work or refuse to see the

phenomenon from any perspective but their own. We have created a scientific landscape of compartmentalization and overlaps which has now mainly become a disadvantage to further understanding. Instead of tackling the methodical challenge, focusing on the notion of understanding as opposed to the promise of theory we instead end up feverishly hunting for the next management buzzword which only confirms the symptoms.

It wasn't always that way. The competitive advantage issue is an age old perspective going back in Europe to the foundations of the first city states (Venetia, Firenze) and before that in Asia to the foundations of nation states and empires (the Mauryan Empire, the state of Wu, the state of Qin), with contributions from men like Marco Polo, Machiavelli, Kautilya, Sun Zi and Han Fei Zi. The same question is asked again during the industrial revolution by Adam Smith and in modern times by Michael Porter (Solberg Søylen, 2012, p. 17). As a discipline intelligence studies

starts as state intelligence with men like R.V. Jones in Britain in 1939 and Sherman Kent in the USA, and as a function relevant for business with Stevan Dedijer in Sweden in the early 1970s (Solberg Søylen, 2012, p. 19).

On the macro level the discipline may be said to have a twin sister in the study of geopolitics where we look at the correlation between history, geography and the notion of power, which survives after the Second World War and pops up in the social sciences with the Frankfurter School, as critical theory. As applied to the world of international business we often talk of geoeconomics: both are theoretically anchored in evolutionary theory, not as neoclassical economics in the study of physics. The discipline coined geopolitik was developed by the Swedish political scientist Rudolf Kjellén (1864–1922), who was influenced by the German political geographer Friedrich Ratzel (1844–1904) who again was influenced by scholars like the Prussian geographer Carl Ritter (1779–1859), Alexander von Humboldt (the founder of modern geography) and the German historian Leopold von Ranke (1795–1886) (Solberg Søylen, 2012, p. 21).

Fast forwarding to today, the difference between information science in business, business- and market research and intelligence studies is mainly one of perspective, scope and dates and less about content and scientific method. Intelligence studies in business sees the organization much like an intelligence organization, an offspring of the study of state and military intelligence, searching for significant pieces of information that affect the business as a whole, not searching to see how selected experiences fit into oversimplified theoretical models. When Adam Smith wrote his famous book in 1776, this compartmentalization did not matter as political sciences then was an integrated part of economics and business studies in what is called political economy. Long before that, with Plato and Aristotle, it was all studied as philosophy, as opposed to the natural sciences. The compartmentalization of knowledge in the social sciences has since become an advancement to the body of knowledge about man as well as a hindrance as the method and logic continues to dominate at our universities, despite excellent scholarship in the 1970s and 1980s that shows that this is an intellectual impasse (see e.g. Hodgson, 1988). It's with theory as with great empires: their

glow continues long after they have been surpassed (for example, England in the 19th century and the US in the 20th), an observation which itself fits into an evolutionary approach.

At the end, what decides the value of these different perspectives is to what extent they can show to be of relevance to practitioners. Academics must from time to time ask practitioners to what extent their work is being used and has positive effects for companies and for society at large. Drucker hardly wrote any articles for scientific journals, but he was always a favorite among practitioners, simply because his books were relevant. Thus it is real relevance that social science disciplines should strive for, not “academic impact,” or the amount of articles or to what extent they are being cited by colleagues. The idea that basic research (as opposed to applied) is of great value in the social sciences is still to be proven even though it is true that the same method continues to do wonders for the natural sciences.

To know what to study researchers need to agree on what problems are of importance. The natural way to do this is to ask practitioners and academics alike what areas or problems they think deserves more attention based on unresolved problems they observe and are confronted with.

Solberg Søylen (2014) did a survey of what content readers of the *Journal of Intelligence Studies in Business* (JISIB) wanted to see. It said that readers are looking for more case study material. The survey also found that there is an even balance between those who think there is too much and too little technical content in the existing literature. Some readers also want articles in languages other than English. However, can these findings be used to draw general conclusion for the whole field of intelligence studies in business? We think not. Thus another more ambitious survey was planned to define a research agenda for the discipline as such, and thus identify the research gap.

1.2 An introduction to current literature

Wright and Calof (2006) study current CI practices among different cultures. The same authors did an evaluation of the study of the CI field two years later (Calof and Wright, 2008). Solberg Søylen (2013) presented an overview of articles on competitive intelligence in JCIM and CIR, two earlier CI

journals. Teo and King (1996) did an assessment of the integration of business planning with information systems, and Teo and Choo (2001) did an assessment of using the internet for CI. None of these articles tackled the question of defining a research agenda.

In more established business fields that also attract more research, similar projects to evaluate the field and lay out research agendas are more frequent. For example, Deshpande and Webster (1989) defined a research agenda for organizational culture and marketing. Guest (1997) did the same for human resource management (HRM). Closer to our own field, Varun Grover (2001) defined a research agenda for knowledge management (KM), Rumelt and Teece (1994) did the same for business strategy, Gibson et al. (2004) did this for business intelligence (BI) and Al-Mashari (2002) defined an agenda for enterprise resource planning (ERP) systems.

Intelligence studies can be divided into a private and a public side, or one related to business and the other to the affairs of the state. Research agendas in military and state intelligence have a longer history and have come further as a discipline. Landon-Murray (2013) presents a literature inventory and research agenda for intelligence studies. Marrin (2005) argue, much like Calof and Wright (2008), that in CI intelligence should continue to be done within the parameters of other disciplines. Landon-Murray (2013) argues that “Previously, students likely to pursue careers in the intelligence field completed liberal arts degrees—commonly political science and history at the undergraduate level and international relations at the graduate level” (p. 745) and that this corresponds to demand by practitioners: “Intelligence organizations like the Central Intelligence Agency (CIA) do not want graduates who have been educated to be ‘intelligence specialists’” (p. 748). Dorondo (1960) argues that intelligence courses should teach broad concepts from a variety of academic disciplines (like economics, political science and sociology) and issues, with less focus on intelligence specializations. Meredith et al. (2012) argue for greater engagement between academia, BI vendors and BI customers, with an outline of a research agenda. Dhama et al. (2015) present a list of problems that deserve more attention. On the top they place methods for assessing and improving forecasting accuracy and

examining communication of uncertainty using verbal and numerical probabilities. Andrew (1997) wants to see greater intelligence sharing with foreign agencies, which was also what happened later. A similar development is occurring with DaaS today for private organizations where organizations are starting to rent information instead of buying it.

We do not have to agree with all suggestions presented in these research agendas as much will depend on the industry we are in and on when the suggestions were made (many are quickly outdated). To be representative, surveys on research agendas try to gather data from a broad group of users and researchers. Others base their assessment on what has been done previously in scientific journals, thus what seems to be missing, or what authors themselves say are missing. We shall attempt to do both here in this paper.

1.3 Research on intelligence courses offered

There is a positive correlation between the number of researchers in an area, the number of courses and the amount of research produced, even though the causal relationship is less evident.

Again we will have to refer to research done for intelligence studies. According to Campbell (2011):

“Between 1985 and 1999, the number of non-government higher education courses on intelligence increased from 54 to between 200 and 300” (p. 308),

“By 2005 the number of unclassified courses offered within the military intelligence community had grown to 1 417, with National Security Agency (NSA) courses making up 46 percent of this number” (p. 309) and

“The number of non-government courses in intelligence has now grown to over 840, with more than 100 civilian institutions providing some form of intelligence education” (p. 309).

There are no PhD programs in intelligence studies, except for at the American Military University, but it is possible to defend a thesis in intelligence related topics both within business studies and computer sciences in

many countries. See for example Solberg Søylen (2004).

In comparison, courses in CI and intelligence studies in business are probably far fewer even though no similar survey has been published. An unpublished survey from 2004 in Sweden shows that there were 23 courses in *omvärldsanalys* (which translates to “surrounding world analysis”) at Swedish universities and colleges. However, most courses today are offered by business consultants, like the Strategic and Competitive Intelligence Professionals (SCIP) and the Institute for Competitive Intelligence (ICI).

1.4 Research questions

This article is a continuation of the article “A place for intelligence studies as a scientific discipline” (Solberg Søylen, 2015), where focus is on what the journal’s readers want to see articles about. The article also shows what many CI practitioners *think* makes CI unique. The examples show that the content they list is not exclusive to CI. However, the article also suggests that there are problem areas within intelligence studies in business that are not covered by other studies and suggest that these be further investigated to build a research agenda for intelligence studies in business. The article suggests that the lack of scientific development in the field is related to how we chose to define it.

A working hypothesis is that CI is defined differently by different practitioners and that this is a part reason for the confusion. Thus in the survey we asked people to define CI and/or intelligence studies and react to an established definition. In the analysis a number of dimensions are identified in the form of working hypotheses where CI may be said to bridge a gap in relation to other fields of study related to method, perspective, technology, function and actor.

In this article we investigate the working hypotheses and identify a specific research agenda by way of a survey. Two research questions were formulated:

1. What research do practitioners think CI/IS should focus on? (In what areas would you like to see more research?)
2. What definition of CI/IS do practitioners think is better and why? (respondents get to react to an established definition)

Based on these questions three research questions were put in the survey:

1. In what areas would you like to see more research done within competitive intelligence and intelligence studies?
2. What definition of competitive intelligence and/or intelligence studies do you prefer? (How do you define it?)
3. What do you think about this definition:

“Intelligence studies deals with all the things which should be known in advance of initiating a course of action.”

The definition was chosen to extract more information from respondents. The definition from the Clark Task Force of the Hoover Commission was chosen as it is well established, is wider than CI and is the result of a cooperative academic effort. Most other definitions of CI presented are suggested by individual academics or professionals.

2. METHOD

Data was gathered over LinkedIn and the JISIB mailing list. On LinkedIn we posted the survey (surveymonkey.com) at the SCIP members group with a population of ca. 22 000 registered users. The journal JISIB has ca. 800 registered users. The time period allowed for responses was three weeks. In total, 270 complete responses were gathered. Out of these respondents five deep interviews of 30 minutes each were carried out using Skype. These respondents were chosen randomly from different industries to avoid industry-specific interests. The following industries were represented: software, aeronautics, management consulting, pharmaceuticals and academia.

3. DATA

To include data of all responses directly in this paper was not possible due to limited space. Instead we publish every 10th answer, shown in Table 1. The analysis and statistics are done for the whole set. Some shortening of the text as well as language and grammar editing has been done for the original answers.

Table 1 A sample of data gathered from the survey. R indicates the response number, made up of every tenth answer from the survey. Q1 asks: In what areas would you like to see more research done within competitive intelligence and intelligence studies? Q2 asks: What definition of competitive intelligence and/or intelligence studies do you prefer? (How do you define it?) and Q3 asks: What do you think about this definition: "Intelligence studies deals with all the things which should be known in advance of initiating a course of action."

| R | Q1 | Q2 | Q3 |
|-----|---|--|--|
| 10 | Motivations of employees | None | Sometimes we do not take actions, it is more to do with decisions |
| 20 | Foresight | The gathering, analysis and spread of information and knowledge created to support decisions and anticipation | It is about more than what is known, it is about understanding and anticipation |
| 30 | Risk management | All activities undertaken to secure and maintain responsiveness to client needs | All things cannot be known. There are many variables, unseen and unforeseen and observation biases that come into play. |
| 40 | Internet of things | None | None |
| 50 | Strategic conversation (cf. Kees van der Heijden) | Actionable knowledge | I miss the bit that you have to act all the time (where inaction is a type of action) |
| 60 | Cases with Quintuple Helix * | Competitive intelligence must interact with three essential elements: (1) The competitive environment that issues weak signals, (2) The mass of information (big data) that includes weak signals and noise, 3) The decision maker that processes and translates the information | I don't agree with this definition |
| 70 | Veracity of sources ◊ | The study of decision-making based on an understanding of the external competitive environment | Too broad |
| 80 | Competitive intelligence | CI is the process of monitoring the competitive environment | It is a general definition |
| 90 | Intelligence analysis toolsets used in military / government | Insights for strategic and tactical decision-making | The definition broadly covers the meaning |
| 100 | Industry strategy, energy and earth resources | Competitive intelligence concepts for strategy | Could cover the concepts |
| 110 | Science of education | The power of creating an opportunity | Agree |
| 120 | Decision making process and cognitive bias | Decision support tool | Too broad and diverse |
| 130 | International research, in "developing" markets. The application of marketing analysis techniques | The SCIP definition works | No, the decision may be to take no action. That is a decision - not a course of action. |
| 140 | Consumer products, case studies, stories about success and failure | None | Overly wordy |
| 150 | What is the value added of intelligence in business or economics? | CI assembles several practices, theories, models, techniques etc. Maybe an analogy can be in the wine sector, when talking about "assemblage" | The definition is related to Early Warning. I think this may a distinction from others disciplines. "Anticipation" is a key aspect and it needs to be taken into account |
| 160 | Broader, more external perspective | CI is knowledge and foreknowledge about the entire business environment that results in a decision/action | This definition is similar to mine |
| 170 | In the game area | Intelligence studies deals with all signals about things which should be known in advance before the organization initiates a course of action, which should alert the organization about an environmental change with a potential impact | The definition is good, but restrictive |
| 180 | Network/Platform strategy, applications of activity-based intelligence and other "discovery/data intelligence" methods in CI organizational design/agility and CI. CI approaches for Treverton's "mysteries" ∞ rather than existing approaches based on "puzzles" complexity and CI/strategy. More like Dr Rahul Basole is doing with computational enterprise analyticsx | The creation of decision advantage through external observation and sense-making | I don't think the definition is appropriate anymore. It is the product of a legacy of organizational structures, and intelligence targets & methodologies – which have shown to be ill-suited for 21st century problems. Furthermore, the definition presupposes the intel customer has the situational awareness and understanding to know when, if, and where they need to make decisions – they frequently don't. |

| | | | |
|-----|---|---|--|
| 190 | Influence and soft power | To act as a catalyst to concentrate all the national and regional industries, universities and institutions to promote the development and defend the global interest of the nation and region | It seems to be speaking of the same point I made. |
| 200 | Measuring the value of CI, actual impact of CI as part of the decision making process | SCIP definition is fine. Intelligence to enhance business decision-making and organizational performance to create a competitive advantage. | Not good enough. Focus on understanding the external environment as a factor in the decision making process. |
| 210 | Information access and reuse of data. Knowledge about your customers, competitors, etc. | Intelligence assessment | Sounds good |
| 220 | CI in the relationship with organizational ambidexterity | CI helps the managers to understand the complexity of the competitive environment to make the right decisions. | It is too general |
| 230 | Applying data science to competitive intelligence | CI is an ethical and legal way of gathering actionable information | It is right |
| 240 | Data-driven competitive intelligence | I see CI as an information management discipline focused on supporting managerial decisions based on data about the market and the competitors. Intelligence studies is about how to design these information management processes. | Too broad |
| 250 | More industry specific | A tool that helps the anticipation of actions to mitigate failures & crises | Yes, this is a good definition |
| 260 | Health and security | A process of research, development and innovation for better intelligence | Yes I do agree |
| 270 | DaaS | A broad definition is better | Agree |

* *The Triple Helix innovation model focuses on university-industry-government relations. The Quadruple Helix embeds the Triple Helix by adding the 'media-based and culture-based public' and 'civil society' as a fourth helix.*

♠ *Veracity is an open source distributed version control system primarily written by SourceGear LLC which integrates not only the artifacts placed under version control in the repository, but also associated data for features such as the integrated bug tracking system and agile "build management" tool.*

∞ *Gregory F Treveton is the author of Intelligence for an Age of Terror (2009). In the book Treveton explains: "In contrast to puzzles, no evidence can definitely solve mysteries because, typically, they are about people, not things" (p. 18). He suggests that we can normally "know" something based on recent history and perhaps some theory, which factors are important to monitor. This could be applicable, for example, in the case of Russia's inflation rate or whether Israel might strike Iran. For mysteries the product is the best forecast. Treveton also writes about a change from "need to know" to "need to share".*

χ *Rahul Basole is an Associate Professor and Director at the Georgia Institute of Technology. His research fuses system science and visualization to study technology strategy, innovation management, and transformation of complex enterprise systems.*

4. ANALYSIS

The following can be said from the 270 responses and the five deep interviews: answers vary significantly. Respondents may have misunderstood the questions, maybe due to reading and answering too fast, which may be a problem with e-surveys and emails in general today. For example, respondents sometimes did not write definitions where this is asked for and are more interested in promoting their own ideas about CI in general. This information tells us instead how respondents think about CI, which can be useful, but is less useful for answering the specific research questions. It may also be that respondents think very differently about what CI is.

There was no difference in regards to these issues between those who answered on LinkedIn and those who answered by return email. The discrepancy was just as large between the two sources. A large part of respondents who give definition suggestions

seem to have a poor understanding of what a definition is – and what is required of a definition - answering instead with what they see CI as being, how they work with CI or how they would like it to be. However, some careful conclusions can be made for each question.

4.1 Q1: In what areas would you like to see more research done within competitive intelligence and intelligence studies?

Data about what IS researchers should focus on can be divided into the following groups:

1. *analyses*, such as foresight, Cases with Quintuple Helix, Treveton's "mysteries,"
2. *traditional phenomena or problems*, like HRM, risk management, soft power, measuring the value of CI, information access,
3. *new phenomena*, such as the internet of things,aaS solutions,

4. *trans- or cross-disciplinary studies*, such as intelligence analysis toolsets used in military / government, industry strategy, energy and earth resources (geoeconomics) and Applying Data Science to Competitive Intelligence,
5. *methodological issues* such as identifying and avoiding cognitive bias or publishing more cases,
6. *industry specifics* or focusing more on certain industries, such as consumer products, and health and security.

In summary, the most requested areas requested are: analyses, traditional phenomena or problems and trans- or cross-disciplinary studies.

4.2 Q2: What definition of competitive intelligence and/or intelligence studies do you prefer? (How do you define it?)

What elements are emphasized in the definition of CI and IS? The most recurring elements are about the individual steps in the intelligence cycle, responsiveness to client needs, actionable knowledge, signals from the competitive environment, relationships to big data, decision makers, strategy, seeing opportunities (“blue oceans”), knowledge and decision making with the entire business environment in mind.

The most recurring element in the answers is that it’s *about supporting managerial decision and decision-making*. This occurs in 33% of the answers. The second most important element is that it’s *based on an understanding of the external environment* present in 15% of answers. Third is that it’s *about actionable knowledge/information* was included in 11% of answers. Other answers suggest that it’s about following the CI cycle, following customer needs, working in a questions and answer format, a combination of detecting weak signals, applying big data and translating it to decision makers, that it’s linked to strategy or that it’s about putting it all together or acting as a catalyst.

The problem with the answers from the first question is that it’s an area already covered by other established fields of study. There are several journals on decision-making, most of which are related to medicine and health. In SCOPUS there are 4291 articles, books and papers about decision-making in medicine and several journals on the topic, 2183 in decision sciences, 1897 in

computer science, 1505 in psychology, 1477 in health professions, 1476 in nursing, 945 in business, 931 in dentistry, 852 in economics and 797 in mathematics.

The decision-making sciences have their own journals like the journal *Decision Sciences* and societies like the Decision Sciences Institute. Not only practitioners but even most academics pay little attention to these overlaps. Thus SCIP focuses on decision-making in their definitions and material, like when the organization says it “focuses on decision-making, to create competitive advantage”. CI defined on Wikipedia also emphasizes decision-making.

The second most popular answer, that the study is about the understanding of the external environment, is a unique definition as that notion is not covered by other established scientific disciplines as far as I have been able to see. No other established research communities are looking at this phenomenon today it seems.

The third most popular answer, that it’s about actionable knowledge/information, talks about an end product, or the end result of the intelligence process. As such, it is considered too narrow to build the basis for a scientific study. As a curiosity, only a few of the 270 respondents use the term preferred by Google in their new BI service, “actionable insights.”

4.3 Q3: What do you think about this definition:

“Intelligence studies deals with all the things which should be known in advance of initiating a course of action.”

For the third question we wanted to extract information from respondents by asking them to respond to an established definition. In total, 46% of respondents thought the definition by the Hoover commission can be used for intelligence studies and CI. A further 17% of respondents have objections toward the notion of “should be known” in the definition, as they argue that CI is largely about what you cannot know in advance. Another 17% think that the definition is too broad and 12.5% of respondents have objections to the use of the term ‘action,’ which they see as significantly different from the term ‘decision,’ which they prefer.

5. DISCUSSION

5.1 The problem of overlapping definitions

The definitions of CI, marketing intelligence and market intelligence are too close and overlapping to be separate disciplines. A comparison of definitions on Wikipedia illustrates this (*italics added by author*):

- A. “Competitive intelligence is the action of defining, gathering, analyzing, and distributing intelligence about products, customers, competitors, and any aspect of the environment *needed to support executives and managers making strategic decisions* for an organization.”
- B. “Marketing intelligence (MI) is the everyday information relevant to a company’s markets, gathered and analyzed specifically *for the purpose of accurate and confident decision-making* in determining market opportunity, market penetration strategy, and market development metrics. Marketing intelligence is necessary when entering a foreign market.”
- C. “Market intelligence is the information relevant to a company’s markets, gathered and analyzed specifically *for the purpose of accurate and confident decision-making* in determining strategy in areas such as market opportunity, market penetration strategy, and market development.”

Despite this, CI and marketing intelligence have developed into two separate professional and academic communities with their own groups of scholars, journal and conferences. Marketing intelligence has developed within the study of marketing, CI largely on the outside. Market intelligence has developed as a hybrid and a parallel to CI within marketing. For comparison we could also add strategic intelligence:

- D. “Strategic intelligence (STRATINT) pertains both to the collection, processing, analysis, and dissemination of intelligence that is

required for forming policy and military plans at the national and international level and to qualities that equip leaders to be effective strategists.”

Strategic intelligence follows the elements of the intelligence cycle and is directed towards strategy. In the definition from Wikipedia it is used for state and military intelligence. However, the term is frequently used in business contexts, as a quick search in any of the scientific databases will show.

5.2 The relationship between fields of study and scientific journals

Any scientific field of study must be related to one or more scientific journals. If we start from the top, or from a broad perspective, all journal names with the term ‘intelligence’ in the most prestigious scientific database, Web of Science, are related to the study of psychology. In the database Scopus there are others. When we go down to the level of articles 73,381 in Scopus are on ‘intelligence.’ Of these, 66,448 are in computer science and 38,597 are in mathematics. Further down the list comes business with 1450 articles and there are 470 in decision sciences alone. Of these, most articles are published in *Marketing Intelligence and Planning* (Emerald) (756), *International Journal of Technology Intelligence and Planning* (Inderscience) (224), *International Journal of Business Intelligence and Data Mining* (Inderscience) (200) and the *Journal of Intelligence Studies in Business* (Halmstad University) (46).

Past and present journals that are outside of the two major databases or non peer-reviewed include the journal *Business Intelligence* (from 07/01/2003, 6 months), *Competitive Intelligence Review* (From 1998 to 2001 in Wiley-Blackwell Journals, Frontfile Content), *International Journal of Intelligence and Counterintelligence*, and *GfK Marketing Intelligence Review*. The *Journal of Competitive Intelligence and Management* (JCIM) cannot be accessed through university databases at present (property of SCIP).

The number of specific articles published about CI, marketing intelligence, market intelligence and strategic intelligence in each of these journals are listed in Table 2.

Table 2 Studies and corresponding scientific journals. The keywords list the fields of study by relevant terms. The first column lists first names of journals in the fields. The figures represent number of articles. At the end there is a summary of articles in each field and a division of classification it is listed as a paper in business, decision science or social sciences. Rank indicates the summation of articles.

| <i>Journal Name</i> | <i>Key words</i> | | | | <i>Sum</i> | <i>Rank</i> |
|---|---------------------------------|----------------------------|-------------------------------|-------------------------------|------------|-------------|
| | <i>Competitive Intelligence</i> | <i>Market Intelligence</i> | <i>Marketing intelligence</i> | <i>Strategic intelligence</i> | | |
| <i>Decision Support Systems</i> | 50 | 37 | 16 | 21 | 124 | 1 |
| <i>Journal of Intelligence Studies in Business</i> | 46 | 8 | 6 | 19 | 79 | 3 |
| <i>International Journal of Technology Management</i> | 39 | 13 | 3 | 18 | 73 | 4 |
| <i>Information and Management</i> | 23 | 4 | 7 | 16 | 50 | 6 |
| <i>Strategic Management Journal</i> | 22 | 4 | 5 | 13 | 44 | 8 |
| <i>Long Range Planning</i> | 20 | 10 | 5 | 25 | 60 | 5 |
| <i>Marketing Intelligence and Planning</i> | 10 | 34 | 42 | 12 | 98 | 2 |
| <i>Management Science</i> | 14 | 14 | 9 | 12 | 49 | 7 |
| <i>Industrial Marketing Management</i> | 8 | 13 | 13 | 6 | 40 | 9 |
| <i>Journal of Business Research</i> | 3 | 10 | 7 | 4 | 24 | 10 |
| <i>Europan Journal of Marketing</i> | 0 | 6 | 12 | 0 | 18 | 12 |
| <i>Journal of Strategic Studies</i> | 0 | 0 | 0 | 21 | 21 | 11 |
| SCOPUS (total results) | 9185 | 7473 | 2890 | 5633 | | |
| Business | 1676 | 1507 | 776 | 1025 | | |
| Decision Sciences | 876 | 517 | 213 | 507 | | |
| Social Sciences | 711 | 592 | 206 | 808 | | |

Decision Support Systems has the most articles published in CI, but then it has been listed in Web of Science since 1991. JISIB is number two, but published its first issue in 2011. *Marketing Intelligence and Planning* is not listed in WoS, but has been in Scopus since 1983. Thus based on the age and name of the journal it is no surprise that it is leading in articles on marketing intelligence and is number two in market intelligence, after

Decision Support Systems. *Long Range Planning* has the most articles in strategic intelligence (business context) and has been listed in WoS since 1986. Considering that JISIB, with only four years of publications, is already the third most published journal in these fields we can conclude that the other journals, with far more issues and articles per year, publish a modest number of articles on the subjects of CI, market intelligence,

marketing intelligence and strategic intelligence.

Intelligence studies in business cannot define itself as yet another version of the same, but must be defined as different from other disciplines. In the survey we saw that respondents favored a focus on the external environment in the definition and that this term is not occupied by other studies or scientific journals. This is also the understanding of a much cited article by Chen et al. (2002): "Competitive Intelligence (CI) aims to monitor a firm's external environment for information relevant to its decision-making process" p. 1. A suggestion based on the data collected in our survey could be that:

- E. Intelligence studies in business is about how companies study their external environment and how that contributes to their competitive advantage.

In an earlier article Gbosbal and Kim (1986) speak about "environmental intelligence" in the same way. Gilad (1989) makes the same distinction between CI, as scanning competitors and markets as opposed to environmental scanning, which is much broader, but also where it is more difficult to add value.

When we compare the literature, marketing intelligence is more about the micro perspective, what is going on in the company and the market. Only to a lesser degree does it study the macro factors that influence that market (macro-economic, political, judicial, environmental, scientific, technological, social, infrastructural factors). Intelligence studies, on the other hand, is just as much about the macro perspective, the factors that the company cannot influence but have a decisive effect on its operations. Simply put, it's about what goes on in the world and how that affects the company's competitive advantage.

It is also about the company perspective, not about the perspective of the state, which again separates it from [state or military] intelligence studies.

Respondents found the definition of The Clark Task Force of the Hoover Commission from 1953-55 to be good, but too broad. For the sake of order it's reaped here:

- F. "Intelligence deals with all the things which should be known in advance of initiating a course of action."

In summary, definition E seems to be the best option when compared to the data gathered in the survey and from the deep interviews.

5.3 Setting a research agenda: the broader perspective

The suggestions by the respondents in the survey and the deep interviews gave us a list for a research agenda. In this paper, however, there must also be room for a broader discussion where less frequent answers are discussed.

The question of a research agenda is ultimately the question of how and where we as employees in companies may learn about the surrounding world that is relevant for the competitive advantage of the organization. Gilad (1989) suggests that the irrelevance of much environmental scanning can be solved by looking beyond obvious sources ("be entrepreneurial"), by harvesting the power of the entire company ("be economic") and by focusing on what specific users say they need ("be essential") (Idem).

Setting a research agenda is also a question of who can do the job. Does it have to be CI experts? Are we looking at some sort of super librarian for the web 2.0 age? CI has for a long time been of interest to the library sciences, even though librarians have their own journals and professional societies. Can't we give the whole job to a computer geek? After all business intelligence, big data and the internet of things are mainly studied by engineering types. Or, to take a diagonally opposite view, maybe the whole thing can be given to a good social science researcher or a wise man (as in the humanities). After all, for each question we ask about the world there is a set of answers and the scientific methods are the same, shared by all of the social sciences and some of the humanities. The ways we answer these questions gives birth not only to different research agendas but also decides the scientific home of the study.

For now, let's simply acknowledge that there will be different approaches and that some academic groups like BI are more successful scientifically than others. That is largely the result of being more relevant.

As for the question of how and where we may learn the most about keeping an organization competitive, there are numerous

possible answers, of which many have been suggested in terms of the topics in this survey. If we look to existing theory, much of the literature focus on different flows of information into organizations, starting with the article by Gbosbal and Kim (1986) focusing on trade publications, suppliers, bankers, consultants and customers. Another approach that continues to attract little or no attention in the scientific literature is travelling and reading, maybe in part because they are thought to belong to the humanities, the study of history, geography and literature.

5.3.1 Travelling as a way to learn about the external environment

A good intelligence worker or analyst is a person who has travelled and seen a lot, is well-read and is part of an influential network of people, according to the formula: reading, watching and listening. We must read broadly and in order to watch and listen we need to travel. To identify the macro factors in the larger, international environment, we need to know what is going on in the world because things in the world affect us. This is the perspective of intelligence as surrounding world analysis, as defined by Stevan Dedijer, but also suggested by respondents in the survey. As such, it is very different from what students learn at university in the social sciences.

The intelligence expert should be able to solve the following problem given by a decision maker: "I need to make this decision, now tell me what I need to know to do it correctly." How do we study and train employees for this task? There are basically two questions; what is it that I need to know and how do I become good at it? The point made here is that the answer to these questions should also decide the research direction of the discipline. It is suggested here that we become good at CI also by travelling and seeing the world. Or, recalling the story of Drucker in the introduction, we are often better off reading books, instead of reading scientific articles, which tend to give a fragmented and overly theoretical (dogmatic) view on reality.

The notion of "learning by travelling" has been a method followed ever since Marco Polo went on his big journey and wrote a book about it, and Peter the Great went to the Netherlands to learn how to build ships. It was the tradition of the English aristocracy with the "Grand Tour" and it has been the method of big industrialists, like Ferdinand Porsche

when he visited the US to learn about mass production at the Ford factory and when Robert Bosch went to work with Thomas Edison in New York. In Germany it was and to some extent still is the tradition that young apprentices organized in student unions (Burschenschaft) traveled (Wanderjahre) for some years before they set up their own shop, much like in Goethe's novel "Wilhelm Meisters Wanderjahre" (See also Steer, 2008). In much the same way, state intelligence organizations have thousands of people stationed in other countries and other departments, such as the foreign department, and make sure their employees travel the world on a regular basis if for nothing else than to keep up with current affairs. If this is a relevant direction in reality then it should be so in theory too. Still there is little research in this direction.

The problem is to a large extent that the neoclassical paradigm, which still dominates studies in business and economics, despite the fact that its usefulness has been refuted decades ago (see, for example, Hodgson, 1988). Neoclassic scholars consistently avoid topics covered by the humanities, which they see as less scientific just because they are less rigid simply because they belong to another domain of knowledge about human life.

In other words, the problem is to a large extent the way we define what is scientific for the study of man. Many will argue that intelligence as "wandering around the world" is more fitted as a study for the humanities. In comparison, Asian societies have been more inclined to see competitive questions from a broader and more practical perspective (Japan in 1960s and 1970s, China today) while Western societies, since the 1970s, have come to see travelling primarily as entertainment and personal enrichment (an end in itself).

My students have hardly heard about the twin cities of Chongqing and Chengdu as one of the great industrial hearts of the world, and they are ignorant about Wenzhou, where around 90% of global eyewear is made, Guangzhou, where around 70% of bags and suitcases for European and US mass markets are made, or any of the other 50 or so Chinese niche cities. Instead they know (much like consumers) about the brands themselves – not how they are made, or where or who the owners are. The business schools where they go continue to spread a curriculum void of historical parallels, detached from geography, with no real interest in questions of

ownership, but filled with oversimplified business models, common sense truisms and gossip about fast fortunes made (success stories).

The development of the social sciences after WWII lead to an extreme form of compartmentalization (specialization not being the major problem), of which intelligence studies has also been a victim to the point that it almost annihilated itself as a study with CI. This can also be explained by the study's false perception of itself, as the topic was driven forward by practitioners, more as a consultancy fashion and a fad than a scientific study. From a consultancy perspective one might say there is nothing wrong with this. As one term gets used up (does not sell) another is introduced, much like when CI consultants exchanged CI with market intelligence and today market intelligence with foresight, much without thinking about the difference in meanings. From a science perspective, however, this is troublesome.

5.3.2 Reading as a way to learn about the external environment

Maybe reading is just another way of travelling. Anyway, surfing the internet is not the same thing. It's an illusion to think that we have become smarter because of the increased amount of data *available* on the internet. Most new data added each day are YouTube videos (all those funny cats and dogs), our comments on Facebook and Twitter, information which is not even accurate or interesting, but appeals to our narcissistic and voyeuristic nature. I will keep this discussion for an upcoming article, dealing with DaaS and other aaS.

Reading is mostly a missed opportunity. Much valuable information and knowledge is only available in books (including e-books) but the knowledge they contain demands time for reading and reflection. We also need to read continuously because we forget continuously. Intelligence work is just as much about finding time to become knowledgeable. Instead our days are filled with disruptions and multitasking, which basically means doing many things poorly. Surfing and sifting through information and knowing where it is is not the same as knowing, much less remembering. For example the NSA knows it has data about future crimes and terrorist attacks, but it cannot extract it, so it does not matter. On the other hand, they have so much

data that they can always find something that looks suspicious but isn't. Amazon.com has plenty of data about what I read but cannot tell me what book I want to read next.

Our open office landscapes and working environments are not made for reading. When we come home we have other (family) obligations. Trying to catch up with the world for 5-15 minutes before falling asleep by stacking books on the bedside table is not a solution. The best opportunity many of us have for reading is to do this while travelling: on planes, in cars (audio), in airports and on trains. Others try to catch up during summer vacation, but it is mostly a romantic image. Disruptions are also the nature of vacations. Thus instead of reading we have skimming. Instead of knowing we have know-about. Instead of building our own opinion we follow those of others who somehow seem to us to know more. We follow management fads like "blue oceans," co-creation, innovation or CSR, simply because it seems a good idea at the time and critical thinking somehow takes too long. Of course, most people are too busy being entertained to read anything at all. All of this is no critical of any individual or mankind, simply a reminder of our cognitive limits.

There are basically two ways to learn, through our own personal experience and those of others. What we read, watch or listen to depends on what we want to know, for example what industry we are studying, but we can still say something in general about types of sources, their relevance to the questions we face and the degree of trust we can place in their answers. Table 3 summarizes these sources of information and how we interpret them.

The problem with types of sources is often a tradeoff between trust and relevance. It's easy and quick to see what is relevant, but it takes time to write it and to make it trustworthy. By the time the product (book) is ready many will have forgotten and moved on to the next big thing. Instead we need to learn to wait for the book. Popular sources know what we want to know but cannot deliver the answers. Their headlines become unfulfilled promises. Scientific sources are often too narrow to be relevant, focusing on some narrow correlation.

Still, we can give some general advice for reading to break with some of our worst biases: try to read in different languages (to get different perspectives), rotate your sources, for example every year (for example,

Table 3 Media sources and trust.

| <i>Source type</i> | <i>Example</i> | <i>Type</i> | <i>Trust</i> | <i>Relevance</i> |
|--|-----------------------------|------------------|--------------|------------------|
| Scientific books | Springer-Verlag | Reading | Very high | Medium |
| Popular books | Bantam publishers | Reading | High | High |
| Scientific articles | <i>Journal of Marketing</i> | Reading | Very high | Medium |
| Popular articles (including newspapers articles) | The Economist | Reading | High | Medium |
| Reports, white papers | EIU: country reports | Reading | High | High |
| Social media messages | Twitter | Reading/watching | Low | Low |
| Video and TV programs | YouTube or CNN | Watching | Low | Low |
| Radio programs | BBC World News | Listening | Medium | Medium |
| Podcasts | Local radio stations | Listening | Low | Low |

exchange the Economist with der Spiegel). Break your own search patterns, letting chance chose for you. For example buy books at bookshops where you are more likely to find books you did not know of before.

Moreover, good intelligence is about the network of people you have access to. Informed and resourceful people tend to find each other at the best at places like the World Economic Forum. LinkedIn is a pseudo version of a good network, more suited for marketing purposes. Being informed is a question of who we chose to listen to, but also who we have access to. Besides books, the most important source for intelligence in business is industry reports and country reports, more so than even scientific articles.

5.3.3 Industry and country reports as a way to learn about the external environment

The longer we have been in a business, the more we know about it (even though there is always a risk that we become blind to solutions because we get stuck in habits). Industry experts frequently claim they require no help from CI experts as they do not know the business. This is a dilemma; the CI expert comes with a toolbox but frequently doesn't know the material he is set to work with. It's impossible to be an expert on all industries, simply because there are so many and they are so different. At the same time, their numbers are finite and there is some consensus about their classification.

The Harvard Business School (HBS) site lists around 50 different industries on its website, the Economist Intelligence Unit (EIU) site lists about 100 "subjects" (Table 4). Together they give us an idea about the scope of what we need to know for the competitive advantage of companies. The HBS list consists of: accommodation, accounting, advertising, aerospace, agriculture and agribusiness, air transportation, apparel and accessories, auto,

banking, beauty and cosmetics, biotechnology, chemical, communications, computer, construction, consulting, consumer products, education, electronics, employment, energy, entertainment and recreation, fashion, financial services, food and beverage, health, information, information technology, insurance, journalism and news, legal services, manufacturing, media and broadcasting, medical devices and supplies, motion pictures and video, music, pharmaceutical, public administration, public relations, publishing, real estate, retail, service, sports, technology, telecommunications, tourism and transportation.

Out of fifty-two industries, twenty-four can be classified as production (46%). They represent 41.8% of the papers available on the HBS site. This is of importance for the competitive advantage of nations, which builds largely on our ability to export, a lesson often forgotten (Solberg Søilen, 2012b).

Some industries are underrepresented in the number of studies: these include the insurance industry, travel, accommodation (hotels), tourism and medical devices. Some divisions are also misleading, like the separation between IT (1) and technology (126). The aerospace industry has few studies, but it's also an industry with few actors. Some areas may be said to be overrepresented in terms of the number of reports or information available about them: these include publishing (48), health (106) and financial services (180). The amount of papers says nothing about the quality of information.

For the "subjects" listed by EIU, I have divided them into industries, analyses, studies and topics in Table 4. The reason for this mix of categories by EIU has to do with the kind of knowledge customers ask for and the specialties of EIU employees.

Topics are open to larger changes over time, industries less so. As indicated by respondents

Table 4 EIU subjects.

| No. | Industry | Analysis | Discipline/Study | Topic |
|-----|-------------------------------------|---|---------------------------------------|---------------------------------------|
| 1 | Automotive | Benchmarking | Economics | Business environment |
| 2 | Banking | Company analysis | Innovation | Capital flows |
| 3 | Education | Competitiveness | International relations | Productivity Sovereign credit/risk |
| 4 | Energy | Corporate strategy | SMEs and entrepreneurship | Cities |
| 5 | Financial services | Country data | Geopolitics | Mercosur |
| 6 | Food security | Country risk | Econometrics | Commercial research and advisory |
| 7 | Healthcare | Credit risk | Labour | Consumer goods |
| 8 | Investment | Demographics | Macroeconomics | Cost of living |
| 9 | Islamic finance | Risk | Monetary policy | Livability |
| 10 | Cross border finance and investment | Forecasting and policy analysis | Migration | Currency |
| 11 | Debt markets | Predictive modelling Regulatory impact | China | Data services |
| 12 | Oil | Global trends | Climate change | Infrastructure |
| 13 | Retail | Indices | Democracy | Global economy |
| 14 | | Market entry | Emerging markets | Development |
| 15 | | Operational risk | EU integration | Gender |
| 16 | | | Foreign direct investment Politics | Economy |
| 17 | | | Public policy | Foreign policy |
| 18 | | | Research | Employment Environment |
| 19 | | | Scenario analysis | Evidence-based solutions |
| 20 | | | Security | |

in this survey there is a demand for research papers in specific industries. Our lists show the scope for such studies. We could also have listed country reports, which besides industry reports are the major focus of EIU, but these are obvious for everyone with an elementary course on geography.

6. CONCLUSIONS AND IMPLICATIONS

In this paper we identify a research agenda for CI and intelligence studies in business. According to respondents, practitioners and academics should focus on *analyses*, such as foresight, cases with Quintuple Helix, Treverton's "mysteries", *traditional phenomena or problems*, such as HRM, risk management, soft power, measuring the value of CI, information access, *new phenomena*, like the internet of things,aaS solutions, *trans- or cross-disciplinary studies*, such as intelligence analysis toolsets used in military or government, industry strategy, energy and

earth resources (geoeconomics), applying data science to competitive intelligence, *methodological issues* such as identifying and avoiding cognitive bias or publishing more cases and *industry specifics*, or focusing more on certain industries, like consumer products, and health and security.

Respondents think that CI should be defined around *supporting managerial decisions and decision-making* but in this article we show that this is associated with certain methodological problems, as the area identified is already covered by other scientific groups and journals. The result is a considerable overlap. Respondents' second suggestion is that the definition should be around the *understanding of the external environment*. This is a better definition from the point of view of defining a unique research agenda. It also corresponds with the understanding of intelligence as *surrounding world analysis* and the broader definition of social intelligence as defined by Stevan Dedijer.

In the discussion we try to show how the development towards compartmentalization in the social sciences has been to a disadvantage to the development of CI and intelligence studies in business as disciplines. We show how notions like reading and travelling have always been the way companies have learned about the surrounding world and suggest reasons for why this lesson has been forgotten.

The implication of this research helps to form some consensus around what kind of problems are interesting for researchers to take on for intelligence studies in business. There are suggestions in the discussion of this paper that indicate that it would be of interest to see a compilation of courses offered in CI and its equivalents around the world. It would also be interesting to see how the tradition of traveling-as-learning continues in companies today. Furthermore, it is of interest to better understand how companies succeed with intelligence within specific industries or subject areas.

The future of intelligence studies in business continues to lie primarily with its symbiosis with new technology. A generation ago it was the development of software, business intelligence, but it is now with Cloud solutions, DaaS and other members of theaaS family. Managerial aspects cannot be developed independently. Zhiqiang et al. (2012) show how CI can be integrated in BI, but more and broader research in this direction is required.

BI may represent tremendous business opportunities in dollar terms, but these systems and software are by themselves nothing but empty shells. They do not become valuable before we fill them with good intelligence. Intelligence systems are primarily about content, not technology. Intelligence studies in business are about how we build that content for the surrounding world of any private organization.

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