Article title: Synergies between competitive intelligence and foresight: Towards a joint research agenda

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Statement on the use of AI

During the preparation of this work the author used Google Gemini after the article was written to improve the readability of the manuscript. The following chat prompt was used:

> *Attached is an article that I am writing for a top academic journal Please do a lite edit of it correcting, tense, punctuation, grammar, sentence structure etc. Keep track of every change you make and after fixing the article provide a list of all them.*

The list of changes so that the author could review and decide it the change was appropriate. There were several times where Gemini's changes were reverse.

Keywords

Competitive intelligence, intelligence, foresight

Synergies between competitive intelligence and foresight: Towards a joint research agenda

Abstract

For several years, foresight and competitive intelligence (CI) professionals have worked together, learning from each other and adopting each other's approaches. For example, in 2024 an affiliation agreement was signed between a CI and a foresight association. This article examines this professional development and looks at the extent to which academia has done the same. A SCOPUS search for articles that included both "competitive intelligence" and "foresight" in the keywords yielded very little: only 10 articles were found, and only two had both foresight and CI team members. Research ideas and approaches are suggested that can help each field individually and also collectively that could fill this void and potentially provide guidance to practitioners.

Introduction

In April 2024, the Association for Professional Futurists (APF) signed an affiliation agreement with the Strategic and Competitive Intelligence Professionals (SCIP). This was the culmination of several years of joint activity between competitive intelligence professionals and foresight/futurist professionals. This was recognition that both fields could benefit from each other and should work together.

The purpose of this paper is to explore the growth of this professional affiliation and examine the extent to which Foresight and Competitive Intelligence academics have similarly "joined together. The article also looks at possible research collaborations between the two fields.

Defining competitive intelligence

CI as a formal discipline under that name with organizational units emerged in the late 1970s (Du Toit, 2015). Other research points to examples of competitive intelligence dating back over 1,000 years (Juhari & Stephens, 2006). The literature provides several definitions of competitive intelligence. One of the most robust is that of Madureira et al. (2023) which was developed based on an analysis of 1,290 publications and interviews with 61 CI subject-matter experts. Based on this analysis, the authors defined CI as "the process and forward-looking practices used in producing knowledge about the competitive environment to improve organizational performance" (p. 13).

For purposes of this paper, it is also of interest that foresight appeared in several elements of the Madureira et al. (2023) paper, including the purpose of conducting competitive intelligence (helping decisions by providing early warning through foresight systems); the output of the intelligence process (foresight as an outcome); and an individual capability for those developing competitive intelligence (foresight as a skillset for CI professionals).

The Strategic and Competitive Intelligence Professionals (SCIP) defines competitive intelligence as "a discipline that enables organizations to reduce strategic risk and increase revenue opportunities by having a deep understanding of what has happened, what is happening, and

what may happen in their operating environment. Competitive intelligence professionals are skilled at ethically collecting information from diverse sources, using a variety of structured analytical techniques, and communicating perspectives and insights to improve the quality of an organization's growth decisions" (SCIP, 2024).

Both definitions suggest that CI is a systematic process in which intelligence is created within a process and structure. In examining the CI practices of European firms, Calof et al. (2017) studied several aspects of this system. They found that CI supported a broad range of decisions, including corporate and business strategy, business development, market entry, product development, and research and technology development. The primary focus of intelligence efforts was customers and competitors. A breakdown of time spent on intelligence development revealed that 12% was spent on planning, 25% on collecting information, 28% on analysis, 18% on communications, and 17% on managing the CI project, including assessing effectiveness.

The Calof et al (2017) study not only examined how CI projects were conducted but also the overall structure of the respondents' organizations as it applies to CI. Of the respondents, 87% had some kind of CI structure in their organization, (formal, decentralized, etc.); 70% had managers assigned with CI responsibility; and 48% had formal CI ethics guidelines. The study also examined the role of the organization's employees in competitive intelligence activities. When asked whether employees knew that CI existed in the organization, over 50% responded that most or all employees knew about it. When asked about employees participating in CI activities (most would be providing information), 19% said most or all employees participated, and 53% responded that some do. Rohrbeck & Kum (2018), in their foresight maturity model questionnaire, examine similar process elements for evaluating foresight capability in organizations.

The above provides *Futures* readers with a brief glimpse into how the CI field defines competitive intelligence and provides a few links it to the foresight field.

Professional linkages between foresight and competitive intelligence

As mentioned in the introduction, APF and SCIP became affiliates in April 2024. In 2023, APF's then-board chair, Tanja Schindler, was appointed to SCIP's board of advisors. A year earlier, the Competitive Intelligence Fellows (a CI honorees group) had a conference devoted to strategic foresight. In the same year, the APF had a session titled "Competitive Intelligence vs. Futures Intelligence." The panel included both foresight and intelligence practitioners, and discussions were focused on "the advantages, differences, and mutual benefits of both disciplines" (APF 2022). In their review of the future of intelligence (which was based on the presentations at the SCIP 2023 Europe conference), Calof and Cekuls (2023) reported that foresight was mentioned in several sessions. For example, in a keynote address APF's chairperson, Tanja Schindler, discussed he evolution of CI. Ms. Schindler described CI as having started as competitor intelligence in its early years, evolving into market intelligence, then business intelligence, and recently (2010s to the present) into futures intelligence, with a focus on anticipating scenarios

and shaping the future. This is also consistent with the Madureira et al. (2023) findings in which CI leaders included foresight as part of the CI toolkit.

At the professional level, both fields have recognized linkages. This includes CI and foresight professionals teaming up and CI and foresight adopting each other's practices.

Academic linkages between foresight and competitive intelligence

To identify published academic work on CI and foresight (together), a SCOPUS search was conducted using the query 'foresight AND competitive intelligence' in the article title, abstract, or keywords. 24 articles were found, of which 10 had both 'CI' and 'foresight' in their keywords. Table 1 is a list of those 10 articles along with the assessment of them using the following approach:

- Was the author team composed of both CI and foresight academics? CI academic expertise was defined as being a CI Fellow or being selected as an academic expert in the Madureira et al. (2023) study. Only one article, Calof, Smith, and Richards (2015), had recognized expertise in both fields: Calof in competitive intelligence (both in the Madureira et al. study and a CI Fellow) and Smith in foresight (a former Chief Foresight Officer for the government of Canada). The article by Canongia, et al (2004) had CI listed for one of the authors in their Google profile. All other articles were authored by either CI academics, foresight academics, or neither.
- Did the article itself focus on both foresight and CI? This was assessed by the number of words in the article with 'foresight,' 'competitive intelligence,' and 'intelligence,' as well as a reading of the article itself. Focus was defined as a relatively equal number of foresight and competitive intelligence/intelligence words and a clear focus on both areas in the review of the article. Three articles met this criteria including the two mentioned above and Hakmaoui et al. (2022).

The majority of articles were articles about CI that were in foresight journals. In these cases, the discussion of foresight or CI was mainly to inform the reader about CI and its similarities and differences with foresight.

Therefore, compared to the professional realm, there has been little joint activity between CI and foresight academics, or even research in which CI or foresight examined the other field.

Table 1: Scholarship in CI and Foresight together: SCOPUS indexed articles with CI and Foresight in the keywords

Authors	Title	Year	Journal	Paper focus	Foresight & CI authors
Canongia C.; Antunes A.; Pereira M.D.N.F.	Technological foresight - The use of biotechnology in the development of new drugs against breast cancer	2004	Technovation	CI and foresight secondary	CI in google scholar profile
Mietzner D.; Reger G.	Future scenarios of the technological knowledge generation by multinational enterprises	2007	International Journal of Technology Intelligence and Planning	foresight for intelligence readers	No
Rohrbeck R.; Gemünden H.G.	Corporate foresight: Its three roles in enhancing the innovation capacity of a firm	2011	Technological Forecasting and Social Change	Foresight for foresight readers	No
Olsmats C.; Kaivo-oja J.	European packaging industry foresight study—identifying global drivers and driven packaging industry implications of the global megatrends	2014	European Journal of Futures Research	Foresight for futures readers	No
Calof J.; Richards G.; Smith J.	Foresight, competitive intelligence and business analytics - Tools for making industrial programmes more efficient	2015	Foresight Russia	CI and foresight for foresight readers	Yes
Calof J.	Reflections on the Canadian Government in competitive intelligence – programs and impacts	2017	Foresight	CI for foresight readers	No
Calof J.; Arcos R.; Sewdass N.	Competitive intelligence practices of European firms	2018	Technology Analysis and Strategic Management	CI for foresight readers	No
Calof J.	The impact of firm size on competitive intelligence activities	2020	Foresight	CI for foresight readers	No
Hakmaoui A.; Oubrich M.; Calof J.; El Ghazi H.	Towards an anticipatory system incorporating corporate foresight and competitive intelligence in creating knowledge: a longitudinal Moroccan bank case study	2022	Technological Forecasting and Social Change	CI and foresight for foresight readers	No
Calof J.; Cekuls A.	SCIP Prague 2023 – Academic Track: What is the future direction of competitive intelligence	2023	Journal of Intelligence Studies in Business	CI for foresight readers	No

What are the articles saying about foresight and CI?

The few articles found through SCOPUS were examined to determine how they positioned the two fields, particularly the synergies between them.

CI Fellow Neugarten, in his abstract in Futures, wrote that "the practice of both competitive intelligence (CI) and foresight attempt to prevent strategic surprise by noticing and attending to signals earlier rather than later" (Neugarten 2006, p. 894). Trujillo-Cabezas (2020) wrote that "both competitive intelligence and foresight create knowledge about the future" (p. 1). Hakmaoui et al. (2022) noted that both fields focus on helping organizations make decisions based on an understanding of the external environment. The limited research suggests that both fields examine the external environment to inform decision-making.

Articles also described what each field can learn from the other. Neugarten (2006), proposes an approach he developed for CI that can help foresight. Similarly, Bisson and Diner (2017), using concepts and approaches from competitive intelligence, provide advice to foresight readers for developing a better strategic early warning system.

Research has also pointed to an overlap in approach between CI and foresight. Both fields mention information collection and sensors that process information through various analytical models. In Calof et al. (2017), the most frequently used models were SWOT, benchmarking, industry analysis, patent and technology forecasting. Saritas et al. (2022), in reviewing the evolution of foresight, also mentioned many of these techniques. Schwartz (2012) also found that both foresight and CI use similar analytical techniques.

Regarding differences, Calof and Smith (2009) noted many similarities between the fields but also some key differences, suggesting that both fields, because of the similarities and differences, should work together. For example, they described a perspective difference: CI being described as inside out and foresight as outside in. CI starts with the organization's strategy (existing or proposed) and asks if it will work in the future environment. Foresight, according to the authors, looks outside first, examining possible future environments, and then asks what strategy/strategies/approaches will work in that environment or how to create a desired future. The authors mentioned a temporal orientation difference, with foresight looking further out (number of years) than competitive intelligence.

There is another stream of literature that postulates that the fields provide input to the other—a synergy potential. El-Akrouchi et al. (2021) wrote, "An extremely competitive business environment requires every company to monitor its competitors and anticipate future opportunities and risks, creating a dire need for competitive intelligence. In response to this need, foresight study became a prominent field, especially the concept of weak signal detection" (p. 1). Canongea et al. (2004) described how competitive intelligence was a tool that could be used to support technological foresight activities. Sarpong et al. (2013) saw CI as a method in foresight, constituting an element of strategic foresight. Sokolov and Chulok (2016) wrote that "Foresight can act as an instrument of "strategic intelligence" anticipating the emergence of new research areas at the intersection of established fields of science" (p. 18).

The two fields working synergistically are also mentioned in a few of the articles in table 1. Canongia et al. (2004), deepened in Canongia (2007), wrote, "given a new competitive paradigm that is increasingly complex, demands call for new management models, and it is here that the importance of approaches such as Competitive Intelligence, Knowledge Management and Technological Foresight becomes evident" (p. 59). They proposed a model in which the three areas work together, each with distinct roles with some overlap. CI in their model focuses on competitors and markets, foresight on trends, and knowledge management on competencies.

Several years later, Calof, Smith, and Richards (2015) wrote how foresight, competitive intelligence (and business analytics) need to work together ""An integrated programme involving foresight, competitive intelligence and business analytics assists in decreasing the probability of the risks and problems describe better designed and more successful industrial policy" (page 68)." They looked at a potential technology support program (for both R&D and commercialization), suggesting that given the long, time frames and associated environmental uncertainty associated with these activities, foresight should be used to identify plausible global technology directions (to ensure that funds were invested in the appropriate technologies) and identify a preferred future. Competitive intelligence would be used to understand what kind of government support would be needed to encourage companies to apply for the program and, in turn, work towards the intended technology direction of the program. Competitive intelligence, customer intelligence, and technology intelligence would be used to help target and design the support program based on being informed from foresight. CI and foresight would be used throughout the life of the program to see if any changes were needed should the program no longer be aligned with the future environment or if the research activities were not going to lead to future desired program outcomes.

Later, Hakmaoui et al. (2022) conducted a case study of a Moroccan bank that had four competitive intelligence units and three foresight units. The researchers found that each discipline (foresight and competitive intelligence) had a different focus: "CI activities concentrate more on commercial and competitor intelligence, targeting therefore other banks' market strategies. The CF unit, in turn, tries to identify the bank market's early warning signs and mega trends" (p. 13). The authors found in this case study that the units (CI and CF) did not communicate with each other; there was no coordination or synergy in their activities.

Ideas for future research

This paper has shown that a) partnering of Foresight and CI is happening at the professional level, b) competitive intelligence professionals are adopting Foresight techniques, and c) Foresight is adopting intelligence techniques. However, little of this is happening at the academic level. The following section suggests possible areas of collaboration and future research opportunities arising from these findings.

<u>Research on coordination of foresight and intelligence functions</u>

The Hakmaoui (2022) paper found both CI and Foresight units within the same organization. There are a number of organizations (private, government, etc.) that have both types of units. However, can the Hakmaoui (2022) findings be generalized beyond the one institution? There has been some research in this area, but more is needed.

Hakmaoui (2022) also noted no coordination between CI and CF unitss. Research could look at the kinds of mechanisms that can be used to coordinate the activities of both types of units (CI and Foresight), including whether coordination can be found in other organizations. Further, the model proposed by Calof, Smith, and Richards (2015) had CI and Foresight (supported by analytics) working hand in hand. Canongia et al. (2004) also proposed this, but who coordinates this? Who is in charge? What are some appropriate coordination mechanisms? What are the advantages and disadvantages of coordination? If there is to be coordination, then what should each focus on? Should there be overlapping topics given each field's different perspectives and approaches? What topics should each field (unit) address? Where does one field's role begin and the other end? Or, as was proposed by Calof, Smith, and Richards (2015), maybe it should not end and they work synergistically throughout the life of the program.

Should it be about Foresight units adopting intelligence techniques (and therefore no need for intelligence units) or vice versa? To what extent does the perspective difference that Calof and Smith (2009) mentioned about the field lead to the need for both units working together? This could be termed a research stream of synergy (working together) vs. absorption.

Learning from each other

It was in the pages of Futures, that CI fellows, Neugarten and Bisson, each provided advice to the Foresight community from their CI research. What other lessons can each field provide to the other? As mentioned earlier, there is overlap in many of the analytical techniques being used (e.g., scenarios and technology forecasting). Are there other techniques from each field that can be adapted by the other? In the collection and organizing side,

Foresight has expertise in expert panels, Delphi, getting groups to share information, etc. Could CI benefit from learning from Foresight learning about Foresight's approach to these and other techniques?

Competitive intelligence has extensive literature on using events (conferences and trade shows) for intelligence purposes. As foresight uses methodologies that require bringing experts together, it is likely that an important event could be a cost-effective way for part of Foresight projects, as experts are generally all together at key events.

CI makes extensive use of organizational profiling. Foresight uses a type of stakeholder analysis wherein participants to a foresight session are asked to put themselves in the position of government or consumers or producers, etc. to see the future from different perspectives. Perhaps CI's profiling could help this kind of exercise. Call this research stream areas for learning from each other.

Working together

The research ideas mentioned above could be developed independently, with Foresight academics looking at the topics from their perspective and CI from theirs. This is basically what has been happening, and perhaps each field will read this article and identify research topics for their field. Alternatively, similar to the professionals' integrated research teams of Foresight and CI academics could be put together, with each bringing their knowledge and perspectives to the research project. The Higher School of Economics is one of the few Universities to do this, bringing in competitive intelligence academic expertise and combining it with their Foresight expertise. Not only has this resulted in both intelligence and foresight being used both in teaching and in projects, but it has also led to articles where the two perspectives have been combined. Combined Foresight and competitive intelligence research teams could provide each other's perspective to the project and perhaps jointly come up with many more ideas not mentioned in this article.

Conclusions

CI and Foresight professionals have been working together and adopting each other's approaches for several years; however, there has been little similar activity among academics in these fields. This paper has identified several research areas both for each field individually and combined to help address this. Similar to the professional bodies (and practitioners), this paper suggests bringing together CI and foresight academics to do joint research and explore joint research opportunities. Sharing perspectives from their respective fields, discussing the roots of each field, the approaches taken, the challenges, etc. This may yield similar benefits to those that professionals are experiencing – strengthening each field both individually and collectively.

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