Making competitive intelligence “social”

Current practices in four organizations

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Abstract

The presented research has investigated empirically the current practices of how organizations are using CI today, and in particular what role collaboration and networking plays in such CI work processes. In particular, the investigation has examined what forms of collaborations and organizational networks are currently used in the CI work process. Four organizations have been examined as exploratory case studies. From this, a base model for social CI has been generated by extracting overall CI process characteristics from the investigated cases that relate to collaborative behavior and organizational networking. The study relies on the existing conceptual framework called the social CI framework intended for analysis and design of CI for the (socially) networking organization.

**Keywords:** competitive intelligence, social networking, organizational networks, collaborative work, enterprise social media, social software, enterprise 2.0, wikinomics, information systems, case studies, work systems, socio-technical systems, knowledge management, computer-supported collaborative work, social competitive intelligence.
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Introduction

Organizations are relying more and more on informal social networking structures and decentralized decision making as a means to increase rapid response and agile innovation within the enterprise. These (socially) networking organizations often rely on the use of social technology with features from web 2.0 as an important part of their collaborative networking platform. A major promise of using networking in the context of work is the use of mass-collaboration, i.e. increased participation and collaborative possibilities that allows people to influence and take advantage of other people’s knowledge in new and flexible ways (Tapscott & Williams 2008; Bradley & McDonald 2011).

To keep up with the rapid change and increasing competition, a systematic approach to understand the surrounding world is needed. One solution is called competitive intelligence (CI), which means a systematic process whereby an organization (division, unit or person) gathers, analyzes, and transforms information into actionable intelligence, see e.g. Murphy (2005) and Sharp (2009). The objective of CI is to understand how the surrounding competitive environment¹ will impact an organization – by monitoring events, actors, trends, research breakthroughs, and so forth – in order to be able to make relevant strategic decisions.

The CI process has for a long time acknowledged that a natural way to integrate the process with an organization is through some form of network or community. In Kahaner (1996, p. 207), the fourth step when implementing a CI process in an organization is to “design a network to move information and intelligence around the company using what is already in place”. The network of Kahaner was intended primarily for the distribution of information. More recently, Hedin et al. (2011, ch. 8) describes an “inter-

¹ The term “competitive” in CI can be traced back to the economic notion of competitive advantage, see e.g. Porter (2008) and Barney & Hesterly (2012). The notion of competitiveness is used within the context of CI to emphasize that the intelligence is related to any aspect of the surrounding competitive environment with strategic significance, cf. Sharp (2009). In Swedish, the two terms “omvärldsbevakning” (monitoring) and “omvärldsanalys” (analysis) are often used instead of CI. The Swedish terms are slightly more general than CI since the term “omvärld” means “surrounding world” and refers to any aspect of the surrounding world that has strategic significance (which makes sense in particular for non-commercial organizations such as public authorities). For this article, CI is used as an English synonym for “omvärldsbevakning” and ”omvärldsanalys” which follows Swedish practice.
nal market intelligence (MI) network as a part of their presented intelligence organization for which they also describe how to find, recruit and engage MI network members. In this case the network is said to consist of both “users and contributors” and “consists of virtually everyone in the organization with a stake in the intelligence program”. They also note that such a network has to be facilitated actively by the MI unit members. Nelke & Håkansson (2015, p. 34) describe a special case of a large corporation, where networks are primarily intended for discussion of different topics.

In the context of web 2.0 (O’Reilly 2007), wikinomics (Tapscott & Williams 2008), enterprise 2.0 (Mcafee 2006), and the social organization (Bradley & McDonald 2011), working with networks signifies using networks more systematically and as a primary way of collaborating supported by newly developed methods that rely on newly available social technology and makes new forms of “mass collaboration” possible in practice. An important aspect of organizational networking in this context is the emphasis of freeform work methods that deliberately avoid too much control given up-front. Instead the work structures, freeform work methods are encouraged to emerge spontaneously depending on the situation, similar to how ungoverned social networks emerge.

A new notion called social CI has been introduced by Degerstedt (2015) in order to describe the phenomenon when CI processes, methods and tools are being further adapted for needs in the networking organization using social technology. Social CI describes how CI can be further developed using the notions of enterprise 2.0 and wikinomics, using systemic principles such as openness, participation, individual freedom, democracy, self-organization, sharing, co-creation (Malone 2004; Mcafee 2006; Tapscott & Williams 2008; Li & Bernoff 2011; Bradley & McDonald 2011).

The overall aim of social CI research is to investigate how new forms of collaborative social networking, based on social technology, can be utilized for CI, and vice versa how CI should be adapted for the (socially) networking organization. Two key aspects for social CI are how collaboration and net-

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2 Market intelligence is a term with similar aims as competitive intelligence, see Hedin et al. (2011) for details.

3 The term (socially) networking organization is used as an umbrella term for organizational use of work models that rely on informal and self-organizing social networks, instead of relying mainly on more formalized roles and work units. Networking work models can be physical, virtual based on social technology, or a combination of both. In practice, virtual solutions are often a necessary component of the network and means adjustment of work processes by using the emerging web 2.0 technologies in the enterprise. There are various related terms, e.g. (virtual) social networking, mass collabo-
working take place in a situation when CI is adapted for a networking organization in general, and using social technology in particular.

The presented research of this report has investigated empirically the current practices of organizations using CI today, and in particular what role collaboration and networking play in such CI work processes. The investigated research questions presented in this report are:

- How are tools and work methods used for CI today, in particular in Swedish organizations?
- What forms of collaboration and networks are currently used in CI work processes?

In the study, four organizations have been examined as exploratory case studies, in order to better understand the issues at hand. The cases are used to form a base model for social CI by extracting relevant characteristics related to collaboration and organizational networking. In forthcoming work, the studied cases and the base model will be used to generate a hypothesis in the form of potential areas of improvement using social CI.

A related framework with an aim similar to social CI has also been proposed recently by Jin & Bouthillier (2013). Their framework is also relevant as a conceptual framing of the case studies. Moreover, Vuori (2011) has studied how the emergence of social media affects how knowledge sharing is done within CI processes. Her findings have also identified motivational factors and barriers related to willingness to share competitive knowledge, identifying obstacles and possibilities. From the perspective of social CI, sharing is one important aspect among several others, such as openness and peering. The presented case studies have been carried out within such a broader socio-technical perspective.

Vuori & Okkonen (2012) discuss how the traditional knowledge refining process differs from those enabled using social media applications. The article outlines how social media tools can be used for the purpose of handling unstructured knowledge and value adding purposes. They point out in particular how such tools aid collaboration and informal participation.

Bouthillier & Shearer (2003) give an in-depth description of how the value of IT support tools can be assessed in the context of competitive intel-
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In particular, they use the notion of value-adding processes as a key concept which is a relevant notion also for the presented cases.

That not all knowledge work is equal, is pointed out by Davenport (2005). Davenport uses two dimensions to distinguish the level of complexity of knowledge work: judgment and collaboration. These two dimensions are relevant for the studied cases. In particular, it seems that traditional CI has focused mainly on the dimension of judgment which is closely related to the central task of the CI process. In contrast, social CI offers the means to focus more on the other dimension in Davenport’s model, namely collaboration. For an in-depth background on the phenomena of collaboration, see e.g. Patel et al. (2012) and Bedwell et al. (2012).

Social technology and social media have the potential to add new values to computing research in general (Shneiderman et al. 2011), and for CI in particular. An important aspect of using social technology is that it is inherently socio-technical in its character, referred to as sociability by Preece (2000). As a consequence, the implications of the interplay between social aspects and technical aspects are investigated carefully in the presented case studies.

Another related study by Hallikainen et al. (2012) introduced the notion of a “shadow BI community” to describe how an informal group of stakeholders formed an information community of practice with interests of improving the state of BI in the organization. The notion of a shadow community is also a relevant concept in order to understand aspects of the presented case studies.

The research method of the current work can be described as follows: empirical investigations have been performed to understand the current practices of competitive intelligence today, in particular in the context of social CI. Four case studies have been performed mainly using semi-structured interviews and qualitative input from CI and knowledge management experts in four organizations from different industries. The four cases represent CI in four different stages of adoption in the organizations: one organization with “ad hoc” CI, one organization that recently started systematic CI work, and two organizations with longer experience of CI work. The organizations with longer experience of systematic CI in turn represented two different types of organizations, namely one global product company and one national interest-based service organization (a labor union).
Description of the studied cases

The investigated four cases are here summarized based on material collected in semi-structured interviews. The cases represent organizations in four different sectors: consumer goods, labor union, non-formal adult education and procurement services. The organizations also represent organizations of different size: the Swedish consumer good company has presence in approximately 100 countries under various brands and approximately 44,000 employees; the Swedish labor union has over 500,000 members from over 230 different professions and the main part of the association consists of around 31,000 workplace representatives (81% of the members are women); the Swedish non-formal education association has 180 employees and 20 member organizations with 14 departments at 60 locations in Sweden and an office in Brussels; the British procurement company has approximately 200 employees and operates in eight countries in Europe and the US. The organizations for consumer goods, labor union and non-formal education were created in the late 19th or early 20th century. The procurement company was formed in the early 1990s.

In each of the four organizations 2–3 employees have been interviewed in in-depth interviews. Their professional background is either that they work with CI explicitly or more generally with knowledge management/business intelligence. In the case of the non-formal adult education organization a longer case study has been performed during a six month period, which will be reported in more detail elsewhere as well.

**Case 1: A hygiene and forest consumer product company**

Three members of the competitive intelligence (CI) unit at corporate level in the hygiene and forest consumer product company have been interviewed: the CI director, the CI manager and the business development strategy manager.

The corporate CI unit consists of six persons in two locations in Sweden, and three persons in Germany. The unit has existed for approximately 20-25 years, according to the CI director. Several of the members of the CI unit have educations in business administration including the CI director, which is a suitable education for a CI professional according to her.

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4 The textual format of the cases has been adapted from the original comments to make the text more easily accessible, but follows closely the content of the respondents’ comments. This level of precision is adequate in this context, since the purpose is to get an overall picture of the organization and their use of CI, without too much detail.
The CI unit collects signals from the surrounding world, everything from macro economics to developments concerning raw materials and product markets, according to the CI director. The collected information comes from various sources, both commercial and public. The collected intelligence is used in developing the strategic agenda of the company. The intelligence is mainly reported to the executive management and the board of directors, according to the CI director. A part of the role as CI director is to coordinate the purchase of information. Another important task for the CI unit is to monitor company competitors, which includes monitoring the competitors' public sources and business news monitoring. A lot of information comes to the organization through e-mail but also a collection of internal information platforms, according to the CI director.

From the collected information, various reports are constructed by the CI unit on a regular schedule, including a weekly and a monthly report. The reports contain answers to a fixed set of questions that are repeated over time, according to the CI director. The CI director writes a market report to the board of directors each quarter. Moreover, besides the regular reporting, the CI unit also gets “ad hoc” requests for various reports and analyses where the questions and answers are unique to a particular situation, or current need, in some part of the organization.

The technical platform used by the CI unit consists of a mix of various tools and information flows such as a special purpose portal for global news and competitor monitoring, intranet information, spreadsheet databases for graph based market trajectories and statistical databases. Some parts of the CI activities are highly automatized, but others are still mostly done manually, according to the CI director.

The CI unit seldom receives direct feedback on the regular reports, but the reports are well-known and appreciated within the company, according to the CI director. The content delivered directly to strategic work may lead to more or less discussion with decision makers, according to her. The work by the CI unit is an integrated component of the strategic work of the company, which is produced in dialogue with top management, the CI director concludes.

Making a coherent analysis of collected material from different information sources is to a large extent dependent on manual judgment, according to the CI director. The final analysis is also specific for the company and not something that can be delegated outside the organization or automated, according to her. Since information comes from many sources and plat-
forms and to a large extent through email, there is also often a manual process where information is aggregated finally by hand.

The interviewed CI manager is another member of the CI unit, who is a senior CI analyst of the hygiene section of the company that also manages the work of the other CI analysts in a network related to the hygiene sector around the world. The CI manager typically scans the news every day for half an hour, sometimes up to an hour, using the global news portal. During the last ten years the character of the work has changed drastically, according to her. One difference is that the organization, and thereby also the CI work, has grown and now operates more on a global scale. To think more on the global corporate level is a challenge, according to the CI manager.

The internal global CI network of the organization meets twice a year and has approximately twenty members. The members of the network contribute with scanning and creating reports for their different regions and markets. During their meetings they discuss on the principles and practices of CI, and divide work tasks and responsibilities for the subsequent time period. The CI manager acts “as a security guard and police” in the CI network so that the work is implemented as agreed, according to her. Earlier the network also had phone and video meetings, but this is no longer needed due to the improved CI portal system, according to the CI manager. One challenge with the CI network is when personnel changes too often and new persons must be taught how the network functions using mainly video and online meetings, the CI manager concludes. The members of the CI network all collaborate around the same portal and intranet services.

The CI manager scans what has happened in the world on a daily basis, which includes daily use of a news monitoring portal. Based on these scans, she creates her own news reports “manually” using standard text editor systems. She remarks that she does not use the built-in report generator of the CI portal today, but she would like to if it was “further developed somehow”.

The third interviewed person – the strategy business development manager – works mainly with competitor analysis, as a part of the analytical support of top management at the headquarters of the company. Her main task is to interpret performance figures of publicly listed competitors as strategic indicators of how well they are doing in various sectors or other aspects of their operations, and why the situation looks as it does. She uses a combination of internet search, company websites, financial reports, slide show presentations and webcasts to retrieve the information she needs. Her main tool for interpretation is a spreadsheet system. She is “not really” using the news monitoring portal, according to herself. She has some alerts
activated, reads headings and clicks on and reads the news “if it is interesting”. She says that she reads news in the CI portal “randomly”, but the stream of headers keeps her updated.

**Case 2: A Swedish labor Union**

Two employees of the Swedish labor union working with CI have been interviewed: a librarian at the national communications unit and a union representative.

The association is nation-wide and organized in one national headquarters and 13 geographical districts. The main part of the association consists of around 31,000 workplace representatives. The organization uses an intranet that reaches the whole organization which includes a portal called “the monitoring portal”. The interviewed librarian is one of the persons that monitors external news, classifies and edits it, and distributes selected news for internal usage. She is a senior member of a communications unit with 15 employees at the national headquarters with long experience of news monitoring and analysis. The main users of the internal news are employees and the workplace representatives. When she started working with news monitoring, she collected news and used email to distribute them manually. During that initial period she gradually started to structure the material so that it became easier to read. Today the organization is using a news monitoring portal instead, which they have been using since 2003. Earlier versions of the news monitoring portals lacked basic features such as clustering of news telegrams under one heading to avoid noise, the librarian remembers. She is an actively participating expert user in further development of news monitoring portals within the organization. The news monitoring portal the organization uses today has around 400 users at the time of the interview. The portal is used both for internal distribution of news feeds and for a news monitoring network with representatives of all units at the national headquarters. The news monitoring network meets three or four times each year. The interviewed librarian delivers a list of selected brief reports to each such meeting, which can contain either news articles or information about relevant events for the organization such as observations from workplace representatives. At a typical network meeting the prepared report is analyzed and the importance of its content is determined. The participants determine whether a report needs to be acted upon urgently, if it is irrelevant, something to act upon later, if it is already known and taken care of within the organization, or if it is simply good to know. The findings of the meetings are summarized “very briefly” and
handed over to top management, who can act on these insights accordingly, according to the librarian. The meetings are extremely valuable for the organization, according to her.

The news monitoring portal that is presently used by the communications unit is also used by top management, as well as other units of the organization. The units use the news monitoring portal to “keep up” with the developments within their sectors, for example “elderly care”. The union has as “double agenda”, on the one hand to ensure the social welfare of the citizens in general, but at the same time to protect the union members in particular, according to the librarian.

The librarian works daily with scanning news in the news monitoring portal. Some weekdays a consultant helps with the work which means that the next day the librarian starts with checking what the consultant has added. The librarian always works with two windows on the screen to be able to shift working window when the computer loads material in one of them. The news is already sorted under different headings when she looks at incoming material, the librarian explains. Various persons in the organization monitor specific headings only, related to their sectors. The librarian says that she focus on general news, while more specialized sector-specific channels are monitored by other persons in the organization. A challenge for her is that when mass media writes about something they “may not call it by its right name”. To guarantee that she does not miss something important she follows “ekonyheterna” without filtering, which is an important radio-based news cast from the Swedish public service that has text-based summaries in the news monitoring portal. The librarian is also responsible for making sure that the metadata taxonomy stays adequate and corresponds well to the content in the new monitoring portal system. She regularly corrects how others classify their material, which she sees as a natural part of her professional role. The librarian also comments that the work has to be done “quick and dirty”. It is crucial that you can work quickly since there are “so many articles”, but it does not have to be “perfect” she says. She also concludes that the organization “moves on the level of the society”, it does not have any product or service and it is far from a “scientific level”. “We are generalists”, she concludes.

The union representative, which is the second interviewee, collects external information about the industries she is responsible for. She collects information from different types of sources in a systematic way, using both digital and physical sources, according to her. The filing system, which is extensive, is something she has developed to fit her individual professional
needs. When she prepares for a new work task that requires background information she starts by reviewing her systematically collected sources, such as sorted trade magazines, public procurements, treaties, meeting protocols, the news monitoring portal, information on her own computer and so forth. When she uses the news monitoring portal, she typically follows a link to the original source, where in particular she also find the comments from other readers “very interesting”. The priorities of the union representative when she scans is to look mostly at news in her own specific areas, while other more general issues are given lower priority due to her time constraints. The union representative is responsible for creating “industry reports” which are placed on the intranet for other representatives and trustees to read. Some reports are distributed only “within the unit” while others are distributed to the whole organization. Moreover, she informs other persons in her professional network regularly, if she finds material that she thinks may be of interest to them. An important part of the work role of the union representative is the external expert networks she is active in, both nationally and internationally, where she both learns about new developments and also actively influences her field of expertise.

Case 3: A non-formal adult education association
Two employees of the non-formal adult education association working with CI were interviewed: the CI analyst (main respondent) and a senior advisor.5

The non-formal adult education association informs, gives lectures and arranges “study circles” for the Swedish public. The overall aim of the organization is to help people learn and grow as individuals. The last five years the association has worked systematically with CI, including the use of a news service and a portal for news monitoring. The association has a CI analyst (the main respondent) at the national office that works closely with the senior management and the director-general of the association, while at the same time also coordinating and using internal networks to reach out and support the organization as a whole with CI.

The media monitoring service is used in several ways in the association, according to the CI analyst. One way is that news streams are used by the association’s office in Brussels as a part of their lobbying activities. According to the CI analyst, the “source filters” of the used tool have “worked very well” in the context of political monitoring, in order to reduce the volume

5 The interviews at the education association are part of a larger case study of the organization, which will be reported in more detail elsewhere.
of the monitored streams and to follow specific areas of interest in the general news. Secondly, around one hundred employees subscribe to the personalized news service in the system according to the CI analyst. However, for regular employees it has in many cases been problematic to “find the right level” of filtering which has resulted in too much noise in the news streams, the CI analyst remarks. The CI analyst believes the reason for this problem is that the educational topics of interest are broad and complex in character and it is therefore hard to find suitable keywords for the filtering. She gives an example: in a search for “alcohol and other drugs” the results may vary greatly such as hits from social media discussions on the topic that are not related to the corresponding educational topic. Moreover, the employees have been given the opportunity to personalize their filters further according to their needs, but this has proven to be too time consuming and has not been used much in practice according to the CI analyst. Instead it has been the CI analyst who has worked with the tuning of the filters for different user groups. The CI analyst concludes that it would be a “great help” to have working information filtering for CI in the association, also to get support how to find “things we do not know that we should search for” would be valuable according to her.

A third way the media monitoring service has been used is by two voluntary interest-based groups at the national office for news monitoring and analysis, respectively. However, the groups are no longer active. The idea was that at least five persons should use the media monitoring portal in these groups, according to the CI analyst. Initially there were three persons in the groups that used the news monitoring portal regularly, but eventually they were only two – namely, the CI analyst and a senior adviser (the other respondent). The other participants in the groups “did not find time” for this activity. According to the CI analyst the problem with using a portal in this context is that it becomes “yet another log on” and it is time consuming to work with information filtering and “really process” the findings. Another problem, according to both the CI analyst and the senior adviser, was that it was hard to see the final outcome from the work done. A related problem, according to the CI adviser, was the question of how to clarify “who decides on an analysis, in the analysis work” and also what specific goals the groups should aim for. In particular, answering the question “why are we doing this” for the group members is an important incentive according to both interviewees.

Subsequently, a third complementary group was formed by the CI analyst, called the monitoring group, which consisted of a national CI net-
work with voluntary participants. At the time for the interviews the group had twelve members from different departments around the country. The monitoring group used an online social media group that was open also to others within the association. The social media group is their day-to-day channel to exchange observations in the media. A strength with using the social media group was that it was easier for the members to both post and comment, according to the CI analyst. However, the CI analyst has also noted that the social network web page mainly contains post observations, not the discussions and selections that one may have desired. Nevertheless, it has worked well as a “bulletin board” for the group, the CI analyst concludes. The CI analyst sifts through the posted material periodically and distributes the aggregated result as a text document to the group members. The CI analyst also notes that the social media group page has been used “more continuously” whereas the news monitoring portal supported a more systematic but also more demanding work style. In that sense, usage of the social media group page is more similar to how people use other media in their everyday life, according to the CI analyst. But at the same time, the CI analyst remarks, on the down side there is less structuring of the material on the social media group page which means that over time it becomes harder to get an overview of the news streams and topics and harder to see “the bigger picture”.

The senior adviser (the second respondent), has an extensive knowledge about the educational area and know-how concerning analysis work for the association. She worked regularly with the news monitoring portal for about a year, reading for about an hour each time several times a week. She worked more with the portal in the beginning than at the end of the year, according to herself. When she compares the work style of working with a portal with other ways of working she was more used to, what she missed most was “the personal meeting” which she means is “the best way to learn something”. She also means that to understand what is going on you need to balance different ways of working together – reading articles, making surveys, interviewing people and so forth. She stressed that the news monitoring portal can only be one aspect and must work well in combination with other activities. Moreover, for her, an important way to identify that a news event is important is to confirm the same phenomenon from different sources such as a combination of daily news, TV, theater, conferences, exhibitions and so forth. It is therefore important to regularly attend social events such as conferences and meetings to observe what others found interesting within the same field of expertise – “before it
reached the journalists, then it is already too late”, according to her. When
the senior adviser worked with the portal, she sometimes felt “alienated”
and she noted also that she is a “people-person not so interested in technol-
ogy”. The senior adviser perceived her CI task to be “making judgments
whether articles were of any use for the association”. However, to make this
judgment was actually quite hard, according to her, and often took a long
time and she often felt time pressure and got tired of the scrolling, reading
and judging. For her, the hard part of CI work was the intellectual effort
that it took to make judgments on the content, whereas the existing
functionality of the news monitoring portal she found “relatively easy to
use”. Another challenge she observed was that once she found material she
was not sure whether it would actually be used by someone afterward. This
was not her responsibility according to her. The lack of feedback on what was
appreciated or not in her findings meant that she doubted her own judgment
sometimes, she concludes. Appreciation from someone that her work had
made a real difference and was used by someone in the organization, was a
major motivational factor according to her. The senior adviser referred to
such useful findings as “grains of gold”.

Case 4: A procurement firm

Two employees of the procurement firm working with knowledge manage-
ment have been interviewed: the director of procurement operations and
the knowledge manager.

The procurement firm works with consultants in different countries and
with a wide variety of customer organizations, according to the director of
procurement operations. The company is a knowledge company that sells
their expertise to their customers. Every customer interaction they have will
always be about this knowledge, according to the director. The customer will
not be aware of the internal knowledge systems that the procurement firm
uses but will “see only the knowledge that our people have and that is what
they are buying”. It is a service organization, where one “element of any
project will always be on site with the customer”, according to the director.

A central aspect of the organization’s operations is that knowledge is
shared between the consultants, which mean that effective knowledge tools
play an important role, according to the director of procurement opera-
tions. The organization works actively with knowledge management and
has recently started using a knowledge portal as a central hub for this pur-
pose. The consultants are distributed at the customer sites which makes a
knowledge portal very important, according to the director of procurement
operations. Two types of information are shared – news about the external world and internal information that the organization produces itself. The external information relates to the clients or news about areas in which the organization works, such as IT, marketing or catering, according to the director. Online sources that are used include blogs and any kind of RSS feeds that are sent from customer organizations, much of which is freely available. Around ten percent of external information is through subscription in the form of specific industry news, not covered by regular news sites, such as market trends, according to the director. The internal information is typically documents produced in relation to ongoing projects or strategic information that is spread within the organization using the knowledge portal, according to her.

The collected information in the portal is not analyzed further (at the time point of the interviews). The main challenge is presently “just getting all the information in one place”, according to the director of procurement operations. The knowledge portal acts as a common “library” for all collected information resources within the organization. Every consultant is encouraged to submit the “final version” of “anything that has gone to the client” to the knowledge management system such as a presentation or a paper, according to the director. However, the stored resources can be “anything that they think is useful”.

Thirty senior level employees in the organization have been nominated to create “best in class information”, according to the director of procurement operations. These persons spend time to select, analyze and create materials that are considered “top quality information”. The analysis process is formalized with regular meetings and based on judgments by an expert committee. The best in class information is “flagged” in the knowledge system as such, according to the director.

The knowledge portal is intended to be used to filter out relevant information using a taxonomy of categories, such as “marketing”, which give the user both internal and external information concerning that category, sorted both based on topic and temporally. The portal repository also contains information about experts within the organization, which can also be found using filters and search similar to other types of information. Another type of search that the portal is intended to support, is to search for everything known about a particular customer or account, according to the director. Furthermore, the content can also be viewed using interface tools such as heat maps and benchmarks, but these features are used “a lot less”, the director of procurement operations concludes.
An important feature of using the knowledge portal is that employees can obtain needed information systematically and rapidly, according to the director of procurement operations. The portal supplies the consultants with useful background information in their work when “negotiating a deal on behalf of a customer or understanding a way to improve a process or something”, according to the director.

There are approximately two hundred users of the knowledge portal in the organization. Of them, over a hundred are occasional users who have setup and receive alerts from the system only, according to the director of procurement operations. The system has been in use for about a year at the time of the interviews. It took the organization “at least six months hard work” to get the system running and three month further to get used to the system and get people to use it in practice, according to the director of procurement operations. The “occasional users” are users who “just setup alerts and receive alerts” which is at least half of the users of the portal, according to the director. This is the first knowledge portal that has been used by the company, before that “[...] we had nothing. We had internet,” according to the director. During the initial six months of using the portal, the main issue has been how to get as much information as possible into the portal. This was a “huge development” compared to before, according to the director. There is still a need for more information to be put into the system, so quantity is still in focus the director concludes. The quantity is quite good at the time of the interviews, according to the director. An identified risk, according to her, is that the users try the system for a while, but fail to find what they need and stop using it, and also stop loading information into the system which can lead to fewer users in a negative spiral.

The information in the knowledge portal repository is not analyzed further once it is in the system, since “there is so much judgment in what we do”, according to the director. The main issue is how to make it easy to find, according to the director. “There is not just one answer – there are fifty answers”, the director remarks. According to her, a typical project would pull out all relevant information from previous cases, what “the market says” and so forth, and then use their own judgment to decide which bits are relevant for the current case. “There are no scientific ways to prioritizing information” and “every answer would be different depending on the circumstances [and] what the client wants”, according to the director of procurement operations.

The organization has a quality process, but “in a lot of cases it all happens on the client side, we will propose four or five solutions to a client and
they will decide to go with one of them and we will progress with the project accordingly”, according to the director of procurement operations.

The knowledge repository contains information from previous projects and events but “it does not give you the context and the situation that [it] was created in [such as] the project, the client, the marketing conditions – it might be two years out of date”, according to the director of procurement operations. To understand the context the organization still relies on going directly to the person that posted the information, in “a conversation...can I apply this now...is it still relevant...what would your insight be”, the director explains further. The director of procurement operations also notes that before using the knowledge portal in the organization, employees often did not know who to contact. Now they typically use the knowledge portal as a way to connect with relevant experts. “It would usually be a human interaction to help them analyze and draw conclusions from the information” they find in the portal system, according to the director. If the information has an external source, and a second opinion is needed the nominated area experts in the organization can be consulted.

The organization is planning to introduce a new process management system that “moves you along a process through the tool and you move through different decision gates and it would deliver the right documents to you at the time you need them according to the process”. The new system is intended also to link the knowledge repository better to the work process, according to the director of procurement operations.

A base model for social CI

The purpose of the base model is to extract aspects of CI from the studied cases that are relevant from the perspective of social CI. The main focus of the analysis is on collaborative structures including the use of organizational networking. The model uses the eight main factors of the CoSpaces Collaborative Working Model (CCWM) to structure the analysis (Patel et al. 2012).

The base model consists of two parts. The first part is based on three of the cases (cases 1–3) that have personnel with explicit responsibility for CI in the organization, i.e. an explicit CI function. Case 4, which lacked an explicit CI function, is analyzed separately and used in the second part. Case 4 is of interest in this context since CI is here treated as an integral part of
other forms of knowledge management (cf. the complex information theme in the social CI framework by Degerstedt (2015)).

Collaboration and networking using an explicit CI function
The base model for the explicit CI function can be described as follows (organized using the eight factors of CCWM):

Context: The CI function regularly delivered scheduled outcomes (“scheduled reports”) as a basis for operations. These receiving units or services included:6 board of directors, executive management, personalized news and intranet broadcasting. These reports answer a set of given questions, or objectives, repeatedly over time using various forms of news sources. In addition, the CI functions received special assignments from various parties in the organization, which consisted of unique intelligence projects for specific needs. The CI functions have contacts in most parts of the organization, which meant global or national contacts depending on the size of the organization. The CI functions also used internal CI networks as a way to collaborate with persons in other units or functions of the organization.

To implement a CI program initiative in an organization is a complex enterprise that will develop over time. In case 3, the organization had worked with a CI program for five years and there still existed several important questions to answer concerning the process. For the two cases with more than 20 years of experience of formalized CI in the organization, the basic method and tools seemed to be in place. However, even for these experienced organizations only in the last ten years had they started to use more advanced tools such as news monitoring portals. These developments will probably continue for some time in the future as well. The CI networks and new forms of collaboration have also been developed jointly with the use of CI portals and intranet services.

Teams: The CI function typically consists of one or two small teams. The division is typically related to what type of intelligence they cover (news monitoring, economic analysis, internal/external events and so forth). The CI functions typically consist of a core team of 1-3 persons also in larger organizations. This means that collaboration within the CI function team is often informal in a way typical for small teams. Following Van Der Ven et

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6 These units and services where explicitly mentioned in all three cases, other units or services may also have been receivers of CI reporting but may not have been mentioned in the interviews.
al. (1976), several levels or degrees of shared work can be distinguished: pooled, sequential, reciprocal and team. The CI function uses pooled work when it delegates monitoring tasks to the CI network. Similarly, the organization uses pooled work when it separates intelligence teams related to type of sources. Moreover, the CI function uses sequential work, when different persons participate in different phases of the intelligence loop. Similarly, the organization uses sequential work when CI is divided from and kept separate from the decision-action loop, which is done outside the scope of the CI function for the regular reporting. Finally, the CI function uses reciprocal work relations in CI networks where the participants are active and share the common goal of the CI network (i.e creating joint CI deliverables). The CI function also uses reciprocal relations for special assignments. Thus, when analyzing the impact of relationships for CI, it is important to observe that a large part of their shared work is not done through a traditional team but using other forms of shared work. Three basic roles have been identified in the CI function: the CI manager, the CI coordinator and the CI analyst. These typically overlap within one and the same person, and for the case with the smaller organization the same person was responsible for all three roles. The receiver of the regular CI deliverables is a fourth role, which is typically a person in a key position in the organization either manager or expert that use intelligence on a regular basis as a part of their work. Finally, a fifth role is the participant in the CI networks that takes an active part in the production of CI deliverables. The participants typically do this as a minor part of their responsibilities, which is some form of role that can be combined with CI in a meaningful way such as a domain expert or a sales person.

**Interaction:** The CI functions were small organizational units in the studied cases, even in larger organizations. The CI function works closely together and is placed close to a management function, such as corporate management or division management. The members of the CI functions typically also have responsibility for multidisciplinary coordination with key persons such as managers and experts in other parts of the organization. Communication in the CI functions followed a similar pattern in the different cases. Within co-located CI functions, a typical mix of face-to-face and general digital communication is used. The co-location of the CI function and the management function also give access to face-to-face communication with other personnel within that function. Daily interaction within distributed CI functions and the CI network are done through the use of a multi-user
news monitoring portal. Virtual meetings are typically used sparsely (each 1-3 months) to gather members of the CI networks. Physical meetings in the form of 1-2-day workshops are typically used once or twice a year to gather the CI network members for an in-depth collaborative CI work session.

**Tasks:** The basic tasks of CI are similar in the three studied cases, and are relatively well described in existing CI literature. Typically, the basic tasks of CI are described sequentially in the form of *phases* of an “intelligence loop”, which can be found in most books on CI today. For example Nelke & Håkansson (2015) introduce the so-called PCMAC model with the sequence of phases: plan and prioritize; capture; manage, analyze and communicate. The PCMAC sequence ends with the communication phase, where CI deliverables are constructed. In the PCMAC model the PCMAC sequence is related to an underlying *decision-action loop* that is not covered by the model, and is thus seen as part of the organizational work “outside” the CI function.

**Overarching factors:** An important overarching factor is that the CI work has clear instructions from clients what the goals of their activities are. To find effective goal formulations for CI is typically not easy, in particular when the contextual factors for the organization are complex which is typical for knowledge-intensive organizations. To get support from management is crucial for two reasons. First, it is hard to measure the extent the outcome has contributed to business results. Second, the CI function is only loosely connected with the overall organizational structure, which means that it relies mostly on networks, internal services and informal contacts. Determining the value of the CI function is therefore a question of judgment as well. The CI function may have to market itself internally, and thereby continuously *demonstrate its value* for the organization. The CI networks have overarching factors that are typical for such organizational networking: alternative incentive models may need to be found since work incentives for regular employee are not suitable; CI network participants typically only participate in the CI network for a small part of their time, which means time constraints are typically limiting; the CI network purpose and capability develop over time and it can take time before the network begin to deliver substantial value to the organization and can also stop delivering value at later points.

**Individuals:** An important skill for the role of the CI analyst is to *make judgments* about selections, interpretations and analysis of the significance
of external events. The judgment is highly dependent on the context of the organization and its current situation. This makes it important to have access to experience in the CI work. However, it is also important to have access to knowledge about threats and possibilities in the surrounding business situation, which may or may not be closely related to the present state of the organization. The skill set required for news monitoring and analysis relates to the ability to read, interpret, classify and write reports from large and quickly evolving information materials. The judgments are typically on a strategic level, which means overall general patterns are of interest rather than detailed analysis. It is therefore important for CI analysts to have a good overall situation awareness of the organization and its business environment. The cognitive work load is high due to the high information load. The required mental style must be “quick and approximate” in how the large information sets are handled. A potential stress factor is information overload. The tools and the fragmented intelligence channels and types are potential factors that may create a lack of overall situation awareness. The small team with a focus on individual judgment may also lead to relying too much on individual expertise. Stress may in turn lead to poorer quality of the CI results.

**Support:** The CI functions used a news monitoring portal in order to systematically monitor a selection of sources and topics. They also used other complementary sources such as internet search, research reports and in some cases attending conferences or other similar industry events. They also subscribed to various fee-based news monitoring services, but for the most part they relied on public sources. CI networks were used by all three CI functions as a way to decentralize parts of the work and to stimulate discussion and analysis with other experts in the organization. The news monitoring portals are also an important form of knowledge management for the CI function, since it also serves as an archive with a taxonomic classification structure making it possible to search for and analyze older material when needed.

*Collaboration and networking with integrated CI and knowledge management*

In case 4, CI and knowledge management are integrated parts of the operational organization. In particular, the director of procurement operations has the responsibility for managing how the company shared knowledge and to make sure that they had good knowledge management systems
according to their business needs. Also, their knowledge management system is organized around project results which mix both internal and external information. In effect, external analysis is done by all consultants in the company, as an integral part of their project activities together with their clients.

The base model related to integration of CI and knowledge management can be described as follows (organized using the eight factors of CCWM):

**Context:** The organization uses a decentralized project-based organizational structure. Each project collaborates closely with its clients and is essentially unique in character. The work is of a knowledge-intensive analytical business character and where the outcome of their services is highly judgmental and based on their professional expertise.

**Teams:** Teams are formed temporarily for a limited time span in the projects, using the pool of consultants. The knowledge management “team” was formed, on the one hand, around the knowledge system portal, and on the other hand around the process of best practice. This follows a typical distinction between front-end and back-end projects, of a project-based organizational structure.

**Interaction:** The responsibility of knowledge management is integrated into operative management, using a flat project-based organizational structure. The interaction around knowledge management becomes an integral part of the relationship between manager and the consultants.

**Tasks:** Since CI is largely carried out “ad hoc” within each project, there are no explicit methods for CI in the organization (at least not according to the data from the interviews).

**Overarching factors:** There are no explicit common goals for CI in the organization of case 4. However, there exists an explicit learning process through the use of the best-in-class program. The best-in-class process is also a form of incentive where the best projects are made visible within the organization. A well-known obstacle with knowledge sharing using knowledge management portals is that experts are not always willing to share, since they believe that it is not in their own personal interest. There must be a high level of trust in the organization and in the knowledge management
process for this kind of knowledge management work method to function properly.

**Individuals:** The expert knowledge of individuals within the company is its core asset. The clients pay for the expertise of these consultants. Such expert consultants are typically highly skilled and well-updated on the developments in their own field of expertise. In that sense they are also highly qualified to perform their own external monitoring as they see fit, in the form of ad hoc CI on an individual or project-based level.

**Support:** The organization use a knowledge systems portal in order to collect both internal and external information related to the projects. The big win is that all information is collected within one repository and become reachable for everyone in the organization. However, to be of value it is also essential that the collected information is useful in practice. In particular, for the external information to become of value from a CI perspective there is a need for a systematic way to extract such values. The organization used a formalized process for best-in-class, which is an interesting notion that is a form of “bottom up” strategic filtering of materials that have been collected on an operative level. However, it does not explicitly make a distinction of strategic insights from external events.

Case 4 is interesting to study since it is a highly decentralized service organization, which is also close in spirit to the philosophy behind social CI. Comparing cases 1-3 and case 4, the following observations can be made:

- If an explicit CI unit or function would be introduced in a project-based organization, the natural receiver of CI deliverables would be the projects. This means that the clients are no longer stable functional functions or top management, but instead temporary project teams for a limited time span.
- The use of the best-in-class program could perhaps also be adapted and used in the context of a CI network. An interesting aspect of the program is that it works “bottom-up” by analyzing work at an operative level in the organization and raising it to a more strategic level. This is a suitable way of working in a project-based organization. An observation is that the best-in-class program works in a different way than the CI networks of the other cases, which works more “top-down” from the CI function and outwards in the organization. A potential CI network that works more bottom-up would focus on and extract “best-in-class”
information from ad hoc CI from other experts in the company, instead of doing the CI analysis on their own.

Discussion

The purpose of the presented research has been to better understand how CI processes work today, in particular in Swedish organizations, and what kinds of collaborative patterns and organizational networks that can be observed.

One main finding is that some form of organizational network, “CI network”, exists in all three cases that have an explicit CI function. Also looking at standard text books on CI, notions of organizational networks have been part of suggested CI standard solutions for a long time. However, in the literature the proposed solutions are somewhat sketchy and have had a limited role in the overall CI program presented. These solutions also date back to before the arrival of social technology and social media, and are thus not related to notions such as enterprise 2.0. The findings support the idea that there is a real interest and practical value in organizational networks for CI. From two of the studied cases, it can be concluded that these organizations have developed solutions for CI networks that go well beyond the level described in literature, and is a potential input for forthcoming work on development of a general method and tools. The third case, which had worked with a CI network for three years, also demonstrated clearly that it is not easy to learn how to develop and extract value from a CI network.

The CI functions of the three studied cases were all small teams where five work roles could be identified. These teams formed at the same time a “bridge” and a “hub”. The CI team functions as a bridge between external events and contacts and the internal organization. They also serve as a network hub that leads the CI work of the organization in interaction with internal CI contributors and CI users. This analysis of the social network structure of the CI function forms an important basis for further investigation of social CI.

Davenport (2005) points out two forms of IT tools for collaborative work: knowledge repositories and collaborative aids. The more unstructured and collaborative the work is, the harder it is to foresee and thus build knowledge repositories in advance that support the current situation. Instead information is typically sought in multiple ways and using multiple channels. The collaborative workers need time and support to seek and
share knowledge from various different sources and repositories (Davenport 2005, p. 91). In the studied cases the specialized tools that were used were primarily knowledge repositories. The tools for collaborative aids were mainly of a more general character such as intranets and online social network services. Important here is how specialized collaborative tools for CI can be designed, which was also pointed out as an important potential area of improvement using social CI.

The fourth studied case is an example of a highly decentralized project-based organization that makes no explicit distinction between CI and other forms of KM. For this organization it makes sense to focus instead on knowledge at all levels related to a particular project, which includes all types of information collected by the project including information that may be of strategic nature. The organization uses a form of peer-review process to filter out the most important projects, which is a form of strategic procedure that focuses on the project as a whole. It is interesting to study how CI and other forms of KM are integrated in this case, and also how the strategic and operative levels become mixed in the context of the projects. Another observation is that in case 4, the strategic queries of the organization naturally become more “ad hoc” when they are formulated at the level of the separate projects.

Finally, a possible next step of future research is to investigate the potential areas of improvement using social CI and the presented base model and how to design a working method and a collaborative tool that supports an approach to CI.

References


