

Insight Through Open Intelligence™

by Jonathan Calof, Paul Santilli and Gregory Richards

In my column last September (Sept-Nov 2016 issue), I wrote about how competitive intelligence can help an organization's open-innovation initiatives. Open innovation is one of the hottest topics in industry and is driving R&D and innovation in many of the world's largest companies. Since the column was published, I have written and spoke a lot more about open innovation and competitive intelligence, and attended many interesting presentations about both topics. One of the more interesting presentations on intelligence that I attended was Paul Santilli's talks at SCIP Europe (Madrid) and SCIP International (Orlando) on Hewlett Packard Enterprise's (HPE) OEM intelligence initiatives. It dawned on me that under Paul's leadership of HPE's OEM intelligence, that intelligence efforts had broadened and in fact encompassed some open innovation concepts. Paul and I have talked about this for almost a year now and the result was a realization from both of us of the need to change elements of the competitive intelligence model to bring open innovation concepts into competitive intelligence. At the same time, I have been discussing similar concepts with my colleague Greg Richards from the Telfer School of Management around the challenges of integrating analytics into this as

well. We are calling this new concept Open Intelligence (OI). It involves vastly expanding the traditional boundaries of who is involved in developing competitive intelligence, the frequency of competitive intelligence project updating, and an increasing breadth to the kind of information used in the intelligence efforts. In this column we will outline the basic concepts of Open Intelligence and provide a few examples of elements of it from a practitioner's perspective. We first address the challenges related to the sheer velocity of change and ubiquity of data in today's organizations and the implications for competitive intelligence (CI), we then provide an overview of open innovation concepts followed by a discussion and case study example of open intelligence. We conclude that the types of insights generated from open intelligence could make for an exciting time for CI.

The Challenge

Paul and I have been involved with competitive intelligence for over 20 years and our other partner in this endeavor, Greg Richards has been at the forefront of big data and analytics for ten years. In that time we have all seen some significant changes in the business environment.



The three biggest changes that CI has to address (and these changes are only increasing in the future) are the speed of change, the growth of international activities (not just selling internationally but sourcing) and increasing data complexity - let's call this the big data challenge.

The speed of change is something that we can all agree has been increasing. In 2011, Harvard Business School professor and noted management thinker John Kotter wrote,

"Anyone in the business world – even casual observers of it – knows that it's currently experiencing a rapid rate of change. New companies spring up seemingly overnight. Products and services that were revolutionary two years ago are rendered obsolete if they don't adapt to market changes fast enough. The rate of change in the world today is going up. It's going up fast, and it's affecting organizations in a huge way. The evidence of this can be seen almost everywhere — life-cycle of products, number of patents filed in the US Patent Office, amount of cell phone activity across national boundaries — on and on and on. And what's particularly important is that it's not just going up. It's increasingly going up not just in a linear slant, but almost exponentially."

What does this mean for CI? Many intelligence projects, for example tracking customer needs/changes, technology developments, etc. need to be done on a frequent and almost daily base as change may be frequent. Looking for both the emergence of threats and opportunities, needs to be done in time so that managers can react, but rate of change is greatly compressing the amount of time available to gather, analyze, and make sense of the information.

As for the "big data" complexity problem, at the SCIP conference in Atlanta (May 2017), a dominant theme among many of the keynotes was big data. Steven Hughes opened the conference with a talk "Big Data is our Future" and day two had Major General Neeraj Bali present a case study from the Indian army in which big data figured prominently. Among the numbers quoted in the presentations: 31.25 million messages sent every minute, 30 billion pieces of shared content on Facebook every month, 2.77 million videos viewed every minute, Google users perform 40,000 searches per second, more than 196,000 databases published annually by

the U.S government, and by 2019 one million minutes of video will be uploaded every second. It would take five million years to watch all the videos posted each month.

In addition, we have all heard about the internet of things (IoT) with increased machine to machine communications, data gathering sensors, and more, some of which provides data that can be used for CI. Social media, twitter, blogs etc. also generate data that can be used in intelligence programs. It's not that the traditional primary sources from interviews are not important for intelligence but that the growth and availability of these online videos, discussions, materials, etc. does provide great opportunities on the collection side of intelligence. The problem however is coming up with a way to cope with all this data. IBM, in their big data and analytics hub, writes about the Four V's of big data (IBM, 2017):

- 1) **Volume** or scale of data. For example, most companies in the US have at least 100 terabytes of data stored, six billion people have cell phones.
- 2) **Velocity**/analysis of streaming data. For example, 1 terabyte of trade information is captured by the New York stock exchange every day. There are 18.9 billion network connections – 2.5 per each person on earth.
- 3) **Variety** or different forms of data. For example, 400 million tweets are sent per day, 4 billion hours of video are watched on YouTube each month, and 30 billion pieces of content are shared on Facebook each month.
- 4) **Veracity** or uncertainty of data. Notably, 1 in 3 business leaders don't trust the data they use to make decisions, poor data quality estimated to cost the US economy alone \$3.1 trillion per year.

One more item to add to this list, and here is where we combine two of the change factors – data complexity and international – the need to deal with international sources of information. Tomorrow (even today's) competitor may come from outside your country. Many of your customers may also come from other countries, technology and other changes can come from anywhere in the world. Managing in this environment will require accessing information sources in these countries, knowing what the best sources of information are in foreign environments and in some cases dealing with the fact that the best information for your intelligence program may not be in English.

The challenge for CI is how to integrate the opportunity provided by this volume of data along with our more traditional information sources while addressing the problems related to data volume, variety, velocity, veracity, and international.

The combination of the rate of change, international factors and the big data challenge means that CI teams will need to come up with a way to increase the frequency of their intelligence project updates while integrating a broader array of data. Doing this as a one or two-person intelligence team is going to be difficult. The following lays out how we are proposing adding to the concepts of competitive intelligence to address these challenges – a reconceptualization of the phases of intelligence and the addition of concepts from open innovation to intelligence.

New Ideas within the Wheel of Intelligence

Traditional CI approaches revolve around some version of the wheel of intelligence, one in which we have seen leading organizations use terms such as:

- 1) Issue Identification
- 2) Plan Generation
- 3) Data Acquisition
- 4) Data Analysis
- 5) Recommendation

There are many variations of this approach based on corporate management structure and decision making authority, size of the organization, and the type of issue to be resolved. But these 5 steps are really the crux of any "generic" CI effort in an organization. The problem with this traditional approach is that the time for all of this to happen can exceed several weeks or months before "actionable insight" can be developed. Add to that the time for the organization to actually execute on the insight (if they do at all) and we are talking additional months added to the overall CI lifecycle.

Given the time frames involved, the impact of the 4V's (5 counting international) associated with big data can make this traditional approach grossly inadequate and subsequently useless. Business disruption and industry changes occur in the blink of an eye and through the globalization of the digitized world we live in, can affect regions and potentially world economics in a fraction of the time it took only 10 years ago. Data and insights that are months out of sync with reality cannot provide a competitive advantage to any organization, and ultimately only improves your competitors' chances of identifying and acting upon the market and business data scenarios before you do.

Rather, an approach is needed that will take into account the volume of information, the sources, the ability to manage the content, and the organizational flexibility



to not only adapt, but to flawlessly execute on a regular basis what will be needed in the internet of things (IoT), Big Data era, international dimensions of data, etc. There are several strategies that can be employed to help navigate the challenges stemming from this environment during this important data collection and analysis phase.

Data Generation

First, in terms of data generation, the sources and volume of data overall is exploding. This growth is expected to continue at an exponential rate with an estimated 50 billion connected devices by the year 2020 – and this is in the IoT space alone! There is essentially no such thing as a suitable environment for “batch” processing – anything not done as close to real time as possible will become useless. So it is critical to know that the further from the time the data is generated to analysis, the more misleading and outdated the data becomes – and all downstream activities of analytics, processing, insights and execution eventually snowballs into an extremely high-risk business strategy.

That is not to say that one should just hang up the proverbial CI hat and chalk this environment as a no-win scenario. Rather, there are techniques available for moving closer to the “real-time” environment that will provide valuable insights and ultimately a competitive advantage for your organisation.

There are many techniques (albeit some more advanced than others) that have showed great promise in getting better data, getting it quickly, and expanding the breadth of data collection to include more value-rich content. These techniques can include:

1) Concurrent analyses methodologies – simultaneously collecting, analyzing and sharing the data with stakeholders in a reiterative parallel process, rather than serially collecting and vetting the data with stakeholders, which can take magnitudes longer in time and resources.

2) Organizational efficiencies – built-in hierarchical structures that encourage quick data sharing and communications without long lag times to decision making and execution.

3) Real-time data collection methods – ability to harvest content from thousands of sources to effectively pull valuable “golden nuggets” from the vast amount of overall data.

Tools for Data Generation and Analysis

Secondly, the use of specific data-management tools becomes a necessity in this data-rich environment. Public domain search engines fall woefully short in providing the content in a format that is user-friendly, and throwing low-cost physical resources at the problem only leads to more confusion and frustration in coordination and results in a reduction in speed to insights. Knowledge Management tools or related automation mechanisms are crucial in order to navigate the volume of data coming from the web. This includes not only public domain source content, but Social Media, Customer Feedback, Paid Sources, etc. The key determinant in the appropriateness of the result will often depend on the robustness of the input content. Identifying and managing the resources that provide data into the automation tools is a critical area of development. Letting the tool do the “heavy-lifting” of analytics with source content that routinely numbers in the thousands or tens of thousands of sources (or more with IoT and SoMe!) will ultimately provide a much better outcome over time.

From a practitioner’s perspective, the value of the tool cannot be overstated. It has allowed organizations to be far more efficient and overall, more effective in improving the analytics and arriving at Actionable Insights far faster than without the tool. An example of such a tool is one by which a comprehensive database repository can capture data and categorize it into several areas:

1) Content Repository – funneling the hundreds/thousands of data sources into a central location.

2) Content Search – performing Boolean, Phrase, Truncation or other searching mechanisms.

3) Communication/Sharing – ability to cross-functionally share this information readily.

4) Knowledge Visualization – transforming the data analysis into a useable, easily understood visualization for fast deciphering and application.

5) Actionable Insights Decisions – arriving at the quickest time possible, the actionable insights to make organizational decisions.

Analysis and Taxonomy

First off, it is important to know what is meant by “taxonomy” – this is the ability to categorize content in the classifications best suited to achieve the Intelligence initiative. Think about the objective you are trying to achieve – if it is about a product launch or about how a competitor is performing, there is a set of criteria that you want to establish that acts as a catalyst to achieving the objective. What initial segments of the industry? Geographical areas? Specific products or general applications? How defined do you want to get into the details of what you are trying to determine? Therefore, the ability to analyze this data with the desired taxonomy is important, but one is not looking for a simple listing of relevant sources for a business need. Rather, the key OUTPUT element is to appropriately analyze the data that allows the user to identify and derive key content that can be immediately adjusted to include in the Insights for Recommendations. Many tools have dashboards that are customizable for the user preferences and can be adjusted based on the parameters that the user requires. This is something used extensively by many successful organizations and is key to being able to get the data in the right format so that it is easily ported to a Recommendations output.

Additionally, people-engagement is key here – ensuring that the content driven from the automation is relevant, timely, and actionable. You still have to utilize individual perspectives to make sure the dashboard outputs are in line with the company objectives and requirements for the need being investigated.

Organizational Structure and Culture

It’s not just the process of competitive intelligence that needs to be modified in light of the new environment, but the organization itself will need to be looked at. There are two elements of this, one is the structure itself in that if the information is to be acted on quickly then mechanisms need to be in place to get intelligence into the hands of decision makers quickly. The idea, for example, of the pinnacle of CI being that it is included in the weekly or monthly senior management meetings, needs to give way to real time, possibly daily intelligence updates. There is also the cultural element of an organization. Far too many times senior management will be aware of the content of the intelligence, but will either choose not to act upon it (due to either internal



feelings outside of the data results), or simply ignore it as a “nice to know” sort of factoid. Obviously, both are potential catastrophic behaviors that will only improve your competitor’s chances of getting an advantage in the marketplace, especially given the speed of change mentioned earlier.

Therefore, company structures have to be shallow and decision making has to be quick. Analysis-Paralysis has to be avoided at all costs. This can only be achieved when you have a sponsor at the Executive level of the organization who values the CI contributing efforts and can therefore prioritize and include the results in the strategic direction of the company.

Opening up the Intelligence Process – Open Intelligence

With the above ideas implemented in organizations, it becomes more likely that organizations will have the ability to handle the four V’s of data and the corresponding international and speed components of insight generation. However, there are concerns that with most intelligence units being one or two people, it will be difficult for the user to actually cope with frequent intelligence projects integrating massive amounts of data, dealing with fast changing environment and incorporating international elements into the model. Not only will it be difficult as will be pointed out in the next part of this article, but it might even be undesirable. Perhaps a better approach will be to open up the intelligence process. In the next section we look at a very popular topic – open innovation, the opening up of organization’s innovation activities, including research and development to people outside the organization – even competitors.

Open Innovation

Our notion of Open Intelligence is based on open innovation concepts pioneered by Henry Chesbrough. In 2003, Chesbrough wrote “Open Innovation is fundamentally about operating in a world of abundant knowledge, where not all the smart people work for you so you’d better go find them, connect to them, and build upon what they can do.” He went on to explain that, “Open Innovation is a paradigm that assumes that firms can and should use external ideas as well as internal

ideas, and internal and external paths to market, as the firms look to advance their technology. Open Innovation combines internal and external ideas into architectures and systems whose requirements are defined by a business model.”

Up to this point, innovation was seen as an exclusively internal organization function: R&D inside the organization came up with the ideas and then the organization determined (again internally) which ones to pursue to development and commercialization. Open Innovation implies opening elements of the innovation process to smart people outside the organization. Elaine Watson in 2012 wrote about Coca Cola’s open innovation program. Coca Cola’s Chief Procurement Officer, Ron Lewis, summed up open innovation and its importance to Coca Cola when he said “...our goal is to be the best at innovation in the industry and the way we’re doing that is via an open network. And there is a good chance that the source of such innovation may well come from outside Coke’s R&D department. We want to be the best at connecting the dots.” Finding ideas outside the organization and connecting the dots are certainly the objectives in open innovation and definitely areas where CI has a role to play. In a 2008 article from Harvard Business Review, by Huston and Sakkab on Procter & Gamble’s (P&G) open innovation initiative, it was noted that as of 2006, 35% of their new products have elements of open innovation, with 45% of the initiatives in the product development portfolio having elements that were discovered externally with a goal for 50% of innovation to come from outside the company. P&G even established a policy of licensing new products/technology to competitors if P&G had not commercialized it within three years of development.

In opening up, innovation researchers do note that part of this opening up is to include parts of the organization that traditionally had not been consulted/included in innovation efforts. For example, Volkswagen in looking at car engine design allowed individuals from outside the engine group to bring ideas forward and become involved in the selection of which ideas would go forward into design.

Hansen and Birkinshaw linked open innovation to each element of the innovation value chain in their Harvard Business Review article titled, “The Innovation Value Chain.” In it they looked at key questions to ask and performance indicators to identify how “open” the



innovation process was (table 1). The typical company has virtually all idea generation done in-house. To open up the R&D process to other “bright” people, they talk about cross-pollination with other units across the organization providing input to R&D, and external input from people outside the organization who contribute to the R&D idea generation process. We have seen examples of this in many industries. We mentioned earlier about Volkswagen opening up engine R&D to people outside the R&D department. Bed Bath and Beyond in working with “Edison Nation” put a call out for inventors from around the world to provide ideas that could result in new products sold in Bed Bath and Beyond. This goes beyond idea generation to using an open approach for both idea generation and conversion with Bed Bath and Beyond doing the diffusion. After 14 years of research and writing on open innovation (14 years after Chesbrough introduced the topic) there have been enough case studies and papers written that it is safe to say that there are examples of each element of the innovation value chain, idea generation, conversion and diffusion being done through open innovation.



	IDEA GENERATION			CONVERSION		DIFFUSION
	IN-HOUSE	CROSS-POLLINATION	EXTERNAL	SELECTION	DEVELOPMENT	SPREAD
	Creation within a unit	Collaboration across units	Collaboration with parties outside the firm	Screening and initial funding	Movement from idea to first result	Dissemination across the organization
KEY QUESTIONS	Do people in our unit create good ideas on their own?	Do we create good ideas by working across the company?	Do we source enough good ideas from outside the firm?	Are we good at screening and funding new ideas?	Are we good at turning ideas into viable products, businesses, and best practices?	Are we good at diffusing developed ideas across the company?

Table 1: Hansen and Birkinshaw Innovation Value Chain

From Open Innovation to Open Intelligence

Innovation was opened up because despite the risks (e.g. loss of intellectual property) the benefits associated with allowing people external to the R&D unit both inside and outside the company to assist with all aspects of the innovation process were too great. Organizations have found that with the speed of

change and the need for faster and better innovation, it was beneficial to allow other people to have a role in generating ideas, evaluating them and even helping with commercialization. Given the complexity and volume around data and intelligence, it is clear that similar to Open Innovation, it is time for CI to consider opening up all phases of the intelligence process to deal with similar challenges: the need for quicker intelligence, the need to cope with frequent environmental change, and the need to deal with the complexity posed by big data. The following discussion explores how this would work by going through some of the elements of the traditional intelligence wheel.

In looking at Open Intelligence, some of the language of open innovation from Hansen and Birkinshaw is highly leveraged to CI:

- **In-house:** This will refer to the traditional model of intelligence where virtually all aspects of the intelligence process are done within the CI unit;
- **Cross-Pollination:** This will refer to supplementing in-house with input from other units of the organization to assist in aspects of intelligence development;
- **External:** This will refer to supplementing both in-house and cross-pollination with people outside the organization such as key customers, suppliers, experts, other stakeholders to assist with aspects of intelligence development.

Intelligence Planning

There are many aspects of intelligence planning that could benefit from Open Intelligence, but for the purposes of a basic exploration of the concept we will look at one – intelligence topic generation. Intelligence topics are traditionally developed by the person responsible for intelligence based either on their understanding of management needs or through direct consultation with management. Call this the traditional in-house approach to topic development. In CI we talk about it in terms of “what is keeping the CEO up at night” or “what key decisions are being made.” Cross-pollination (opening up the process to units outside intelligence) involves allowing others in the organization to contribute to the intelligence topic generation process. Personnel in R&D, for example, understand the technical environment well and might have some interesting perspectives on what topics need to be investigated. Those in maintenance or service may have ideas based on the complaints and problems that customers are having. Taking an external perspective (fully open), imagine if you allowed customers, suppliers, and other stakeholders to input on the intelligence topic selection process (possibly even competitors?). Nan Bulger, CEO at SCIP wrote in a 2015 article about integrated intelligence that the purpose of intelligence is to “help your customers’ compete in the market and help your customers make money.” If the purpose is to make customers more competitive (a Business to Business objective – B2B) or simply to satisfy customers (both B2B and more traditional consumer markets) then would it not make sense to ask them what topics are most relevant

to them? Or perhaps show customers the topics you are thinking of covering and asking them which ones would result in intelligence that would help them better position themselves amongst their customers?

It’s not just idea generation of topics that could be done in an open intelligence approach, topic selection could also be done this way. We can envision a Delphi approach where people from outside the CI function rank the intelligence topics, thereby helping the intelligence team determine which ones are more relevant to other units of the organization, to key stakeholders, etc.

Collection

Open Intelligence applied to collection is something that on the surface CI already does very well. The profession understands the importance of gathering information from broad sources both within and outside the organization. They get the need for diverse sources of information, but there are a few aspects of collection that we want to bring up in the context of Open Intelligence. First, as a reminder to CI practitioners that the collectors of information should come to some extent from outside the CI unit (in-house). To what extent is information being entered into the intelligence system from other units of the organization (cross-pollination)? From outside the organization (external)? This is not about where you get the information from, but who is providing it. In an Open Intelligence environment information is being



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directly entered into the system by stakeholders and by people in other parts of the organization. Open Intelligence also requires that CI practitioners extend collection sources to recognize data variety – to what extent (where relevant) is online video, social media, and so forth being integrated into your intelligence efforts? How is the internet of things figuring into your collection plans? Imagine what can happen if you can address variety, velocity, and volume. This no doubt will require use of technology, but with the given rates of change and increased data (and data complexity) this will be necessary. One thing to consider is that, in the big data world, 80% of what is available is unstructured or semi-structured (text, images, and sound). Therefore, some form of unstructured data technology will become important.

Analysis

The traditional view of analysis has the person responsible for intelligence applying any one of several dozen formal analytical techniques to information that has been gathered. This is a straightforward and logical process that fits with the in-house view of intelligence. We have added to this in the earlier section in mentioning some online/technological analytical tools but it’s still conceptually about the CI unit engaging in the analysis and then sending the results with recommendations off to the decision makers. A few things that we have seen over the past several years have caused us to question whether this should be changed to incorporate the open intelligence approach. The first was a presentation by Johan Van Zyl, CEO of Toyota Europe NV/South Africa on the Toyota South Africa intelligence system. During the presentation he talked about how the client for the intelligence joins with the intelligence team during the analysis phase. This provides the intelligence team with client insights and perspectives on the data. We have also seen various foresight initiatives where experts from around the world were invited to provide analytical input either as part of expert panels or in Delphi approaches to help organizations make sense of complex environments. Volkswagen provides a very interesting open innovation example in this respect. They set up a virtual exchange where participants from throughout the company received play money that they could “bet” on what they thought were the better ideas. Whichever idea attracted the most “virtual money” on the exchange was the one selected.

There are two aspects then to think about in applying an Open Intelligence approach to analysis. The first is who do you open the analysis process up to (who is invited in) and the second is the kind of analytical techniques you use to integrate broader involvement. An in-house approach (like in open innovation – so call this closed) involves only having the intelligence unit doing the analysis. Cross-pollination would involve allowing others inside the organization to participate in the analysis process and external would involve inviting in outside experts, stakeholders and others. For cross-pollination and external initiatives, traditional analytical techniques would be combined with techniques such as Delphi and expert group approaches. The foresight field has a lot of techniques that can be used to integrate broad groups into the analysis function.

A final aspect of analysis that ties in with the concept of rapidity of change is the frequency of analysis. As mentioned in the collection section, organizations will need to refresh and reanalyze their data on a frequent basis. Automated analytical approaches (software and other online tools) will become more important in addressing the need for more frequent data refresh rates, broader data types, and the need for more frequent analysis.

Communication

Traditionally intelligence after being developed by the intelligence unit is given to the client. There are variations in this approach with some suggesting providing the analysis but not the recommendations (the true intelligence) to other managers in the organization and in some cases making the non-sensitive information gathered for intelligence available more broadly throughout the organization. But generally it’s about targeted intelligence being developed and given its sensitivity being provided to those with the authority and requirement to receive it on a need to know basis only. The open innovation groups have discussed at great length the sensitivity and concerns with sharing intellectual property more broadly than just in-house (in the R&D unit) but have generally concluded that despite the risk the potential benefits are big. Similarly for intelligence, there will have to be discussion around how broadly intelligence should be communicated. Under the cross-pollination approach, intelligence results could be shared with others in the organization (besides the client) but perhaps who have appropriate

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security clearance levels. Under an external approach (full open intelligence) the intelligence would be shared with trusted stakeholders outside the organization. This certainly is done within the government intelligence environment (within the five eyes community for example – Australia, Canada, New Zealand, the United Kingdom and the United States) and it might make sense to share intelligence findings with key customers or suppliers to get their perspective on the intelligence. Again this fits with the integrated intelligence concept but more importantly provides an additional level of validation on intelligence results and helps to provide unique perspectives on it as well.

Case Example

The following provides an example of several of the ideas mentioned in this article. To preserve confidentiality the company, industry and technologies are not described in detail.

An organization was tasked with looking into market sizing and competitive information within a specific geography. In order to be most effective, the following steps were taken:

1) Objective Identification

This is a most important area of the analysis – to specifically define the key objectives on what is required to know in order to satisfy the company need. Many times, organizations are vague around this area and end up trying to get data on everything, with the resultant conclusion being unclear and un-actionable. Ensuring that management has the right expectation and reviewing with them the actionable aspect of the results are critical. Note that this is similar to how projects are defined today.

2) Data Gathering

This is where several techniques are applied. Of course, traditional primary and secondary research is a given, but utilizing Social Media (SoMe) provided very data-rich content that is seldom pursued in traditional CI modeling because people either don't understand the environment or are unsure of how to tap the golden nuggets that might exist amongst the vast amount of noise. Various listening/trolling techniques, targeted posts, specific industry-based/regional-based campaigns, etc., were employed that provided very useful data. The key to it being that the SoMe efforts had to be well managed and structured appropriately.

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Additionally, utilizing alliances around channel partners, technology partners, vendor and contractor relationships provided a wealth of information that also contributed to the data collection and analysis. This is a technique that allows you to compare your company's products/services with that of your competitor's by talking to individuals who utilize both.

Lastly, additional information was gained through engagements with competitors directly – this was done via technology forum, an industry event information and related activities.

All of these techniques really exemplify the theme around Open Intelligence – the ability to go beyond the traditional collection of data to one by which you tap any and virtually all sources internal and external to the company where content can be extracted. This part of the example brings in data from multi sources (the four v's) and addresses international dimensions by use of various industry forums. Note that full open source stakeholders were able to input information into the process.

3) Analytics

With this wealth of information, specific Knowledge Management Tools were utilized on a real-time basis as to provide dashboards of content relative to the objective(s). This was another critical component of the CI modeling; tool usage to do all of the heavy lifting of data analytics and taxonomy greatly reduced the Time to Insights of the project.

It is important to note that another key element during this entire process is that the data findings were continuously reviewed with stakeholders and senior management to ensure that the findings were congruent to the objectives defined. Sometimes, the objectives were adjusted due to the direction that the findings are going. And unfortunately, many organizations wait until the final results are discovered before they go through this review process. In this case, and to avoid this problem, a cyclical find-analyze-review-adjust format was repeatedly used to ensure that any adjustment and changes were done in-process. This eliminated a great deal of time from the overall Time to Insights process. Allowing management (internal) and stakeholders (external) to review findings and provide feedback on them during the analysis phase are open intelligence practices.

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4) Recommendation

Because of this efficiency in the cyclical in-process review methodology, a great deal of information was obtained and Actionable Insights achieved within only a few weeks (albeit not real-time, but certainly not the 2-month timeframe these efforts normally take). In fact, the Time to Insights dropped approximately 60% by utilizing these factors, while increasing the value in the data obtained through these Open Intelligence practices.

opens up and involves input and assistance from others in the organization (cross-pollination) and at the most open, from others outside the organization (the external approach). Table 2 provides examples of this within planning, analysis and communication. This may make some intelligence practitioners nervous due to the potential that the intelligence will be seen by some that they do not wish to see it, but this is no worse than the potential loss of IP that can arise in open innovation. Many of the world's largest companies have adopted aggressive open innovation targets and established open innovation programs. It is only by harnessing the information from broader networks (Open Intelligence), involving a broader array of experts in analysing information (Open Intelligence) and sharing the intelligence with appropriate stakeholders (Open Intelligence) that organizations will be able to deal with the speed of change and increasing complexity of data described in this article. Even planning (including intelligence topic selection) can benefit from an open intelligence approach.

Conclusions

Speed of change, needing to address international dimensions of business and information and increasing complexity of data (volume, variety, velocity, and veracity) will require a rethink and possibly reconceptualization of how we develop intelligence. Open Intelligence, our concept which is inspired by the popular and growing field of open innovation provides an approach for addressing these challenges. However, it will require that the competitive intelligence function

Table 2: Open Intelligence – Examples within the wheel of intelligence

	Traditional model – In house (CI unit)	Cross pollination – across the firm	External
Planning: Where the topics come from	Senior management drives it “what’s keeping them up at night” CI practitioner driven: “We know what’s needed”	Other parts bring forward and help to select the intelligence topics – they know what key issues are from their units perspective	Key stakeholders have a unique perspective on the environment. What’s important to them? What do they need to be competitive?
Analysis: Techniques and methods	Our unit know how to make sense of the information. Craig Fleisher and Babette Bensoussan have shown us the techniques.	We still need Craig and Babette, but let’s have others from the organization help us make sense of the information. We will need group analysis approaches- exchanges, Delphi.	Who are our five eyes for intelligence? Let’s harness the power and insight from key customers, suppliers, other allies, experts etc. We will need group analysis approaches such as exchanges and Delphi.
Communication	The intelligence is provided to the client – need to know basis.	The intelligence is shared with those in the organization that could provide perspective on it and are cleared to see it.	The intelligence is shared with key people outside the organization that can provide perspective and we trust to see it.

To paraphrase Henry Chesbrough, your CI unit does not have all the smart people in the world working for it, but don’t you wish it could? Put another way, do you really feel that intelligence in a closed environment (in-house) is better than open intelligence with the combined information, analytical capability, insight of a broader expert group? The idea in open intelligence is to get the best minds working for you, those that could provide immense value to you.

If open innovation does not appeal to you then how do you propose dealing with the challenges we posed in this article?

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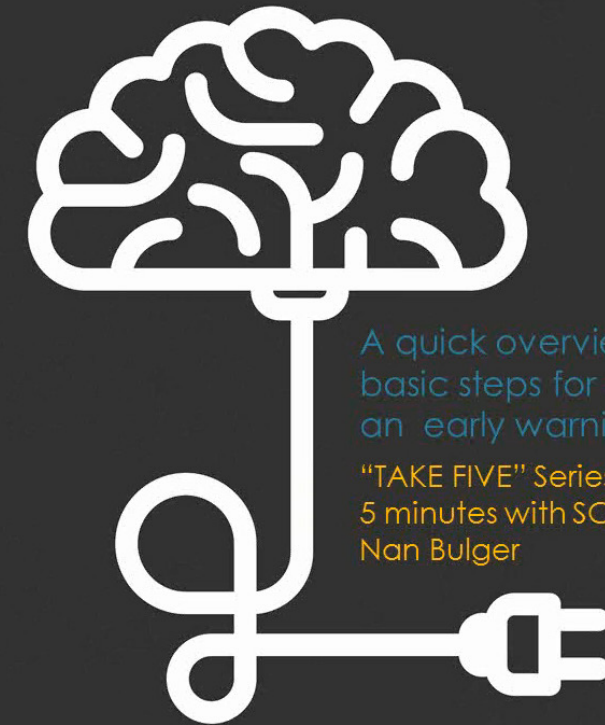
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