

Identifying of Information Needs in Seasonal Management

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Abstract

Although appropriate information is considered to be one of the premises for achieving a competitive advantage there is a large amount of information which brings no advantage to an organization. Incorrect or inappropriate information can even misinform key decision makers, thereby hindering rather than to promoting the development of an organization's activities. The identifying of information needs aims to diminish the accumulation of needless information as well as to promote the use of relevant information. Many organizations have separate business intelligence (BI) function which gathers, analyzes, stores, and distributes information.

The information provided by a BI function should be suitable for use in an organization's decision-making processes and aimed to fulfill the decision makers' information needs. Decisions and actions are the end products of managers' work as Drucker (2000) states. Among the other areas of management, successful decision-making has an extremely important role in seasonal management.

In this paper, seasonal management is understood as a process which aims to manufacture and to deliver the required amount of ordered products on time to the market. Succeeding in seasonal management has a significant effect on an organization's financial performance. Thus, it is important to identify the information needs of the decision-makers involved in seasonal management. This paper discusses why it is important to identify these needs and what they are and what kinds of the methods for identifying the needs are available in the literature. In addition, the paper demonstrates how a Finnish tyre manufacturing company's BI function has identified decision makers' information needs related to seasonal management.

Keywords

business intelligence, case study, information management, information needs, manufacturing, seasonal management

Introduction

Essential information and knowledge are nowadays considered to be among the most important sources of competitive advantage. Nevertheless a large amount of information is not guaranteed to bring any advantage to an organization: the worst case is that it can confuse decision-making and rather to hinder than to promote an organization's operations. Therefore, it is important to know what kind of information and knowledge decision makers need, in which format, and when, in order to make as good decisions as possible. Identifying these

information needs can help diminish the gathering of excess information and make BI activities more effective.

In addition to decision-making in general, BI can be a useful aid in seasonal management. Seasonal management is a process aiming to manufacture and deliver the right amount of the required products on time to the market, a task that is most demanding and difficult in a situation where an organization has tens or even hundreds of different products and is highly dependent on their seasonal sale. The decision about how much of which products to produce and deliver to the market can be more accurate and successful with the help of relevant and timely information provided by BI functions.

The aim of this paper is to discuss why it is important to identify decision makers' information needs and what kinds of methods for identifying the needs are available in the literature. In addition, the objective of the paper is to demonstrate how a Finnish tyre manufacturing company's BI function has identified decision makers' information needs related to seasonal management. The research is conducted with an overview of the literature. The objectives are also approached by a case study. A case study approach is used to ensure a more pragmatic view to the research subject. The case study is conducted by individual interviews with eleven decision-makers having a key role in seasonal management in the case company. The interviews were carried out as thematic interviews: there are 19 questions on five different themes.

Information needs in decision-making

The idea that information and knowledge provides a great competitive advantage allures many companies to amass as much information as they can. The increasing amount of information available makes this approach even more tempting. Nevertheless, a vast amount of information is not guaranteed to bring any advantage to an organization: gathering and processing large quantities of information is more likely to hinder than to promote an organization's decision-making. The key to gaining a competitive advantage from information is that the information should be essential and relevant not to mention the other quality related aspects.

Decision makers benefit only from information that they regard as useful and meaningful. It makes no sense to spend resources to acquire information that is not to be used in decision-making. The organization can reduce the gathering of excess information by identifying the decision makers' information needs i.e. what information they really need, when they need it, and in which format to make optimal decisions and thereby gain the organization a competitive advantage.

According to Höglund and Persson (1985, 43–44) information needs can be divided into objective and subjective needs. An objective information need is what is usually thought to be needed to solve a given problem whereas a subjective information need is something an individual himself thinks he needs to solve the problem in hand (Höglund & Persson 1985, 44). According to Line (1974, 87) information needs consist of five categories:

- *Need*: the information one has to have to carry out the task regardless of the actual need been sensed.

- *Want*: the information that is wanted although there may have been no attempt to purchase it.
- *Demand*: such information that inquiries are made in order to acquire it.
- *Use*: when a middleman, such as an information system or a BI worker, is used to purchase the information.
- *Requirement*: need, want, demand, use, or all together lay a claim to the information.

Butcher (1998, 45) recognizes that a decision-maker's information needs depend on the decisions he makes at his job. Harvey and Meiklejohn (Lahti et al. 1993, 8–9) state that in strategic decision-making the focus is on the external market information, but internal information is also needed. The style of decision-making at the strategic level is intuitive and based on a person's experience and judgement. Tactical decisions are made mostly on the basis of statistical material that consists equally of internal and external information. On the operative level, the decisions are mostly founded on internal information and the decision-making style is deterministic. (Lahti et al. 1993, 8–9.) Although not stated in the literature here, it is important to note that only very simple and well structured problems can be solved solely on the basis of statistical material. Decision-making in real life always requires a certain amount of tacit knowledge of the decision maker(s).

Wilson (1997, 552) says that no-one but the person himself can know the person's information needs unless the person articulates them. Therefore, no-one can identify a person's information needs on his behalf. According to Butcher (1998, 57), however, it is very hard for decision makers to articulate their information needs. Butcher argues that a frequent reason for this is that decision-makers do not know what information is available or they do not understand how it is obtained or used. From the authors' perspective, it is not self evident that decision-makers are even able to identify their own information needs. In many decision-making situations it is more important to find the right questions to ask than to find the right answers to the questions posed.

Pirttilä (2000, 66) recognizes that one of the problems in identifying information needs is that the information needs of a decision-maker may also be subconscious. According to Pirttilä (ibid.), these subconscious needs cannot be assessed even with the best methods because they usually surface only in a decision-making situation. As always, when carrying out an empirical study, the selecting of an appropriate method is crucial. When assessing the information needs of decision-makers, the method should be chosen carefully by comparing those available. The method of choice should be the most suitable for the particular task. The following section presents three methods which are often used in the assessment of information needs and compares them with each other.

Methods of identifying information needs

Letter of inquiry

The main benefits of a letter of inquiry are its easiness and economy. Answers can be analyzed swiftly and "tick blank-sheets" can be analyzed quantitatively. A letter of inquiry is filled in independently by a respondent and therefore, it takes less of the researcher time. According to Valli (2001, 101), the absence of the researcher also prevents his persona from

influencing the answers. In addition, a large number of people can be reached quickly by a letter of inquiry.

Kunz et al. (1976, 21) stress that although a letter of inquiry is a popular method in assessing information needs it is not the best suited for this purpose. New or subconscious information needs cannot be assessed by a multiple-choice questionnaire. Open-ended questions provide wider, more spontaneous and more unforeseeable answers and allow respondents to express their information needs more freely. Valli (2001, 111) points out that often answers to open-ended questions are vague and imprecise or the questions are left unanswered. In addition, a respondent may misunderstand the questions.

Another downside of a letter of inquiry is usually its low response rate. According to Kunz et al. (1976, 22), the length and the structure of the questionnaire, the clarity of the questions, and how important a respondent considers the issue for himself affect the response rate. The response rate may possibly be raised by sending an informing letter to respondents beforehand and making motivating phone calls after the questionnaire has been sent out.

Kunz et al. (1976, 22) find a letter of inquiry to be not appropriate enough for assessing information needs. The low response rate lowers the credibility but often, results are also skewed by answers because only the truly concerned respond. Valli (2001, 102) adds that a researcher cannot be sure that the right person has answered the questions or if someone else has filled in the form for him. Kunz et al. (1976, 23) suggest that the best way to make good use of a letter of inquiry in assessing information needs is to use it in conjunction with some other method.

Observation

Grönfors (2001, 124) divides observation into participatory observation and concealed observation: in participatory observation a researcher makes observations as a part of the system under observation, whereas concealed observation is carried out unbeknown to the object. Kunz et al. (1976, 27) conclude that observation is far more expensive than, for example, a letter of inquiry, but to compensate the costs observation produces more accurate answers.

Grönfors (2001, 127) says that observation is used in situations in which there is not a lot of knowledge about the target of the examination. In this case, questions cannot be formulated beforehand. When charting information needs, the situation is usually very similar: guesses can be made about what kind of information needs a person has, but the answers may be just the opposite. It can also be very difficult to articulate information needs, especially subconscious needs. Kunz et al. (1976, 27–28) see observation as a good method when one wants to know all the information needs, not only those that the person is able to express.

Hirsjärvi and Hurme (2000, 28) emphasize that observation is used to identify the prevailing state of the phenomenon but it cannot clarify its past state. Therefore, it is also impossible to assess a person's information needs for some other point in time, such as the season or some point in the future. Future information needs cannot therefore be predicted by observation.

Observation is indeed a troublesome method in assessing information needs. Decision-making and the processing of information takes place inside a person's head; therefore it is very difficult or even impossible to observe them from outside. To learn about the information use of a decision-maker, his actions would have to be followed at every turn. However, this could affect the decision maker's behavior and so also, the results. According to Kunz et al. (1976, 27), observation is not suitable for examining a large group of people. Grönfors (2001) states that observation as a method is laborious and time-consuming. Hirsjärvi and Hurme (2000, 38) stress that a researcher has to be thoroughly educated to carry out observation. Both Grönfors and Kunz et al. consider that observation functions best when it is accompanying other methods.

Interview

Interview is one of the most used methods of information gathering. Hirsjärvi and Hurme (2000, 42) define interview as a scripted way of information gathering that has a certain goal and direction. Patton (1983, 196) recognizes that things which cannot be observed from the outside can be discovered by an interview. There are different kinds of interviewing techniques and their names and definitions vary. For example, Hirsjärvi and Hurme (2000, 43–44) list structured and semi-structured interviews, thematic interview and form interview. In the structured interview, the questions and response alternatives are strictly defined in advance, whereas in semi-structured interview the questions are the same for everyone but the interviewer may vary their order and the interviewee may answer in his own words. In the thematic interview questions are divided into different themes and the questions are open-ended. This facilitates the discussion between the interviewees and furthers their understanding of the issue. A form interview is simply a letter of inquiry from which an interviewer reads the questions aloud and then marks the interviewee's answers on the form. The choice of the type of interview is determined by the subject and the aim of the study. (Hirsjärvi & Hurme 2000, 43–48.)

Unlike when using a letter of inquiry in an interview, a researcher can usually change the order of questions and ask additional questions. Kunz et al. (1976, 26) find that this reduces the risk of misunderstandings. Hirsjärvi and Hurme (2000, 35) state that an interview is a good method when researching a little known or uncharted area or when it is known in beforehand that answers are likely to be elaborate and dissimilar. When assessing personal information needs, the purpose is not to elicit identical or homogeneous answers but to identify everyone's individual and genuine information needs no matter how much they differ from each other. Personal information needs rarely are exactly alike and therefore interview would seem to be the most suitable method for identifying decision makers' information needs. The interaction between a researcher and interviewees may elicit subconscious information needs and the discussion may enhance the interviewee's awareness of his information needs.

The downside of interview as a method is its costs. According to Hirsjärvi and Hurme (2000, 35) the expenses include the recording systems, materials, and possible travel and accommodation costs of a researcher. Kunz et al. (1976, 26) add that besides the costs, interviewing takes time and a researcher should be well versed in the subject.

The direct question “What do you want to know?” is not always the best way to find out the information needs of a decision-maker. Sometimes it may be wise to approach this question indirectly. For example, the interviewer could ask what in the decision maker’s opinion his company’s competitors should never find out about the company. Further, one could ask what the company’s competitors should not find out about the company’s customers or partners. This approach requires more creativity than the direct questions, but it can provide new and more valuable results and even open new insights on important business problems.

Business intelligence

Definitions of BI

A concept of BI is quite new and its definitions vary. In the literature, there is no coherent definition and authors tend to promote their own opinions on contents and meaning of BI (see e.g. Hirvensalo 2005, 25; Pirttimäki & Hannula 2003). Collins (1997, 4) recognizes BI as a process in which information about competitors, customers, and markets is gathered by legal means and analyzed to support decision-making. According to Prior (2004, 4) BI is a combination of any data, information, and knowledge concerning an organization’s operational environment and which leads to decisions that create competitive advantage for that organization. Sawka (1996, 47–52) emphasizes that BI is specifically the gathering of external information and predicting of changes in the markets. On the other hand, BI can be seen as a wider concept. Besides screening the external environment, BI is managing the information inside an organization. Barndt (1994, 22) stresses the role of internal information in BI, because in his opinion decision-making is based on an organization’s strategy, resources, and operative opportunities.

BI can also be used to describe different kinds of technological applications, some even see the technological approach to be just about all there is to BI (see e.g. Raisinghani 2004; Kalakota & Robinson 2001, 349–350). The function of these technological BI solutions is usually to process and warehouse the gathered data and information and to provide it to decision-makers.

In this study, BI is understood as a process by which an organization systematically gathers, manages, and analyzes information essential for its functions. It aims to provide accurate and timely information for operative and strategic decision-making. BI is considered in this study to be a comprehensive concept including both the internal and external information sources and the whole operating environment of a company.

Process models of information management

A BI process can be carried out following e.g. Choo’s (1998, 261) general process of information management which is illustrated in Figure 1. According to Pirttimäki and Hannula (2003, 254) Choo’s process can be seen as the basis for BI processes. Choo’s process consists of six sub processes, which work as a continuous cycle. As a result of these closely related phases, an organization adapts its behavior to its goals and the external environment.

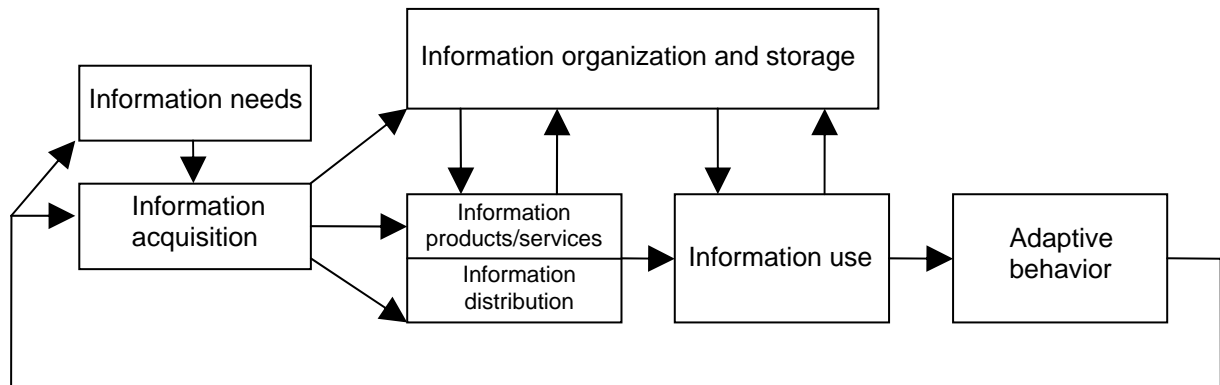


Figure 1. Process model of information management (Choo 1998, 261).

Identifying information needs is the base of the process but at the same time it is perhaps the most difficult part of it. In information acquisition, the reliability of the sources and the usefulness of information must be considered; the gathering of needless information expends resources and detracts from the credibility of a BI function. Information storage may also be a problem if there are no adequate provisions for it.

When developing new BI products and services, the genuine information needs are easily forgotten and products are created only for their own sake. According to Bärlund (2004), in the ideal case, BI products and services are created only to satisfy the needs of users. Identifying information needs is also important in the distribution of information: the information cannot be delivered to the users unless a distributor knows what information, in which format, to whom, and when it should be delivered.

All the previous phases are wasted if the information is not used. Organized information gathering and analyzing or efficient technological BI applications do not guarantee that the information will actually be used in decision-making. This is influenced by the attitudes towards BI. According to Barndt (1994, 44), the premise of a BI function is to convince decision-makers that it produces reliable, valuable, and useful information. The support of the top executives also influences the attitudes towards BI in an organization. Bärlund (2004) emphasizes that BI should be linked to an organization's other processes, because they provide information to the BI function. Bärlund designates this as the discussion of processes. Choo's process model is quite theoretical and applying it can be problematic. Pirttimäki and Hannula (2003, 255) state that typical BI processes offer a more practical way to manage information and knowledge. The literature introduces several different BI process models (see e.g. Vitt et al. 2002; Gilad & Gilad 1985; Thomas Jr. 2001) and the models seem to be quite similar, and frequently reminiscent of Choo's process model, which is a more general model of information and knowledge management. According to Pirttimäki and Hannula (2003, 259) the most significant distinctions between BI process models occur among others in the number of phases, structure of cycles, and sources of information. Most of the BI process models discuss at least phases that include information needs analysis, information acquisition, information storage, information distribution and information use. It is also typical for the process models to function as a continuous cycle, so that the last phase of the process leads to the very first phase, and thus the cycle continues.

Many companies have a separate BI function which produces different kinds of information concerning e.g. an organization's activities, competitors, customers, and environment: i.e. a function implements a BI process. The information provided by a BI function should be suitable to be used in an organization's decision-making process. In many companies, a BI function acts as a screen between information overload and decision-makers by preventing unnecessary information from getting into the decision-making process. In order that a BI function to select what is relevant from such an information overload, it should know which information is needed and which is not.

Seasonal management

Manufacturing the right product at the right time is an important but very difficult issue. When an organization has tens, hundreds, or even more different products it is very difficult to predict which ones will be most in demand during the next season and decisions are quite risky. One strategy is to rely on the business intelligence of the key decision-makers having tacit knowledge and experience from earlier seasons, but this will not work with recently launched new products. In industries where the product policy i.e. what products and how many will be manufactured has to be decided months before the season i.e. the products selling time, the risk of being wrong becomes greater, and the consequences more serious, when the product line decided on cannot easily be changed even if it becomes obvious that it is wrong for the season in hand.

In this paper, the term season is understood as the selling peak of products: the period when the demand for the products produced by an organization is at the highest level and the organization can charge the best price for its products. Seasonal management is a process which aims to manufacture and to deliver the required amount of the products ordered to the market on time.

According to an article in the Finnish magazine *Kauppa-lehti Optio* (Riikonen et al. 2004, 12), e.g. in clothing industry, it is typical that orders have to be made as early as six months beforehand. Every step of the distribution chain tries to minimize its own risk. Because retail stores do not want to tie up capital in a large product range, a manufacturer has to take bigger risks. In many industries, the manufacturing of products is been transferred to the Far East because of the lower production costs. The long distances between production plants and the trade centers cause that orders have to be made up even earlier than before. This increases the uncertainty of decision-making. (Riikonen et al. 2004, 12.)

Some branches of industry, such as tyre manufacturing, have two main seasons during which products are mostly demanded. Succeeding in these seasons has a significant effect on an organization's financial result. Thus it is vital for these companies to succeed in their seasonal management and to utilize all and only appropriate information in their decision-making.

Successful seasonal management consists of managing information in many areas of the business as Figure 2 illustrates. When making decisions concerning seasonal management, a decision-maker has to have information regarding e.g. the stock turnover of warehouses, customer satisfaction, demand, and external market. These small fragments of information together compose the mass of the information mass used in seasonal management decision-

making. This information mass can be overwhelming and at its worst, it can impede decision-making when decision-makers cannot piece together which of the information is critical and relevant to the season.

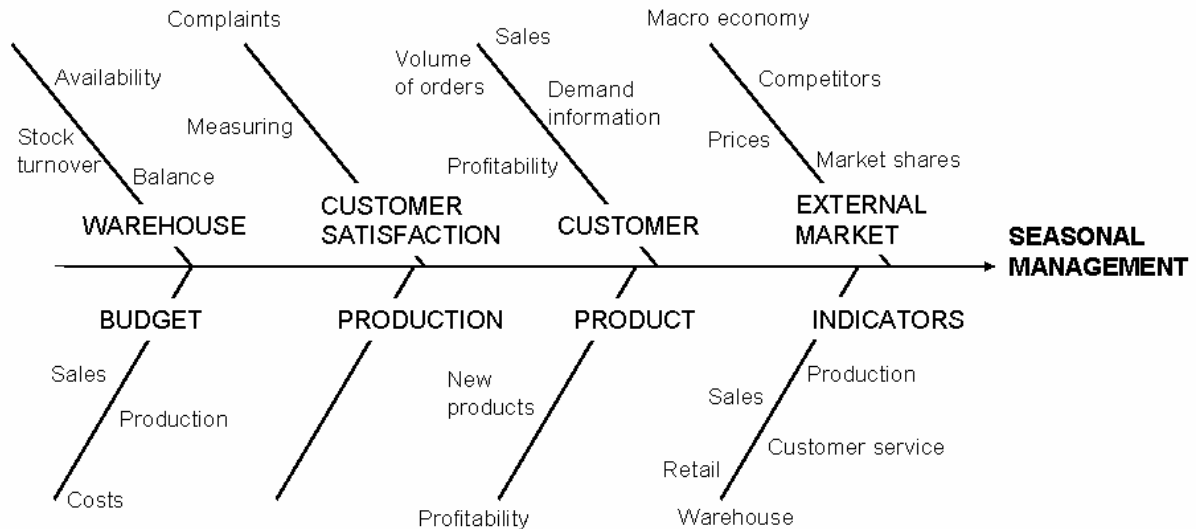


Figure 2. Seasonal management consists of managing information concerning many areas of business. (Modified from Saarela 2004a.)

Managing so much and so diverse information is a challenging and complex task. Decision-makers must have the opportunity to concentrate on decision-making and not be diverted by screening information. This kind of information management is often the task of an organization's BI unit. Different decision-makers need different information at different times and in different forms to make effective decisions. Their perspectives may also vary considerably and therefore, the information provided to them has to be customized to their needs. Identifying and assessing decision makers' information needs concerning seasonal management can help a BI unit to avoid the gathering of excess information and thus to make decision-making more effective and accurate.

The case study

The tyre manufacturing company

The case company develops and manufactures tyres for private cars and heavy machinery and operates mainly in the replacement markets. The company is the only tyre manufacturer that is focused primarily on Nordic weather conditions: 80 per cent of the revenue of the passenger car tyres comes from winter tyres. Seasonality of trade is characteristic of tyre markets, especially in the Nordic countries and Russia, where the seasonal changes in the weather greatly affect on the driving conditions requiring tyres for both summer and winter. Of the two seasons, the fall season is more significant to tyre manufacturers, while the other quarters are relatively quiet. Succeeding in the fall season largely determines the company's profit. The starting point of the fall season is very hard to predict. The first snow may fall in late September or even as late as after Christmas. The fall season lasts only about ten days and

thus it is very important not to fall behind at the beginning of the season and to manufacture sufficient amounts of the right products at the right time and to deliver the products to customers at a given time. In other words; succeeding in seasonal management is vital.

Because decision-makers have no crystal ball to foretell the future they often have to base their decisions concerning seasonal management on tacit knowledge and personal experience. Decisions made by intuition are not always adequate or well-founded. Accurate and timely information is a significant factor in the success of seasonal management decision-making. Precise and well-timed information helps to predict the demand for products, thereby, reducing the risk of random and unsuccessful decisions.

With the help of this study, a BI unit aimed to enhance its performance and ability to be even more effective in assisting seasonal management decision-making. In addition, the study aimed to locate the possible gaps in communication between the decision-makers and the BI unit. In other words, the objective of this study was to reveal the decision makers' so called knowledge profiles: what kind of knowledge they use and need, in what format, and when, in order to make the soundest possible decisions concerning the seasonal management as possible.

BI in the case company

The case company started BI operations in 1992, when market researches and other market information were concentrated in one place, and on this basis an information service was formed that since 1998 has been known as a BI unit. In the case company, the purpose of BI is to provide information to support operative, tactical, and strategic decision-making. The aim of BI is to enhance the controlling of external market information by gathering and analyzing the information centrally. The key functions are:

- the development of the tyre industry
- the coordination of different kinds of market surveys
- the centralized gathering of external market information
- the observation of weak signals
- carrying out special assignments and ad hoc analyses.

The company's BI unit consists of two workers; one coordinating the market surveys and the other working as a market analyst, who gathers and combines information and coordinates its accessibility. Some BI products, such as customer satisfaction survey, price survey, and other market surveys, are acquired from external research companies. The results of these researches are available in a BI intranet, to which all employees who need external market information in their work have access. Besides the market surveys, the BI intranet contains competitor information, reports, and news about the tyre industry. The BI functions of the case company are presented in Figure 3.

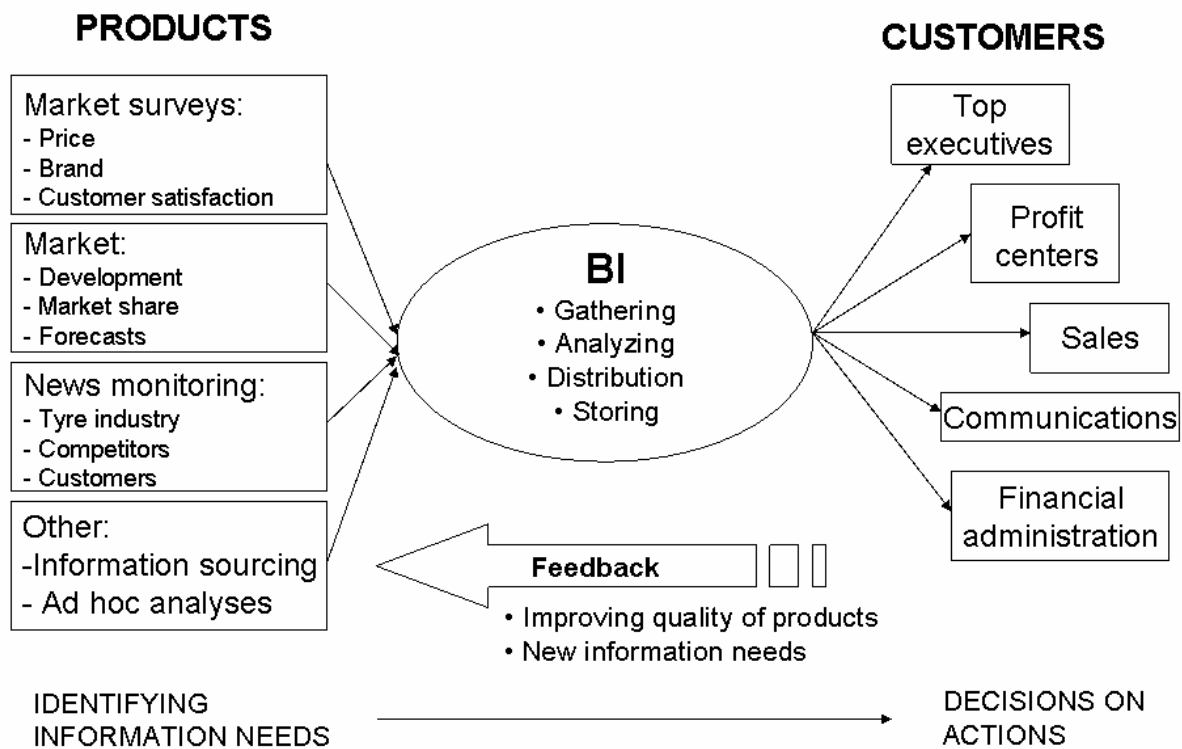


Figure 3. BI activities of the case company. (Saarela 2004b.)

The BI unit regularly follows the global news about the tyre industry. The market analyst picks the news of interest to the company and sends the headlines by email to all those who have access to the BI intranet, where the news can be read. The BI unit also makes reports and analyses on request. Recurring ad hoc queries may become regularly made BI products.

Identifying information needs of seasonal management decision-makers'

The information needs were assessed by individual interviews. In the case company, the decisions on seasonal management are often made in groups. Thus, decision-makers cannot be roughly divided according to the theoretical levels of decision-making. For the interviews, the decision makers were divided into two groups according to the level of decisions they mostly make: operational-tactical and tactical-strategic. Also, their job descriptions supported this division.

The decision-makers' knowledge profiles shaped on the basis of the interviews were very personal and varied in keeping with the individual's job description. A common factor was that although electronic information delivery was the preferred method, the majority of the interviewees put a high value on face-to-face communication with the BI unit personnel.

A BI clock was created for the operational-tactical decision-makers. The BI clock models the need for information produced by the BI unit in relation to time. The sectors are months of the year and the grey areas represent the months in which the individual mostly needs such information. These needs appear more specifically in the written description of the individual's knowledge profile. The information needs of the tactical-strategic level decision-makers differed from the other group, that it was hard or even impossible for them to describe

their information needs time-wise. Therefore, it was not feasible to represent their information needs in the form of the BI clock.

The interviews revealed new information needs and also suggestions to improve the existing BI products and the operations of the BI unit. The BI unit and its products were seen as a useful aid in decision-making and worth further development. Most of the new information needs were for new perspectives and fine-tuning of the existing BI products, although some novel information needs were also expressed.

The interviews showed that in the case company, the BI unit is considered something of an outsider, not a part of the core business functions. The role of the BI unit was not clear to all the interviewees, and some of them had not so far perceived its potential benefits to decision-making. The operative-tactical decision-makers were evidently more active users of the BI products and information provided by the BI unit than the tactical-strategic decision makers. The latter were not necessarily aware of receiving information produced by the BI unit. Many of the tactical-strategic decision-makers obtained their information via their subordinates and in that way, the operative-tactical decision makers act as an extension of the BI unit. This information flow is represented in Figure 4.

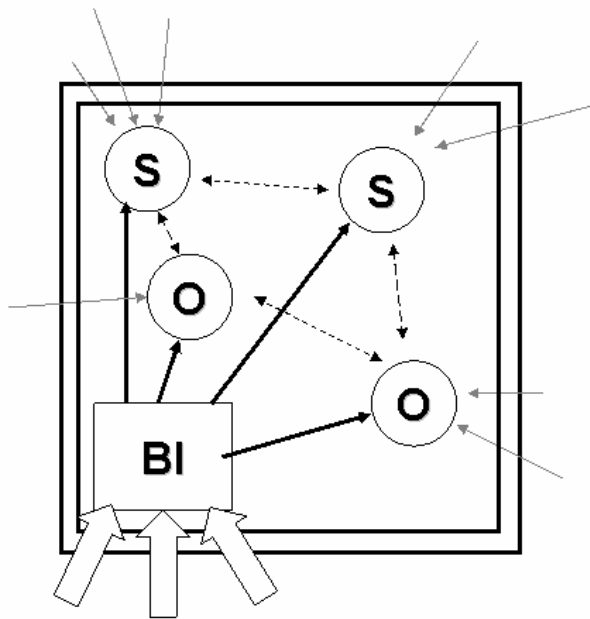


Figure 4. Information flows in the case company.

As Figure 4 shows, not all BI information in the case company comes straight from the BI unit to the decision-makers. It may be refined by other decision-makers on the way and some of the information does not go through the BI unit at all. The information flows illustrated in Figure 4 are explained as follows:

1. *The BI unit (BI)* gathers data and information from media and other sources, processes and warehouses it, and disseminates information to the decision makers.
2. *An operative-tactical decision maker (O)* interprets the information obtained from the perspective of his tasks, combines it with his own knowledge, beliefs, and possible information from his own sources. Then he delivers this refined information to his

superior, *the tactical-strategic decision maker (S)*. The operative-tactical decision makers also confer with each other, thereby adding different perspectives to the information.

3. The tactical-strategic decision-maker receives the same information from the BI unit than the operative-tactical decision-maker, but because the information may be only data or statistics, he does not necessarily have the time or the interest to process and analyze the information. The tactical-strategic decision-maker puts more weight on the information from the operative-tactical decision maker. This information is originally from the BI unit, but the operative-tactical decision-maker has enriched it with his own information and perspective. The tactical-strategic decision-maker combines the information obtained from his own sources with this information, and possibly conferring with others he broadens his insight of the matter at hand.

Identifying information needs led to new BI products and improving the existing BI products and services. It also raised the decision-makers' awareness of the BI unit's services and functions and for obtaining the opportunities to get information. In other words, the study also served as a promotion campaign for the BI functions in the case company.

Conclusions

Information is said to be the most important resource of managers and decision makers. Nowadays the difficulty is not in getting the information but rather how to select the relevant information from the abundance of data and information. In addition, in order to find something one has to know what to look for. These problems can be alleviated by identifying decision-makers' information needs and fulfilling them with the help of BI activities.

As discussed in this paper, many companies have a separate BI unit which gathers data and information from both internal and external sources, processes and stores it and finally disseminates the information to the decision-makers. The BI unit does the screening of the information on behalf of the managers so that they can focus on the actual decision-making. To make the BI actions possible the decision makers' information needs must be known to the BI unit.

This paper introduced some of the most common methods of identifying information needs; letter of inquiry, observation and interview. Since the clock speed of business is constantly increasing, it may now be even more difficult than before to find the genuine information needs. The traditional methods discussed in this paper are still useful, but they should be applied so as to promote the creativity needed in the decision-making of this era. For example, sometimes it may be wise to ask the decision-makers to specify, what the competitor should not find out about their company instead of asking what the decision-makers themselves want to know about their competitors.

The case study proved to the authors the importance of carefully formulating the questions by which the information needs are elicited. In order to find out the decision makers' genuine and relevant information needs the questions should not be leading or too restrictive, but should allow the decision-maker to express his needs freely and as fully as possible. The choice of the person(s) carrying out the identifying process is also important. They should

have an understanding of the identifying process, the whys and wherefores and preferably experience of the method used. However, it is debatable if they should know about the subjects of information needs. In this light the question emerges of possibly outsourcing the identification process or doing it inside the organization, for example in the BI unit. This is an interesting question for further discussion and study.

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