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Idea generation in new product development through business environmental scanning: the case of XCar

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Abstract

Purpose – To develop understanding of why the use of business information in new product development proves problematic in practice, and to show how obstacles and difficulties may be overcome by reference to the process of using business environmental scanning (BES) for the purpose in a real organisation.

Design/methodology/approach – A longitudinal case study based on a single company in the European automotive industry, the anonymous XCar. Data gathering combined participant observation and formal interviews with managers, both of which were scrupulously recorded, coded and interpreted.

Findings – The use of BES for generation of new product ideas should apply creativity to the interpretation of trend analysis, serving as a base for the formulation of product proposals. The literature argues that the process needs to be more exploratory than confirmatory, with the focus on identifying opportunities rather than, as is common, on reducing uncertainty. This case study shows how that was achieved in practice. Likewise, while some authors argue for the importance of the volume of the information collected, others assert that its use is more critical. The case study confirms the latter view, and shows how internal processes converted data into decision-making and planning inputs.

Research limitations/implications – As with any single-firm case study, further research is indicated, within other industries and related to different applications.

Practical implications – The results from this single case provide potentially useful insights into the application of business information gathering to the generation of new product ideas, both in theory and in practice. They show how the purpose of the process shifted slowly but steadily in one organisation from confirmation to exploration, though not without difficulty. One key lesson is that the managerial focus must change accordingly.

Originality/value – Few detailed empirical studies are available on the gathering and application of information on the business environment in practice, specifically as an aid to new product development. This study contributes to collective knowledge by shedding light on this area.

Keywords Automotive industry, Product development, Information research, Marketing information

Paper type Case study

Introduction

New product development in the automotive industry has become a central factor in achieving a higher competitive position, as diversification is seen as the way to avoid the trap of cars becoming commodities (Branstad *et al.*, 1999; Breitsprecher *et al.*, 2004; West, 2000). To be able to develop new successful products and features at a faster pace, a framework for generating new product ideas is required. It has been suggested

that it takes as many as 3,000 raw ideas to develop one successful product (Stevens and Burley, 1997) and that one characteristic of companies being successful in developing new products is their ability to generate new ideas (Cooper and Kleinschmidt, 1986; Flint, 2002; Mandry, 1973).

In the literature, the use of business information and knowledge in developing new product ideas in the very early phase of new product development is widely acknowledged (Cooper and Kleinschmidt, 1986; Flint, 2002; Hart *et al.*, 1999; Mandry, 1973; Ottum and Moore, 1997; Troy *et al.*, 2001). While some argue for the importance of the amount of information collected (Cooper, 1986; Troy *et al.*, 2001), others argue that more critical is the sharing and use of collected information (Adams *et al.*, 1998; Hart *et al.*, 1999; Henry, 1992; Hedin, 1992; Hamrefors, 1999), as studies show that collected market information and analysis to often is not used (Langerak *et al.*, 2004; Ottum and Moore, 1997; Troy *et al.*, 2001). However, when such information and results are used, little is said about what use might imply. Therefore, the aim of this case study is to develop the theoretical understanding of why the use of market and business information results are problematic in practice. It will illustrate that, depending on the purpose of the scanning, whether it is to explore new ideas or confirm an already chosen strategy, different processes with different focuses need to be applied. For the development of new product ideas, it is here suggested that focus needs to be on the identification of trends and their interpretation related to the specific firm strategy and capabilities, in order to become actionable knowledge and insight.

This prescription is in line with the critique arguing that traditional market research is often too narrow in terms of focus on current competitors, within-industry changes and current customers (Flint, 2002; Trott, 2001; Bennett and Cooper, 1979). By means of a case study of XCar in the automotive industry, where business environmental scanning (BES) is used as a tool to generate new product ideas, this paper seeks to contribute to understanding of the nature and role of business environment information in generating new product ideas. Detailed insights are presented into how the focus in the process has shifted from data collection and analysis towards more focus on trend identification and interpretation, permitting a deeper insight into future market needs that then becomes the base for idea generation.

Using BES for the purpose of generating new product ideas should apply creativity to the interpretation of trend analysis, serving as a base for the formulation of product proposals. This implies that BES needs to be more exploratory than confirmatory (Hart *et al.*, 1999), with the focus on identifying opportunities rather than, as is common, on reducing uncertainty.

The paper is structured as follows: a brief review of the literature in the field of environmental scanning is followed by notes on the choice of methodology and the data collection process, after which the case study of XCar is presented and discussed in terms of problems and opportunities being discussed. Finally, implications are identified and conclusions drawn.

The role of market information in generating new product ideas

New product development has become a central activity in the automotive industry, to the extent that several manufacturers have identified an increased ratio of new product launches as a key success factor to increased profit margins (Booz, Allen and Hamilton, 1982; Breitsprecher *et al.*, 2004; Montoya-Weiss and Caltone, 1994).

In striving for an increased pace of introduction of differentiated new products, ideas have to offer perceived customer value and a strong market orientation through a thorough understanding of the competitive situation, market opportunities and customer needs (Nonaka, 1991; Slater and Narver, 1995; Maidique and Zirger, 1984; Rothwell, 1972).

Reducing uncertainty is a central element of NPD (Spender and Kessler, 1995). From a market orientation point of view, reduction of uncertainty is made through collecting information on the areas of uncertainty and incorporating this information into the development process, thereby forming a deeper understanding of possibilities and expectations (Allen, 1985; Galbraith, 1986). The fundamental role of business information in the later development phase is to reduce uncertainties regarding the market conditions, including customer expectations and needs, and other competitive issues (Hart *et al.*, 1999; Moenaert and Souder, 1990), which is here suggested to be more suitable when the need is to verify development. Shifting to idea generation in the pre-phase, the focus on reducing uncertainty needs to move towards the identification of opportunities (Kanter, 1988; Slater and Narver, 1995) and take a broad perspective: exploring rather than exploiting (Langerak *et al.*, 2004; Stevens and Burley, 2003). Based on other studies, it is further argued that a too strong belief in market research may constrain rather than support creative thinking and idea generation (Trott, 2001), as it may lead to an unduly narrow focus on customers' current perceived needs and not on the future possibilities (Martin, 1995; Hamel and Prahalad, 1994; Bennett and Cooper, 1979). This further tends to lead to stacking in the development of incremental new products, leading to missing the waves of disruptive technologies that are radically changing customer demand and the competition (Christensen and Bower, 1996). It is suggested that more emphasis should be placed on evaluating and interpreting current customer needs in relation to societal changes and emerging technologies that may affect customers' behaviour and subsequently their needs.

Differences of opinion as to reliance on business information in generating new product ideas may further be related to the definition of market orientation. Homburg and Pflesser (2000) have found that some definitions of market orientation are strongly related to specific activities and procedures to be carried out (Kohli and Jaworski, 1990). With this perspective, the focus tends to be on collecting business information and viewing the information as actionable (Troy *et al.*, 2001; Ottum and Moore, 1997). This is further reported to have become the practice in fast moving consumer goods (Trott, 2001). Viewing market orientation more as a culture or set of beliefs (Deshpandé *et al.*, 1993; Slater and Narver, 1994; Bennett and Cooper, 1979), the focus is more on achieving a deep understanding of customers and markets through interpretations of analysed market information in guiding the organization. This view is suggested as more appropriate in the context of developing new product ideas, as the time aspect is more long term than when using market information for verification in the later stages of NPD. It is suggested that the differences in defining market orientation may further affect how the collected and analysed data and information are used. However, there is a lack of detailed insight into how data and information on the business environment can be used and rendered actionable for idea generation in the pre-phases, through various steps of interpretation.

Taking the perspective that market data is an important source, but needs to be translated and interpreted and further complemented with other sources of information to enable the broad perspective needed in identifying future opportunities, BES can be

the right tool for collecting various kinds of information, knowledge and experience, and translating them into trends that are further interpreted into opportunities.

Business environmental scanning

BES is a common practice in the corporate strategy context to facilitate strategic decision-making (Saxby *et al.*, 2002) and involves the search for information about events and relationships in the environment of an organization with the purpose to assist top-management in setting the direction of the company and further courses of action (Boyd and Fuld, 1996). BES in an organized form is most often described in the management literature as an activity carried out by a specific department with the purpose of collecting, analysing and disseminating information and trend analyses to different parts of the organization in proactively support of decision makers (Fuld, 1988; Gilad and Gilad, 1988; Gilad, 1996; Hamrefors, 1992; Hamrefors, 1999; Meyer, 1987; Pagels-Fick, 1999).

In BES practice, what is problematic is making the scanning activity independent enough to have the freedom to be carried out with divergent rather than convergent perspectives, in order to make the process broader and not directed towards problem areas in order find solutions (Mendell, 1978; Cyert and March, 1992). On the other hand it is argued that the result of environmental scanning is also problematic, to the extent that it is difficult to achieve dissemination of the result into the organization, where it would be useful, in practice (Henry, 1992; Hedin, 1992; Hamrefors, 1999).

Collection of data and experiences

When starting a BES activity most often begins with creating a scanning frame defining what to look for, which is helpful in deciding on what information is valuable (Hamrefors, 1999). Aguilar defines environmental scanning as the activity of acquiring information not only through purposeful search but also through undirected viewing by informal means (Aguilar, 1967).

In carrying out scanning activities, there is rarely a problem of lack of information (Trott, 2001). Decision makers and organizations have access to far more information than they can handle. Many organizations focus on collecting a great deal of it without thinking about what data to collect. They furthermore lack the skills to capture the information, or just hurry through the ideation and screening phase (Flint, 2002). Therefore, scanning must be carried out selectively, according to Lozada and Calantone (1996), using non-traditional sources and applying deep and broad thinking that may lead to new insights into opportunities for improved competitiveness (Aguilar, 1967; Hambrick, 1982; Utterback, 1979). Examples Nokia taking up the notion of "human technology" and Apple adding design to the functional and user-friendly concept (Slaughter, 1999). Both companies had probably had access to the same information as many competitors, but they had not only read into it some very subtle signals about the business environment, but also interpreted it in the context of their businesses, and were therefore among the first to understand the increasing importance of design, image and style.

Collecting and analysing market data is further argued to enhance analytical thinking rather than creative thinking (Hart *et al.*, 1999). However, for the purpose of idea generation, traditional BES is often claimed to be too narrow in its focus on current competitors, within-industry changes and current customers, and in using too

many conventional tools such as focus groups, surveys and database material (Flint, 2002; Trott, 2001; Bennett and Cooper, 1979). Further, it is claimed that the focus is mainly on the use of business information to reduce uncertainty (Hamrefors, 1992, 1999; Sowrey, 1989; Ottum and Moore, 1997; Troy *et al.*, 2001). A BES activity used as a tool in generating new product ideas therefore needs to be more exploratory than confirmatory (Kinnear and Taylor, 1991; Leonard-Barton, 1991; Ortt and Schoormans, 1993; Hart *et al.*, 1999), and should adopt a broader scope to enable generation of new product proposals. This further implies a difference in how business information and knowledge are incorporated into the different activities and processes, and what types are used.

Different perspectives in the team
The performance and result of a BES activity is highly influenced by the group of people carrying it out, and the specific skills and knowledge brought in by the individuals. Those who perform the operation need to have the skills and abilities of future orientation, divergent thinking and creativity, in combination with the ability to work systematically and be experimental (Stevens and Burley, 2003).

The scope of scanning activities needs to be broad, outside the traditional boundaries of the organization and the industry, and furthermore carried out with an open mind (Aguilar, 1967; Hambrick, 1982; Slaughter, 1999), to allow for other data, "lone signals" and the use of unconventional sources (Voros, 2001; Slaughter, 1999). A general direction suggested is that environmental scanning needs to be more future-oriented, thorough, and creative than it generally is (Boulton *et al.*, 1982; Hines, 2003), and should allow an experimental approach to be taken (Trott, 2001), especially if the aim is generation of new, innovative product proposals (Utterback, 1979). This is because technological innovations often originate outside an industry that later will be strongly affected as the competitive nature changes when the innovation diffuses and causes further changes in the affected industry (Abell, 1978).

While acknowledging the relevance of using business environmental information in generating new product ideas (Cooper and Kleinschmidt, 1986; Kanter, 1988; Slater and Narver, 1995), as opposed to the view of Trott (2001) that it tends to produce customer-led behaviour, the crucial factor is how the type of data is selected and how they are handled (Hart *et al.*, 1999; Sowrey, 1989).

The case study shortly to be described here will contribute to the understanding of how more market-oriented idea generation can be conducted by using BES as a tool, while also demonstrating the ambiguity surrounding data collection and analysis (March and Olsen, 1979). It is suggested here is that it is not the amount of information gathered that is of importance, as some authors argue (Troy *et al.*, 2001), but rather the importance of having information from different sources that support creative thinking and exploration rather than analytical thinking (Hart *et al.*, 1999; Trott, 2001). Further, as the use of collected and analysed business information has been shown to be difficult in practice (Adams *et al.*, 1998), the results of this case study support the contention that the challenges lies in interpreting and translating market information in relation to the context, brand and product strategy of the firm, to make the market information more "actionable".

Given the claim that the literature mostly takes a macro-level perspective on the need for using business environment information (Hart *et al.*, 1999), without developing

understanding of the nature and role of such information or of the process, this study also contributes a detailed insight into the application of BES in practice.

Methodology

This case study employs a qualitative methodology (Denzin, 2000; Silverman, 1993, 2000). Whereas quantitative methods are primarily aimed at providing nomological knowledge and enabling predictions, qualitative methods emphasize a broader range of perspectives on complex interrelationships within a more limited number of empirical entities. Since this study is based on one single company, it is appropriate to speak of a "case study" approach (Eisenhardt, 1989; Yin, 2002), which combines participant observation (Atkinson, 1994) and interviews (Kvale, 1996). The former data-gathering technique is an ethnographic procedure, in which the researcher spends some time within the organization, to understand all the local idiosyncrasies and to pay attention to the nuances in a specific culture or community. This approach has been used in organizational studies in manufacturing companies (Dalton, 1959; Burawoy, 1979), service companies (Hochschild, 1983), and knowledge-intensive companies (Kunda, 1992). The complementary interview procedure is based on a hermeneutic approach, in which discussions with the interviewees are subject to interpretation. Where participant observation is useful in studying relationships and certain interactions in an organization, interviewing is more focused on understanding the individual interviewees' ideas and perspectives on their day-to-day activities.

Participant observations was carried out at weekly working meetings with the core team, meetings with departmental management, workshops, and other informal meetings during 2003 and 2004. In meetings and workshops, detailed field-notes were made, including both observations on actual activities and more personal reflections on the progress of the discussions and other relevant issues. These field-notes were transcribed, analysed and filed. Ten interviews were conducted with managers in the marketing and design functions, who were either part of the core team or members of an extended team that followed the work and participated in the final workshop. A semi-structured interview manual was used, with the flexibility of discussing spontaneously arising issues of interest, beyond its formal scope. Interviews lasted for about an hour each. All were transcribed and analysed.

The respondents were selected to represent the different functions, perspectives and managerial levels. The leader of the core team assisted the researcher and gave advice on appropriate interviewees. Table I shows the composition of the interview sample.

When analysing observations and interviews, the material was categorized and coded with fellow researchers assisting in interpretation. A pattern-matching approach was used (Yin, 2002), in which empirical observations are matched with theoretical assumptions. The analysis was further validated by means of reviews and discussions with respondents and other managers (Van de Ven and Huber, 1990), to obtain a consistent interpretation.

The case of business environment scanning at XCar
Background

In this case study of the anonymous XCar, a European car producer in the premium segment, BES is continuous in the more traditional areas, for confirmatory purposes, in the verification of new products under development, and also as a strategic support tool on a more general level. Though the company had experience of organized

Respondents	Department	Position	Role in the BES process
1	Marketing (product)	Manager	Head of core team
2	Marketing (product)	Sen. manager	Member of the core team
3	Design	Manager	Member of extended team
4	Marketing (brand)	Manager	Member of the core team
5	Marketing (strategy)	Sen. manager	Member of the core team
6	Marketing (product)	Sen. manager	Process owner
7	Design	Sen. manager	Member of the core team
8	Marketing (market intelligence)	Manager	Member of the core team
9	Marketing (market intelligence)	Sen. manger	Member of extended team
10	Marketing (market intelligence)	Manager	Member of extended team

Table I.
Interview respondents

scanning and a department supporting the organization with market intelligence, it had found that few ideas were generated by looking at the external environment and that much of its market intelligence was not used in this area. Most ideas were based on internal capabilities and technology development. Therefore, it was decided to set up a process for idea generation in the pre-phases of NPD, using BES as the tool. Based on collected market information, trends were to be identified and further interpreted into opportunity areas. A creative workshop then worked on the opportunity areas, for creation and development of new ideas.

Collection of data and experiences

In the first meeting of the core team, reflections were briefly made on last year's outcome. The results were to be more focused on trend identification and interpretation and not so much on data collection. The year before, the group had invested most of its time in collecting and analysing data and putting together a report of the results. Team members summed up previous practice as follows:

> We have the tendency to get into the data "swamp". Looking back at how time and effort was divided, we ended up looking for more data (manager 4).

and

> I agree that we have devoted far too much time on the search for data, but I also see the necessity . . . in order to be more familiarized with the selection of data. How will we otherwise know that we have enough data and the right data (manager 8)?

These different points of views on the importance of selection and analysis of data became a point of discussion and can be seen as an expression of the ambiguities inherent in the process.

Another point of view was that:

> We need to rely more on peoples' ability rather than the amount of data. We need to come to an understanding of what the data can do for us, but also to realize that creative good ideas do not come from data. Therefore, we should not focus too much on collecting a lot of data. We need to look for data that can give us to a good understanding of the market's possible directions for he future, and direct us in choosing areas to focus our creative ideas on (manager 2).

Ultimately, it was decided that the department of market intelligence was to collect and analyse data, but with guidance from the core team. A specification was drawn up by

the team, describing required data and questions they needed to answer. Two managers from market intelligence were also members of the core team and involved in the BES process. The role of the core team became to identify strong long-term market trends related to the premium segment of the automotive industry, and further work on the interpretations of those related to the core capability of the company and the brand.

When the first data analyses ere presented at a meeting, several members of the team asked for more data, ad actionable rather than general data. This led to a discussion of the role of market information, including the observation that:

> There is loads of data out there so we can probably get as much as we want. There is no risk we will run out of data (manager 1).

This was stated with irony, and sparked further discussion. One team member offered the following analysis:

> I guess that if we say we have found actionable data, then we need to question if we have done our job. With the time horizon we have of 6-10 years, there are no actionable data. Actionable data exist for today, but not for the future. Our interpretations are what is actionable, not the data (manager 4).

This insight led the team into the discussion of when to stop looking for data, and if there could be other inputs more valuable to the process. In response, one manager suggested that:

> We shouldn't sit here doing this work; we should be out there, where the customers are. What we will find here is probably more of the same. We need to look for different kind of inputs, more on how customers are using products. Why not look into some other materials we have on experiences from pilot projects related to the future (manager 2).

The team leader's response was that the financial resources and time for such an approach were not available, and the need was to find other ways. Another member then offered a positive view:

> Let's see what other input that could be of use for us. There is a lot of experience we could use, that is available. Let us talk to people we know, who have been experiencing certain phenomena that could be of interest here. We also have our concept centre, that is monitoring behavioural changes in society as well as emerging technologies related to the automotive industry, and the department doing technical competition analyses that we could use (manager 5).

The meeting resolved to look for different material on usage and behaviour related to transport, and to talk to people inside and outside the organization.

During the following period, different kinds of input were investigated and contacts made with people and units, to gain some fresh input to the process. Lively discussions were held within the core team on different future trends identified as relevant to the company. Some were of obvious relevance to new products for the company, while others were less so. There were different reactions to this. Some members articulated the need to be more focused, while others thought this process was needed in order to think outside the normal limits:

> I think we need to be more focused on getting the job done. We know our strategies and should not get carried away. We don't have that much time (manager 6).

and

We need to do more of this if we are to come up with something different from what we already have. We also need to put ourselves in the future and then look back to today. What will we see then? We need to get different angles to see new patterns (manager 2).

Further strong ambiguities were expressed as to choice of what to focus on, and how to negotiate the correct outcome.

As the work continued, identified trends were interpreted from different angles, to serve as the base for idea generation. One team member suggested comparing the identified trends with what had been identified in previous years in analysis of the corporate unit. The result was a clear difference, described as follows by one manager:

... our trends differ in the way that they are not in accordance with the structure of demographics, markets and economics. The trends identified here are more related to behaviour, structural changes, new technologies and needs (manager 4).

The team had already come up with ideas, which were collected during the process to be further elaborated later. Based on interpretations of trends, the core team defined some potentially interesting areas of opportunity for new products, to be discussed at a creative workshop attended by managers from other parts of the organization.

Different perspectives in the team

Representation of different marketing functions had been the guide for setting up the team in previous years. Now, a discussion took place on that rationale for that structure. One of the managers responsible for setting up the team commented:

The outcome of the last years' process has not been that creative, which I believe is due to [the fact] that we have not considered enough the different contributing skills ... we had representatives from Design in the team, but only in the late stage to draw sketches (manager 2).

Until then, the skills and experience of specific members had not been given much consideration. Now, in defining a core team, suggestions on participants were discussed in terms of the different characteristics that would contribute most to the work, especially of market experience, divergent and conceptual thinking, and the ability to think in terms of the future. The representatives from design has previously only been consulted to prepare sketches of the proposals in a later phase, but were now included in the core team from the beginning, to contribute to creative discussion of future concepts. In the first core team meeting, they emphasised the importance of not being under-utilised:

We are happy to be involved, but not only to draw sketches, as previously (manager 7).

A similar discussion took place in preparing for the creative workshop when the work of the core team on interpreting the trends into opportunities was finished. Some 20 people from different functions were identified for invitation, based now on their ability to contribute rather than their functional affiliation, as previously. Since many discussions earlier in the process had been around the importance of having an open mind, and the ability to think about the future in a creative way, the group had few disagreements about how to set up the workshops. Based on 12 interpreted trends, input from the concept centre and other material, five different areas for the workshop

were decided upon. In addition, brainstorming sessions were carried out with the focus on how to get the most out of the workshop and how to achieve the required creativity. The facilitators who would lead the groups in the workshop were considered as enablers for the creativity, and a separate meeting was held on the actual process of running the workshop.

In the workshop, participants were divided into five groups after an introductory plenary session. Each consisted of four people with a mix of competences and experiences, in order to open up for more creativity. For example, they included a former sales company CEO, a business concept development manager, a senior adviser to the executive management, a corporate communication manager, a brand specialist, a strategic design director and a product-planning manager. Groups were given a specific area in which to generate proposals. They worked on the task independently during the day, presented their proposals to the full workshop in the late afternoon, and responded to questions from a specially recruited panel. This last ingredient had been suggested early in the planning process:

> We need to get hold of the fundamentals in the ideas. If we only collect the written material handed in, we will lose quite a lot of the idea and not get a full understanding (manager 3).

The basic rationale was to have concrete explanations of how each group had come up with particular ideas and details, and thereby get closer to the reasoning behind them. The process was fully documented. Experimenting with such an evaluation board was based on the experiences from previous years, when the proposals had not been sufficiently elaborated and it was therefore difficult to decide whether or not to study them further. A concluding discussion duly took place on the different proposals and the next steps. There was a general sense that a more thorough modus operandi had indeed been valuable, as many of the proposals were considered worthy of being taken further. A few more iterations were performed before the ideas were finalised and submitted to the core team.

In a final meeting, the core team also reflected on the process of the work in comparison to earlier years and it was concluded that the BES activity could still be improved by further process development. The suggestion was made to investigate the merits of having a larger exercise every second year, inviting external consultants, people from other industries and students to participate in a separate workshop. It was also concluded that the BES process would benefit from more preparation, in terms of investigations of internal concept development, experiments and studies that could complement the other data.

Discussion

While there is a common agreement in the literature on the importance of market information in generating new product ideas (Cooper and Kleinschmidt, 1986; Flint, 2002; Hart *et al.*, 1999), studies report difficulties in integrating market information into the idea generation process (Adams *et al.*, 1998; Flint, 2002; Troy *et al.*, 2001). This case study brings detailed insight to an area where most reported research is on a macro level (Hart *et al.*, 1999) and therefore contributes to a deeper understanding of the role of market information in generating new product ideas.

In the case of XCar, a scanning process were set up with the specific purpose of generating new product ideas. It had already existed in the company, but generally for

confirmatory purposes, for instance, when verifying products under development through data gathering and focus groups. The case shows that the new rationale was not fully grasped at the outset of scanning activity for generating new product ideas, and the process was at first carried out as if the objectives were confirmatory. As a result, the group did not progress beyond the conventional collection of data and simple analyses. A poor outcome in terms of new ideas during the first cycle made the team reflect on the process, first before starting and then continuously during the work, and it re-emerged in changed form, as shown in Figure 1 below.

The character of the process changed from more confirmatory to more exploratory. This shift in focus was achieved after continuous reflections and discussions led to a deeper understanding of the difference between the two approaches. To activate a stronger focus on exploration, different types of data were collected and the amount of data collection and simple statistical analyses was controlled. As a result, the core team went on to translate discernible patterns into trends and to interpret them in the workshops.

From market information collection to the step of interpretation of identified trends
Based on the findings of this case study, it is argued that it is not the amount of information gathered that is critical to idea generation but rather what it is, how it is collected, and if it is interpreted and translated through creative thinking and exploration in place of analytical thinking. However, the case also reveals ambiguities concerning the data collection process, and negotiation around the amount and type of data (March and Olsen, 1979). This is the result of path dependence in scanning
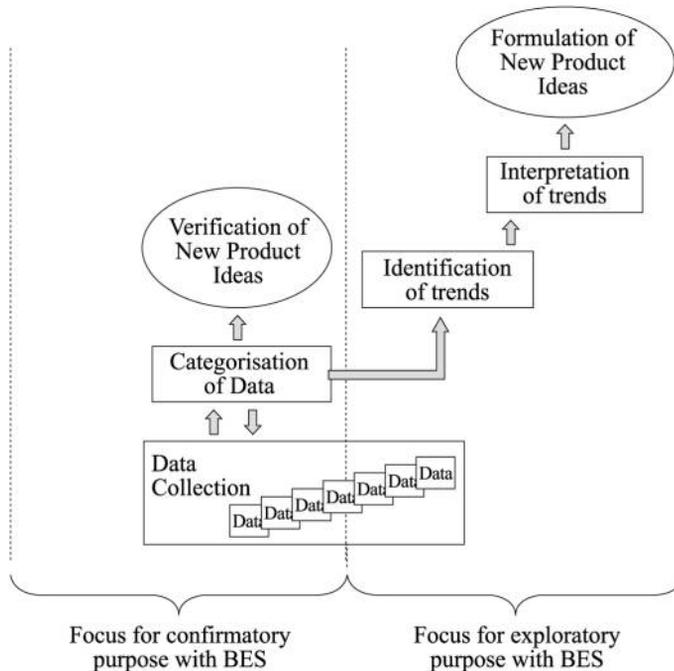
Figure 1.
Process overview

activities, were the previous common rationale at XCar had been confirmatory. With a totally different purpose for scanning activity, a different process and methods are needed. The findings further indicate that such change in perspective demands reflection on the role of market information in the process, to avoid continuing entanglement in simplistic forms of collecting and using business information. Business information and knowledge is useful only if it advances beyond the collecting and analysing of "off-the-shelf" data and statistics, and moves towards interpretations of trends in relation to vision of the organization and wider societal considerations (Martin, 1995). Too much focus on collection with a narrow view on data and the analysis, could be disastrous in practice, as could "jumping" on trends that can be measured and captured through statistics (Celente, 1990). For a more exploratory and innovative approach, a focus on interpretation is crucial (Kinnear and Taylor, 1991) and is often seen to be more difficult than identifying the trends as such (Yasai-Ardekani and Nystrom, 1996). In this case where there was no common understanding from the beginning of what an exploratory scanning process was, it became problematic to overcome the confirmatory norm. Nevertheless, with constant discussions and reflections in the team on methods and process to accomplish a more explorative result, learning was achieved and a new process emerged.

With some effort, the approach used has been widened beyond traditional collection of data towards collecting more on emerging patterns related to product usage and behaviour from different sources, including market learning from experiments and pilots and investigations by the concept centres. The difficulties still to be fully overcome seem to lie in how to take the step into interpretation and translation and also how to encourage creative thinking and exploration rather than analytical thinking, to support idea generation. The case study shows that this was accomplished at XCar via interpretation of trends, followed by creative workshops. In those steps, the market and business information was internalised alongside different types of internal knowledge around products, and further "used" in the generation of new product ideas.

If BES is reduced in practice to off-the shelf data collection and analysis, it will not be surprising if the required exploratory results do not appear. It is argued that the purpose of the BES needs to be strongly visible in the process.

Different perspectives and skills in the team
The literature suggests strongly that it is crucial to have different perspectives involved in the team (Flint, 2002), and to include members who are creative, future oriented and capable of divergent thinking (Stevens and Burley, 2003). The case study shows that the need for variety can be interpreted differently in practice, as having different functions represented or different skills and capabilities. In the case of XCar resolution resulted from formal discussion relating to the result of previous processes. At first, "different perspectives" was understood to mean having different departments and functions represented. Later, process skills such as creative thinking and divergent thinking were more deliberately sought, not only when recruiting to the core team, but also when invitations to the workshops were considered. It can be concluded that different perspectives and skills are vital to the critical phases of the process, which seem to be the interpretation and translation of trends into areas of opportunities.

Even if the BES activity is driven by a marketing perspective, it does not need to exclude those from such strategically important areas for product development as

R&D or concept design. Participants in the BES process at XCar were drawn from marketing and design. It is suggested that the BES should be more strongly linked to activities carried out within the other two functions mentioned in order to capitalize on work carried out with a strongly future oriented view relating to new products. Further, cooperation with the concept centres should also be further developed, since there is much to learn in terms of ways of working related to integration of perspectives as well as their specific focus on future trends, not only within design but also in terms of technology and customers.

There was relatively little discussion of the possibility of inviting the participation of outsiders from another industry or experts in future thinking. As most of the people involved has been working in the company for several years, it could be argued that their perspectives and views were mirroring those of the organization. During the phase where trends are identified and elaborated, the process could benefit significantly from having external participants with experience in anticipating future trends, and perspectives from beyond the automotive industry.

Conclusions

The utilization of BES activity in generating new product ideas is a rather creative process. Based on the findings of the case study, the outcome seems to have improved new product proposals, by development of the process towards enabling a more creative approach, "thinking outside the box", and by becoming more experimental and opportunity-oriented, not by focusing on reducing uncertainty. The process has developed from concentrating merely on the collection of data to focusing more on the creative part, where trends are elaborated and interpreted in relation to the strategic direction of the company and its capabilities. It has gone from taking action based on data collected, to using the data collected to increase the understanding and knowledge of the market in order to speculate and anticipate future trends, and from there generate new product ideas. If developed further, the BES process may become an intelligence generation capability to XCar. Further, as it can be seen as an early step in the product development process, such a capability would also lead to a more thorough concept phase, which is identified as being a strong factor for improvement in developing successful new products (Koen *et al.*, 2001). This will eventually lead to improved corporate performance and increased competitiveness.

The results from this single case provide valuable insights into the use of business information in new product idea generation, both in theory and in practice. In an attempt to generalizing the findings, it may be argued that different processes and methods need to be applied depending on the purpose of the scanning activity. Findings from previous studies have indicated that a lack of experience in BES is a potential explanation for practical problems (Ottum and Moore, 1997). In this case, the findings indicate the opposite. Even though XCar has extensive experience in handling market intelligence activities, it has mostly consisted of confirmation-oriented scanning. The problems and difficulties in carrying out a more explorative type of scanning are partly due to path dependence on the confirmatory orientation, which militates against a different approach with a different process and methods. Rather than not utilizing market information in developing new ideas, as some authors radically suggest (Trott, 2001; Martin, 1995), it seems preferable to keep the purpose of environment scanning in mind and reflect on how that purpose is visible through the

design of the process and the methods used. This may help in breaking free of past behaviour and developing new capabilities. Applying a too broad and general process based on a confirmatory purpose is likely to lead to the problems found in previous research, relating to acting on current customer needs for future product ideas. Such a general process unrelated to the purpose may further be an explanation for the problems encountered with BES in practice.

A reflection prompted by this case is whether the experience of utilizing environmental scanning for generation new product ideas may also be of importance in determining how confirmatory oriented scanning is conducted. In the automotive industry, many of the developed products are upgrades of current products. With a more exploratory approach, much can be learned from different perspectives, that can be applied to deciding which changes to focus on in coming upgrades, with current customer needs in focus.

As there are difficulties and risks in generalizing from a single case study, further research is suggested with regard to the different purposes and processes of BES and its areas of application.

References

Abell, D.F. (1978), "Strategic windows", *Journal of Marketing*, Vol. 42 No. 1, pp. 21-6.

Adams, M.E., Day, G.S. and Dougherty, D. (1998), "Enhancing new product development performance: an organizational learning perspective", *Journal of Product Innovation Management*, Vol. 15 No. 5, pp. 403-22.

Aguilar, F. (1967), *Scanning the Business Environment*, Macmillan, New York, NY.

Allen, T.J. (1985), *Managing the Flow of Technology*, MIT Press, Cambridge, MA.

Atkinson, M.P.H. (1994), "Ethnography and participant observation", in Denzin, N.K. and Lincoln, Y.S. (Eds), *Handbook of Qualitative Research*, Sage, Thousand Oaks, CA, pp. 248-61.

Bennett, R.C. and Cooper, R.G. (1979), "Beyond the marketing concept", *Business Horizons*, Vol. 22 No. 3, pp. 76-84.

Booz, Allen and Hamilton (1982), *New Product Development of the 1980s*, Booz, Allen and Hamilton Inc., New York, NY.

Boulton, J.S., Lindsay, W.M., Franklin, S.G. and Rue, L.W. (1982), "Strategic planning determining the impact of environmental characteristics and uncertainty", *Academy of Management Journal*, Vol. 25 No. 3, pp. 500-9.

Boyd, B.K. and Fuld, J. (1996), "Executive scanning and perceived uncertainty: a multi-dimensional model", *Journal of Management*, Vol. 22 No. 1, pp. 1-21.

Branstad, P., Williams, T. and Rodewig, T. (1999), "Challenges facing the global automotive industry", *Insights: Consumer and Engineered Products*, Vol. 1 No. 1, pp. 1-8.

Breitsprecher, C., Toulemonde, G. and Lache, R. (2004), *Global Automotive Industry. The Drivers: How to Navigate the Auto Industry*, Deutsche Bank, Frankfurt am Main.

Burawoy, M. (1979), *Manufacturing Consent: Changes in the Labour Process under Monopoly Capitalism*, University of Chicago Press, Chicago, IL.

Celente, G. (1990), *Trend Tracking*, Warner, New York, NY.

Christensen, C.M. and Bower, J.L. (1996), "Customer power, strategic investment and the failure of leading firms", *Strategic Management Journal*, Vol. 17 No. 3, pp. 197-218.

Cooper, R.G. and Kleinschmidt, E.J. (1986), "An investigation into the new product process: steps, deficiencies and impact", *Journal of Product Innovation Management*, Vol. 3 No. 1, pp. 71-85.

Cyert, R.M. and March, J.G. (1992), *A Behavioural Theory of the Firm*, Blackwell, Cambridge, MA.

Dalton, M. (1959), *Men Who Manage: Fusion of Feeling and Theory in Administration*, Wiley, New York, NY.

Denzin, N.K. (2000), "The practices and politics of interpretation", in Denzin, N.K. and Lincoln, Y.S. (Eds), *Handbook of Qualitative Research*, Sage, Thousand Oaks, CA, pp. 897-922.

Deshpandé, R., Farley, J.U. and Webster, F.E. (1993), "Corporate culture, customer orientation and innovativeness in Japanese firms", *Journal of Marketing*, Vol. 57 No. 1, pp. 23-37.

Eisenhardt, K.M. (1989), "Building theories from case study research", *Academy of Management Review*, Vol. 14 No. 4, pp. 532-50.

Flint, D.J. (2002), "Compressing new product success-to-success cycle time – deep customer value understanding and idea generation", *Industrial Marketing Management*, Vol. 31 No. 4, pp. 303-15.

Fuld, L.M. (1988), *Monitoring the Competition. Find out What's Really Going on over There*, Wiley, New York, NY.

Galbraith, J.R. (1986), *Designing Complex Organizations*, Addison-Wesley, Reading, MA.

Gilad, B. (1996), *Business Blindspots*, Infonortics, Calne.

Gilad, B. and Gilad, T. (1988), *The Business Intelligent System. A New Tool for Competitive Advantage*, AMACOM, New York, NY.

Hambrick, D.C. (1982), "Environmental scanning and organizational strategy", *Strategic Management Journal*, Vol. 3 No. 2, pp. 159-74.

Hamel, G. and Prahalad, C.K. (1994), "Competing for the future", *Harvard Business Review*, Vol. 72 No. 4, pp. 122-8.

Hamrefors, S. (1992), "Practical implementation of business intelligence services in business organizations", in Sigurdson, J. and Tågerud, Y. (Eds), *The Intelligent Corporation*, Taylor Graham Publishing, London.

Hamrefors, S. (1999), "Spontaneous environmental scanning", *EFI*, The Economic Research Institute, Stockholm School of Economics, Stockholm.

Hart, S., Tzokas, N. and Saren, M. (1999), "The effectiveness of market information in enhancing new product success rates", *European Journal of Innovation Management*, Vol. 2 No. 1, pp. 10-35.

Hedin, H. (1992), *Competitor Intelligence*, Department of Business Administration, University of Lund, Lund.

Henry, K.E. (1992), *External Relations and the Foreign Firm*, University Institute of Comparative Culture Business, Tokyo.

Hines, A. (2003), "An audit for organizational futurists: ten questions every organizational futurists should be able to answer", *Foresight*, Vol. 5 No. 1, pp. 20-33.

Hochschild, A.R. (1983), *The Managed Heart*, University of California Press, Berkeley, CA.

Homburg, C. and Pflesser, C. (2000), "A multiple-layer model of market-oriented organizational culture", *Journal of Marketing Research*, Vol. 37 No. 4, pp. 449-62.

Kanter, R.M. (1988), "Creating the creative environment", *Management Review*, Vol. 75 No. 2, pp. 11-13.

Kinnear, T.C. and Taylor, J.R. (1991), *Marketing Research: An Applied Approach*, McGraw-Hill, Singapore.

Koen, P., Ajamian, G., Burkart, R., Clamen, A., Davidson, J., D'Amore, R., Elkins, C., Herald, K., Incorvia, M., Johnson, A., Karol, R., Seibert, R., Slavejkov, A. and Wagner, K. (2001), "Providing clarity and a common language to the fuzzy front end", *Research Technology Management*, Vol. 44 No. 2, pp. 46-55.

Kohli, A.K. and Jaworski, B.J. (1990), "Market orientation: the construct research propositions and managerial implications", *Journal of Marketing*, Vol. 54 No. 2, pp. 1-18.

Kunda, G. (1992), *Engineering Culture*, Temple University Press, Philadelphia, PA.

Kvale, S. (1996), *Interviewing*, Sage, London.

Langerak, F., Hultink, E.J. and Robben, S.J. (2004), "The role of predevelopment activities in the relationship between market orientation and performance", *R&D Management*, Vol. 34 No. 3, pp. 295-309.

Leonard-Barton, D. (1991), "Inanimate integrators: a block of wood speaks", *Design Management Journal*, Vol. 2 No. 3, pp. 60-7.

Lozada, H.R. and Calantone, R.J. (1996), "Scanning behaviour and environmental variation in the formulation of strategic responses to change", *Journal of Managerial Issues*, Vol. 8 No. 3, pp. 310-25.

Maidique, M. and Zirger, B.J. (1984), "A study of success and failure in product innovation", *IEEE Transactions on Engineering Management*, Vol. 31 No. 4, pp. 192-203.

Mandry, G.D. (1973), *New Product Development in the UK Grocery Trade*, Manchester Business School, Manchester.

March, J.G. and Olsen, J. (1979), *Ambiguity and Choice in Organizations*, Universitetsförlaget, Oslo.

Martin, J. (1995), "Ignore your customers", *Fortune*, Vol. 131 No. 8, pp. 121-6.

Mendell, J.S. (1978), "The practice of intuition", in Fowles, J. (Ed.), *Handbook of Futures Research*, Greenwood Press, Westport, CT.

Meyer, H.E. (1987), *Real World Intelligence*, Widenfeld & Nicolson, New York, NY.

Moenaert, R.K. and Souder, W.E. (1990), "An information transfer model for integrating marketing and R&D personnel in NPD projects", *Journal of Product Innovation Management*, Vol. 7 No. 2, pp. 91-107.

Montoya-Weiss, M.M. and Caltone, R.J. (1994), "Determinants of new product performance: a review and meta-analysis", *Journal of Product Innovation Management*, Vol. 11 No. 5, pp. 397-418.

Nonaka, I. (1991), "The knowledge-creating company", *Harvard Business Review*, November-December, pp. 96-104.

Ortt, R.J. and Schoormans, J.P.L. (1993), "Consumer research in the development process of a major innovation", *Journal of the Market Research Society*, Vol. 35 No. 4, pp. 375-87.

Ottum, B.D. and Moore, W.L. (1997), "The role of market information in new product success/failure", *Journal of Product Innovation Management*, Vol. 14 No. 4, pp. 258-73.

Pagels-Fick, G. (1999), Industrilitteratur, Malmö, Att söka sin framtid "Business Intelligence" för affärsutveckling och strategisk precision.

Rothwell, R. (1972), "Factors for success in industrial innovations: project SAPPHO – a comparative study of success and failure in industrial innovation", Science Policy Research Unit, University of Sussex, Brighton.

Saxby, C.L., Parker, K.R., Nitse, P.S. and Dishman, P.L. (2002), "Environmental scanning and organizational culture", *Market Intelligence & Planning*, Vol. 20 No. 1, pp. 28-34.

Silverman, D. (1993), *Interpreting Qualitative Data*, Sage, Thousand Oaks, CA.

Silverman, D. (2000), "Analyzing talk and text", in Denzin, N.K. and Lincoln, Y.S. (Eds), *Handbook of Qualitative Research*, Sage, Thousand Oaks, CA, pp. 821-34.

Slater, S.F. and Narver, J.C. (1994), "Does competitive environment moderate the market orientation – performance relationship?", *Journal of Marketing*, Vol. 58 No. 1, pp. 46-56.

Slater, F.S. and Narver, J.C. (1995), "Market orientation and the learning organization", *Journal of Marketing*, Vol. 55 No. 3, pp. 63-74.

Slaughter, R.A. (1999), "A new framework for environmental scanning", *Foresight*, Vol. 1 No. 5, pp. 441-51.

Sowrey, T. (1989), "Idea generation: identifying the most useful techniques", *European Journal of Marketing*, Vol. 24 No. 5, pp. 20-9.

Spender, J.C. and Kessler, E.H. (1995), "Managing the uncertainties of innovation", *Human Relations*, Vol. 48 No. 1, pp. 35-56.

Stevens, G.A. and Burley, J. (1997), "3000 raw ideas = 1 commercial success", *Research Technology Management*, Vol. 40 No. 3, pp. 16-27.

Stevens, G.A. and Burley, J. (2003), "Piloting the rocket of radical innovation", *Research Technology Management*, Vol. 46 No. 2, pp. 16-25.

Trott, P. (2001), "The role of market research in the development of discontinuous new products", *European Journal of Innovation Management*, Vol. 4 No. 3, pp. 117-25.

Troy, L.C., Szymanski, D.M. and Varadarajan, P.R. (2001), "Generating new product ideas: an initial investigation on the role of market information and organizational characteristics", *Academy of Marketing Science*, Vol. 29 No. 1, pp. 89-101.

Utterback, J.M. (1979), "Environmental analysis and forecasting", in Schendel, D.E. and Hoffer, C.W. (Eds), *Strategic Management: A New View of Business Policy and Planning*, Little, Brown & Company, Boston, MA.

Van de Ven, A.H. and Huber, G.P. (1990), "Longitudinal field research methods for studying processes of organizational change", *Organization Science*, Vol. 1 No. 3, pp. 213-9.

Voros, J. (2001), "Reframing environmental scanning: an integral approach", *Foresight*, Vol. 3 No. 6, pp. 533-51.

West, P. (2000), *Organisational Learning in the Automotive Sector*, Routledge, London.

Yasai-Ardekani, M. and Nystrom, P.C. (1996), "Designs for environmental scanning systems: tests of a contingency theory", *Management Science*, Vol. 42 No. 2, pp. 187-204.

Yin, R.K. (2002), "Case study research", *Design and Methods*, Sage, Thousand Oaks, CA.

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3. Johan Frishammar, Ulrich Lichtenthaler, Anders Richtnér. 2013. Managing process development: key issues and dimensions in the front end. *R&D Management* **43**:3, 213. [CrossRef]

4. David Golightly, Niels Lohse, Anders Opperud, Halimahtun M. Khalid, Matthew Peacock. 2012. An ontology for relating affective needs to design parameters: development process and content. *Theoretical Issues in Ergonomics Science* **13**, 393-410. [CrossRef]

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