Information management for materials supply systems design

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The aim of this paper is to categorise difficulties related to release and use of information for materials supply systems design during product development projects as well as specific approaches to deal with them. In the literature it has been argued that materials supply systems design should form one dimension of concurrent engineering and be coordinated with product and production systems design although little research on how to manage it has been presented. The research presented in this paper is based on multiple sources of data, mainly gathered by means of three case studies conducted at two companies from the automotive industry. The difficulties are categorised in terms of whether or not they are related to a concurrent engineering context. The approaches are categorised with regard to whether or not they focus on difficulties related to a concurrent engineering context, and whether or not they focus on the materials supply systems designers and their work.

Keywords: materials supply; product development project; concurrent engineering; information management

1. Introduction

Technology development and competition are very intense in many industries, and companies have much to gain from reaching the market with new technology and products ahead of their competitors. Therefore, companies try to shorten the product development time (Smith and Reinertsen 1998).

The increasing interest in shortening the time between concept and market for new products has highlighted the need for working with overlapping activities in product development projects (PDPs), i.e., concurrent engineering (CE). CE involves decisions being taken about, for example, the production system and the supply chain before the product is completely developed. In line with this, Thomke and Fujimoto (2000) advocate that, by shifting the identification and problem solving to the earlier phases of PDPs, development performance can be enhanced.

Fine (1998) advocates three dimensions of CE, namely product-, production systems- and supply chain design and is supported by Ellram et al. (2007). Fine (1998) explains that when companies do not treat supply chain design as an activity concurrent to product and production systems design, they often encounter problems at a later stage.
of product development, or with the product launch, logistical support, quality control, or production cost. Fine (1998) included make or buy, sourcing, and contracting decisions as well as inventory, delivery, and information systems in supply chain design. Recently, there has also been an increasing emphasis in the literature on coordinating product-, production systems-, and supply chain design decisions and journals have published special issues on this subject (Hult and Swan 2003, Rungtusanatham and Forza 2005). In these special issues, the scope of supply chain design decisions is defined quite broadly and includes decisions ranging from supplier selection to management of distribution channels. Ellram et al. (2007) expressed some critique of the research related to three-dimensional CE, for example, that the research is very deterministic and lacks empirical studies.

In this paper, the focus is on the materials supply system (MSS) and how to integrate the MSS design during PDPs. The MSS is the system that supplies materials from suppliers through the focal company’s production system to industrial buyers. The MSS thus comprises material flows between as well as within plants and includes both physical flows and their planning and control. The focus is on MSS designers as users of the information produced by others involved in the PDP.

Despite the importance of integrating MSS design during PDPs, little research on how to manage it is presented in the literature. Product development performance and CE have been the subject of extensive research (see e.g., Clark and Fujimoto 1991, Wheelwright and Clark 1992, Krishnan et al. 1997, Yassine et al. 2008). Much of this literature treats the overlap within design engineering, between product design and production systems design at a general level as well as the overlap between product design and the development of tools for manufacturing or assembly of the product. However, the MSS design during PDPs is seldom discussed. Much of the recent emphasis on coordinating product-, production systems-, and supply chain design decisions focuses on one or a few specific questions at a time e.g., postponement structure (Su et al. 2005) and product architecture (Fixson 2005), but the coordination of decisions is not related to PDPs.

The information flow is essential in a CE context where related activities overlap, and preliminary and partial information has to be released and used as it emerges (Clark and Fujimoto 1991, Krishnan et al. 1997, Yassine and Braha 2003). Clausing (1994) states that one principle that leads to the major benefits of CE, is the utilisation of all relevant information as early as possible. Accordingly, Yassine et al. (2008) argue that early release of preliminary information is of advantage to PDPs since it provides downstream activities with both a general sense of direction and an early feasibility check. In order to create opportunities to integrate MSS design at an early stage of PDPs, the release and use of information has to function well. However, as already discussed, hardly any CE literature could be found that focuses on difficulties related to MSS design during PDPs. Instead, the attention is on design engineering and production systems design. The aim of this paper is therefore to categorise difficulties related to release and use of information for MSS design during PDPs as well as specific approaches to deal with them.

In the following sections, literature on CE and information management is presented, in order to provide a theoretical frame of reference. The methodology and case studies are then described before the results are presented and discussed.
2. Concurrent engineering and information management

The core of CE is parallel design, e.g., parallel design of a product and the production system or product subsystems (Koufteros et al. 2001). However, several researchers strongly underline the risk inherent in parallel design, since time-consuming iterations may subsequently occur if the overlapping product development process is not carefully managed (Krishnan et al. 1997, Loch and Terwiesch 1998). Haque (2003) described several other problems in concurrent new product development, for example, communication problems. Many studies stress the importance of information sharing for the management of an overlapping product development process (e.g., Clark and Fujimoto 1991, Wheelwright and Clark 1992).

Smith and Reinertsen (1998) discussed the difference in information transfer between projects with and without overlapping activities. In projects with no overlapping activities, the first activity accumulates information about a topic until this information is almost complete, after which it is transferred to the next activity. The second activity does not start until the first one has been completed. However, when activities overlap, the second activity starts before the first has been completed, and partial information is transferred in small batches as it develops. Thus, the information transferred is not complete and, consequently, there is a need for communication between the sender and receiver of partial information in order to resolve any questions which may have arisen (Smith and Reinertsen 1998).

Information management is a difficult task in a CE context, and several models have been developed to support it (e.g., Eppinger et al. 1994, Krishnan et al. 1997, Yassine et al. 2008). Eppinger et al. (1994) used a matrix to capture both the sequence of and the technical relationships among the design tasks to be performed so as to organise these tasks in product development. Krishnan et al. (1997) presented a model-based framework, which identifies conditions where various types of overlapping are appropriate for a pair of coupled activities. Yassine et al. (2008) developed a dynamic programming model and analysed different situations that depend on the type of information exchanged; stationary versus dynamic information. Somewhat different aspects of information management are discussed in Hauptman and Hirji (1996), Clark and Fujimoto (1991) and Susman and Dean (1992), namely difficulties with release and use of information associated with attitudes. The study presented in Hauptman and Hirji (1996) reveals a reluctance to use incomplete and uncertain information as well as the difficulties encountered in attempting to do so. Clark and Fujimoto (1991) argued that since engineers tend to be perfectionists, they are often reluctant to release work that is incomplete. In addition, if design changes trigger accusations of laziness or incompetence, there will be even less willingness to release information early (Clark and Fujimoto 1991). Susman and Dean (1992) underlined the importance of sharing preliminary information, acting upon it, and considering decisions as preliminary until late in the project in order to increase problem solving flexibility during PDPs.

Terwiesch et al. (2002) brought to the fore the importance of understanding the fact that the nature of information changes if it is released earlier than previously. If activities are overlapping, one cannot expect to receive the same information as was received at a later stage when activities were performed sequentially. Terwiesch et al. (2002) provide a definition of preliminary information in the form of two characteristics; information precision and information stability. Information precision concerns accuracy, and measure
of precision is defined as a comparison between the range of communicated outcomes and the range of all possible outcomes (for discrete sets), or by comparing the range of communicated outcomes to the distance of the range from zero (for parameter intervals). Information stability is the likelihood that it will remain unchanged for the remainder of the process. Technically, an accurate measure of stability is only possible after potential changes have occurred, although the research presented in Terwiesch et al. (2002) suggested that stability can be estimated on the basis of beliefs formed by experience.

Terwiesch et al. (2002) suggested the following two alternative coordination strategies for exchanging preliminary information in CE; iterative coordination strategy and set-based coordination strategy. The iterative coordination strategy emphasises the need to communicate the information in a way that is very precise. Downstream activities can then proceed with operational information, but at the risk of having to iterate and redo part of the work should modifications occur. The set-based coordination strategy emphasises the need to communicate the information in an extremely stable way. Based on the information, resources can then be committed by downstream activities without running the risk of having to redo some or all of the work. However, since the precision of the information is in some cases too low, it may be impossible to continue downstream activities (i.e., starvation) or it may prove necessary to duplicate the work (i.e., redundant work). Terwiesch et al. (2002) recommended that an organisation should apply both coordination strategies within a single development project and choose one of them for each individual situation. This choice is driven by the cost of rework relative to the cost of duplication and starvation.

The information aspect of CE is also discussed in Oehlmann et al. (1997), where it is emphasised that CE increases the use of incomplete and potentially inconsistent information and also strongly influences the use of new information and communication technologies. Oehlmann et al. (1997) presented a methodology, which they termed formal interaction analysis, aimed at optimising the availability of information and in which the following quality dimensions of information are listed: completeness, reliability, accessibility, legal aspects, reusability, and compatibility. However, many other dimensions of information quality are presented in the literature. Lee et al. (2002) presented 15 dimensions of information quality that are empirically derived as important to information consumers. The information quality dimensions are: free-of-error, concise representation, completeness, consistent representation, appropriate amount, relevancy, understandability, interpretability, objectivity, timeliness, security, believability, accessibility, ease of operation, and reputation.

3. Methodology
The research presented in this paper is based on multiple sources of data, mainly gathered by means of three single qualitative case studies (case studies A, B and C) conducted at two companies from the automotive industry; two studies at an end producer (Company 1) and one study at a first tier supplier (Company 2). The case studies and data collection are described in more detail in the next section. The research attempts to capture a rather wide and in some respects new problem area. Single case studies made it possible to investigate MSS design in detail, parts of it in real time, as well as the interplay between those designing the MSS and the other actors involved in a PDP. Since companies seldom have formal processes, routines or methods for MSS design, it is essential that
detailed questions are verbally explained during interviews so as to ensure that they have been correctly understood by the interviewee.

The case studies were conducted at companies in the automotive industry. Much that has been written on PDPs and CE has built on automotive industry research. The automotive industry is a natural candidate for research on CE, since its PDPs combine novelty with complexity and CE is widely used (Terwiesch et al. 2002). The criteria for selecting the two companies for the three main studies were to a large extent their interest in the research area, the fact that they employed a CE approach and tried to shorten product development times and thus overlapped product development activities, that they recognised the importance of integrating MSS design during PDPs. Finally, they placed a high value on the performance of the MSS as a means of preventing production disturbances.

The companies’ interest in the research area of MSS design during PDPs was most likely related to their situation. The competition in the automotive industry is intense and product life cycles have shortened dramatically over recent decades. However, this also applies to other industries such as the computer sector. What makes the automotive industry especially interesting for this research area is the complex flows of physically large components and products. The selection of an end producer for the first case studies was natural, since in the automotive industry, the products, and thereby the PDPs and MSSs, become more complex and require more resources further down the supply chain, which makes them interesting to study. The difficulties encountered during the MSS design at the end producer should cover a large spectrum due to the complexity involved. Nevertheless, by continuing the research with a case study at a first tier system supplier, the context could be further broadened by incorporating the supplier perspective.

This paper does not report the results from each study separately but the results presented in this paper are a further analysis of the results gained through the studies conducted. Results from the case studies are presented in Johansson and Medbo (2004), Johansson and Johansson (2004), and Johansson et al. (2006). Johansson and Medbo (2004) described the use of product data and information systems in the design of an MSS in a PDP. This description is further structured in Johansson and Johansson (2004) by means of information quality dimensions and improved by the addition of an increased amount of empirical data. Johansson and Johansson (2004) also discussed how PDM systems can improve information quality. In Johansson et al. (2006) the focus was broadened to incorporate sourcing, production, and market data as well as product data, and the paper also discussed how preliminary data can be used in the MSS design process.

In those papers, difficulties related to release and use of information for MSS design during PDPs are described and specific approaches to deal with the difficulties are discussed. However, the focuses of the papers differ, two of the papers focus only on product data, and all approaches discussed in the papers are not explicitly connected to specific difficulties in a structured manner. Moreover, the research presented in this and the earlier papers aim at integrating the MSS design at an early stage of PDPs and designing the MSS in parallel with the product and the production system. Interestingly, however, is that many of the difficulties found associated with the release and use of information are not directly related to a CE context. The difficulties are more generally related to MSS design during PDPs, irrespective of whether a CE approach is applied or the MSS design is carried out as a final step after the design of the product and the production system. In the further analysis of the empirical data presented in the present
paper, the difficulties described in the earlier papers are thus analysed and categorised in terms of whether or not they are related to a CE context. The approaches to deal with the difficulties discussed in the earlier papers are analysed here and categorised with regard to whether or not they focus on difficulties related to a CE context, and whether or not they focus on the MSS designers and their work. This further analysis and categorisation will provide a thorough and coherent description. The understanding and application of the approaches when dealing with difficulties will thereby be enhanced.

4. Case studies

4.1 Case study A

During case study A, the MSS design in PDPs at Company 1 was studied by investigating which departments, or roles, were involved, which issues were dealt with and what difficulties were encountered in the design of the MSS. The case study concentrated on the design of the MSS for one of the company’s assembly plants, where the products were assembled on a single, paced mix-model line. Next to the assembly area was a large storage area with an automatic storage and retrieval system. The focus of the study was on the external material flows from the suppliers to the assembly plant and the internal material flows to the assembly stations. The materials supply involved large and complex flows of materials from many suppliers, which required a great deal of resources in terms of manpower, equipment, and space.

Data collection was performed over a five-month period from multiple sources, including interviews, various internal company documents and direct observations at relevant meetings. The interviews were the main data collection method. The documents and direct observations were used to verify the content of the interviews and provide details of design issues dealt with by the MSS designers. The interviews were conducted with staff responsible for MSS design in PDPs. In total, 15 MSS designers were interviewed, 11 on one occasion and four on two occasions.

4.2 Case study B

Case study B investigated the use of product data and information systems in the MSS design during a PDP and was also conducted at Company 1. The chosen case concerned a common question in MSS design, namely whether or not to outsource a process for the sequencing of materials that need to be displayed in sequence at the assembly stations, including the decision regarding a suitable outsourcing partner. Such decisions influence many parts of the MSS besides the actual workstations for sequencing, for example, packaging design, external transportation, internal transportation, storage, and planning and control.

There were three MSS designers involved in the outsourcing decision process studied. They were interviewed separately on three occasions, and one of them was interviewed a fourth time in order to make the data collection complete. The time between the main interview occasions was about six months. A design engineer responsible for the development of the components studied was interviewed once. Data was also collected from several documents, which included calculations made for comparison purposes, and information systems. In addition, one meeting was attended at which the outsourcing alternatives were discussed by the MSS designers and the purchasers who dealt with the
suppliers involved. Between the second and the third round of interviews with the MSS designers the type of information systems used at the company for registering product data were examined.

4.3 Case study C
Case study C was conducted at Company 2 and studied large parts of the MSS design during a PDP in real time as well as the interplay between those designing the MSS and the other actors involved in the PDP. Case study C can be described as consisting of two parts. The first investigated requirements on an MSS design process to be used during PDPs. The second part dealt with the performance assessment of MSSs at an early stage of PDPs and how this could be carried out despite the fact that much of the input data was preliminary. The case study focused on one PDP, in which a new product was developed to replace an existing product in one specific car model. The material flows for the product involved repacking many components into smaller boxes before feeding them to the assembly stations, after which the final products were repacked before dispatch to a separate unit for sequencing. At the sequencing unit, the product was sequenced together with similar final products destined for different product models and variants at the customer’s plant.

The PDP was studied for a period of one year and the company was visited on average one day per week, with more frequent visits during the initial part of the study, about 50 days in total. Data was collected from multiple sources including interviews, information systems, various internal company documents, and direct observations of products, components, packaging, workstations, storage facilities, etc. as well as at relevant meetings. The interviews were conducted with people responsible for designing and operating the MSS as well as industrial engineers, purchasers, design engineers, and marketers. While some of the interviews were arranged in advance, many of them were informal in nature, for example in the form of a few questions after a meeting. The meetings attended were mainly project meetings, such as the weekly cross-functional project meetings and full day workshops concerning the design of the production system.

5. Results
The difficulties related to release and use of information for MSS design during PDPs and specific approaches to deal with the difficulties will now be described and categorised.

5.1 Difficulties with information management
As previously mentioned, although the research presented in this paper has a CE approach several of the difficulties found are not directly related to a CE context. The difficulties will now be categorised in terms of whether or not they are related to a CE context.

The difficulties found that are related to a CE context are mainly due to the fact that dependent activities are performed in parallel, which influences the completeness, timeliness, and interpretability of the information (the consequences of the difficulties to...
the information quality are described by means of the dimensions from Lee et al. (2002)). These difficulties are, for example:

- That the information required for an activity may not have been produced or is only preliminary, which influences the completeness of the information.
- That releasing and using preliminary information may not always be natural to everyone involved in a project. Thus, producers and users of information wait until it is final before they release and use it, which influences the timeliness.
- That preliminary information may change to a greater or lesser degree early or late in the projects. It is thus difficult to estimate to what extent preliminary information can be used for the design of the MSS, i.e., it is difficult to estimate the status of the information, which influences the interpretability.

The difficulties found that are more generally related to MSS design during PDPs are irrespective of whether dependent activities are performed in sequence or in parallel and concern accessibility, understandability, and relevancy. These difficulties are, for example:

- That the MSS designers do not know where to find the information required or who to ask for information, which influences the accessibility.
- That the information may not be available in any information system; thus the MSS designers have to trust personal communication in order to obtain it, which influences the accessibility. Personal communication is essential for dealing with outstanding questions etc., but if it is the only information source, there is a risk that the search for data becomes time-consuming and results in incomplete and even contradictory data.
- That even if the information is available in an information system, some information systems, such as CAD systems, are usually only used by design engineers, and MSS designers often find them impossible to use, due to lack of appropriate training. This influences the accessibility of the information.
- That the information required is of a kind that is a question of judgement and thus cannot be found in any document or information system, which influences the accessibility. Examples of this are whether or not a component is identifiable or liable to theft, which influences how the component should be displayed at a work station and how it should be stored.
- That much of the product data required for MSS design can be found in drawings. However, MSS designers often find the drawings very difficult to read and understand which influences the understandability of the information found in drawings. The result is that the information management process becomes very time consuming and some product data actually available in the drawings cannot be used.
- That the available information has been produced for another purpose and is thus not adapted to the MSS design, which influences the relevancy of the information. For example, it may be possible to find information regarding the surface material of the component, i.e., the material on the surface, in contact with the environment. However, it may be impossible for the MSS designers to determine how sensitive this material is, thereby making it difficult to decide how the component should be packed and handled.
• That the MSS designers may be unable to state what information they need, which influences the relevancy of the information they receive.

Considering the fact that the research had a CE focus, it is remarkable how obvious the difficulties were that are more generally related to MSS design during PDPs irrespective of whether a CE approach is applied or not. Moreover, it is important to bear in mind that the difficulties that are not directly related to a CE context nevertheless have to be dealt with in order to use a CE approach, as they will probably increase if the latter is applied, due to the uncertainty of preliminary information.

5.2 Approaches for improved information management

Several complementing approaches are required in order to deal with the difficulties related to the release and use of information described in the preceding section. The difficulties found that are related to a CE context concern the completeness, timeliness, and interpretability of the information. Completeness and timeliness involve that information is preliminary and thereby difficult to use but also that information is missing due to that it has not yet been produced or that the producer of the information has not yet released it. Three approaches can be used to deal with completeness and timeliness deficiencies: indicators, standards and scenarios.

Preliminary information can be used as an indicator of the final information when this is sufficient for the design process. One example is when preliminary product data is employed to determine type of packaging and quantity in each package. Even if the product data is slightly altered, type of packaging and quantity in each package may not be influenced at all or only to a minor extent.

When information is missing, standards can be used when the difference between the information required for the design process and the standards is likely to be negligible. One example is when transportation data for existing suppliers is used as standards for new suppliers located close to existing suppliers.

Scenarios can be used to take different alternatives into account for data that is crucial to the calculations but not decided or fixed. One example is when the suppliers have not yet been decided and there are several possible suppliers. Different scenarios will then reveal the outcome of the alternative paths.

Indicators and standards can be used when applying what Terwiesch et al. (2002) call an iterative coordination strategy since the information is very precise but modifications may occur. If modifications occur, iterations of the design work are necessary. When applying a set-based coordination strategy (Terwiesch et al. 2002), scenarios can be used to continue the design work, although redundant work is necessary since scenarios involve that several alternatives are used in the design work before the final decision has been taken regarding which alternative to use.

In order to improve the interpretability of the information, categorisation of data could be used. If the current status of the information is not provided, including indications of how much it may change, it will be less useful than if the MSS designer is in a position to determine to what extent the information can be used. In this case the producers of the information required for the MSS design have to assist by assessing and categorising the data so as to make clear to the user how preliminary the information is, i.e., inform the user of the information precision and information stability. This approach is also discussed in Terwiesch et al. (2002). In one company studied, the status of the data connected to
a component is registered as valid for: (1) component development; (2) tool development; (3) purchasing; and (4) production. This gives information about how much the product data may change and thereby for what type of decisions the data may be used.

The difficulties found that are more generally related to MSS design during PDPs concern accessibility, understandability, and relevancy. In order to improve the accessibility, it is important that the greatest possible amount of information required can be accessed from one information system. The information system used should be easily accessible for all parties concerned and adjusted in order to facilitate MSS designers’ work, e.g., with the help of interfaces adapted to meet their requirements. Users who are unfamiliar with CAD systems are able to view product designs and other related information with the help of viewing tools, for example, in PDM systems (product data management systems). The information systems should also support the registration of data categories discussed above. Moreover, by means of such information systems, preliminary information can be released at an early stage and the users concerned can be notified and retrieve the data, which can increase timeliness. In addition, the users can be notified about changes in the data. Information systems can thus also be used to deal with difficulties related to a CE context.

There is a major potential in improving information quality by means of suitable information systems. However, more is required than merely introducing an information system since they cannot perform any miracles with information that is irrelevant or difficult to understand. Instead, it is essential that MSS designers are able to specify what information they need and in what form, for example, how the data should be coded and presented. The competence of MSS designers has been touched upon when describing difficulties related to the release and use of information, for example, that some information systems are difficult for MSS designers to use, that drawings are difficult to read and understand, and that MSS designers may be unable to state what information they require. Education is a natural part of improving MSS designers’ qualifications as well as their ability to access models and tools to assist their work. It is also important that they are able to demonstrate that the information produced and delivered to them is useful for the PDP as a whole and not solely for MSS design. This could result in efforts to improve the quality of the information required for MSS design.

It can be concluded that categorisation of data as well as indicators, standards, and scenarios can assist in coping with difficulties related to a CE context, while improvement of MSS designers’ qualifications can be used to address the difficulties related to MSS design during PDPs, irrespective of whether a CE approach is applied. Information systems can be used to deal with difficulties whether related to a CE context or not.

The approaches can also be discussed in terms of whether or not they focus on the MSS designers and their work. Indicators, standards, and scenarios and improvement of MSS designers’ qualifications are approaches that focus on MSS designers and their work, while categorisation of data relates to the work of the information producer. Information systems are an approach that should be addressed at company level. Figure 1 summarises the categorisation.

Figure 1 supports the view that the responsibility for improving the information management in MSS design during PDPs does not solely rest with the MSS designers but they have to accept their part of the responsibility. However, those producing the information required for the MSS design as well as the company as a whole have to contribute.
6. Conclusions and discussion

In this paper, difficulties related to release and use of information for MSS design during PDPs and specific approaches for dealing with them were described and categorised so as to provide a thorough and coherent description, thereby improving understanding of the various approaches and facilitating their application. The difficulties were categorised in terms of whether or not they are related to a CE context. The approaches were categorised with regard to whether or not they focus on difficulties related to a CE context, and whether or not they focus on the MSS designers and their work.

The categorisations highlight the fact that several of the difficulties experienced by the MSS designers are not related to a CE context with overlapping activities but are more generally related to release and use of information between different departments. They also emphasise that the responsibility for improving information management rests with both the MSS designers and those who produce the information required for the MSS design as well as with the company as a whole. The MSS designers are in this paper regarded as the users of information. However, they are also producers of information used by other MSS designers or by other parties involved in a PDP, such as design engineers, industrial engineers, purchasers, and marketers, which means that they may have to, for example, categorise preliminary information in order to facilitate its use.

The approaches for dealing with the difficulties associated with release and use of information are: categorisation of data, indicators, standards, and scenarios, improvement of MSS designers’ qualifications, and information systems. These approaches complement each other. Thus, the choice is not which approach to select but rather where to start. Many companies today do not work concurrently with the MSS design during PDPs. In order to start integrating the MSS design at an early stage of PDPs, it may be wise to first address the non-CE related difficulties.

The present research complements the rapidly growing literature on CE by emphasising the importance of integrating MSS design at an early stage of PDPs so as to utilise the information produced and provide feedback. This integration not only ensures the performance of the MSS but also increases product development performance, due to the improved possibilities to influence product design, production systems design, and sourcing and market issues, thus avoiding sub-optimisation, the need to rework, and quality deficiencies.
The research has been carried out in collaboration with companies. While qualitative case studies with on-site observations provided the opportunity to discover new phenomena in MSS design during PDPs, they nevertheless raise the issue of generalisability. The research has concentrated on companies engaged in mass production within the manufacturing industry, developing relatively complex and assembled products and employing a CE approach in order to shorten product development times and increase quality and productivity. There is no reason to believe that the approaches to improving release and use of information are not applicable in other types of companies. It is also believed that several of the results presented in this paper can also be applied to the broader area of production systems design during PDPs due to the similarity between the two, for example, regarding status and qualifications of MSS designers and industrial engineers as well as the present lack of suitability of companies’ information systems for use during MSS and production systems design (Medbo 1999). The status of employees belonging to different functions was discussed in Susman and Dean (1992) where it is pointed out that design engineers have a higher status than industrial engineers. Without wishing to overstate this fact, MSS designers and industrial engineers work under the same conditions; a fact that has to be addressed during PDPs.

Further research and development is required in order to support the implementation of the approaches to deal with difficulties related to release and use of information. This research covers a broad area, from competence issues related to MSS designers to adjustment of information systems, and would benefit from interdisciplinary studies. In addition, research on work organisation, focusing on cross-functional teams and the MSS designers’ role and tasks in these teams, could be carried out in order to complement the research discussed in this paper and would contribute to optimising the use of information management approaches. It would also be interesting to further analyse the use of information systems versus personal communication during a PDP in order to support the release and use of information during PDPs. These aspects are also related to cross-functional teams, since such teams are implemented for the purpose of improving integration and communication.

References


Social Communication in Management and its Psychological and Marketing Aspects

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Abstract: This article reviews and provides a discourse of the issues connected to social communication as a managing tool, not only in psychosocial, but also in marketing. The studies are based on the analysis of literature and individual research. They include the following: communication and marketing relating to psychosocial, economic processes, methods of social influence exertion, means of social communication policy in marketing, Public Relations (PR) as an element of marketing, addressing universal areas of activities, aims and tasks of PR. Social communication is an important tool of management. It supports processes of taking decisions by organization management and facilitates meeting of the established objectives. It is also an indispensable element of marketing, in which the most commonly used means of social communication policy are: advertisement, promotion and PR. Marketing management theoreticians consider public relations as a management function of continuous and planned character leading to a sustainable position of the organization in the market and fulfilling its interests. It is possible by means of systematic research and analysis of firm opinion in the internal and external environment at the same time to apply such means of social communication which are adequate in order to gain and sustain a good reputation of the organization in the community. PR activities are performed as a strategic, planned and long-lasting policy of the company. As the researchers showed they are a vital element of the contemporary complex market. Social community (an indispensable instrument of the operational marketing) is a process of information flow among individuals, social groups or organizations. Among many most often applied means of social communication policy there are: advertisement, promotion, public relations, company’s image creation, direct and indirect selling. Social communication is an important element not only in the functioning of the society but also in market activities. The authors analyzed the most efficient methods, taking into consideration positive and negative effects of the activities connected to social communication. During advertising or promotional campaigns there is use made of scientific developments as sociology or social psychology. Social communication policy might stimulate demand for products, increase profits of a company or create new workplaces, leading to success. Specialists from this area make use of all means and generate demand having influence on emotions, needs or concerns through known methods of social influence exertion and symbolism of communication.

Keywords: social communication, management, marketing, public relations, psychosocial aspects

1. Communication and marketing as psychosocial and economic processes

Complexity of the contemporary world is expressed through co-existence and permeation of many complicated, economic processes. Probably two of the most crucial ones are: marketing and social communication. Marketing (an indispensable factor of management success) is an economic and social process, an integrated set of instruments and activities, linked to research and creation of the market, based on market rules of behavior. One of the components of operational marketing, which plays a specific role in the whole system, is public relations. This system is crucial in carrying out business.

Social communication (an indispensable part of marketing) is not a single undertaking but a process (Garbarski, Rutkowski, Wrzosek 1998; Kowal and Węgłowska-Rzepa 2002b) of information flow among individuals, social groups or organizations. Among many most often applied means of social communication policy there are: advertisement, promotion, public relations, company’s image creation, direct and indirect selling. Social communication is an important element not only in functioning of the society but also in market activities because in the process of communication the passed on information refers not only to situations and experience of individuals but also to social and economic aspects (for instance in political or business negotiations, in advertisement, promotion or building the image of the organization). In the efficient transfer of information, knowledge from such areas as psychology, sociology, philosophy, communication, as well as computer science or sociocybernetics, is often used. Professional communicators most commonly refer to interests, likings or emotions of their receivers, trying to appeal to needs and raise motivation to gain additional data and undertake any activity, implementing appropriate techniques of social influence exertion (cf. Cialdini 1996, Aronson 1998, Kowal 2000, 2002, Kowal and Węgłowska-Rzepa 2002-2008, point 6 of the current article).

The received information might include not only a word text with a defined content, but also pictures, drawings, photographs, films, symbolism and other signals described in the relevant literature, like
body language, including the following: the manner of hand shake, standing or sitting while speaking to interlocutor, seating hierarchy at the conference table, dress code or make-up style, etc.

Persons who get involved in the communication process should possess certain traits of character such as sympathy, openness, good communication skills, and they should also awaken trust, liking, respect or charisma (Kowal 2002). Such traits result from the application of different tools of social influence exertion, for instance: rules of reciprocation, involvement, consequence, liking and friendship, power of authority, inaccessibility of goods or services, difficulties in reaching the goal, which might be posed by an undefined subject (e.g. a physical person, a firm or political organization, cf. Cialdini 1996, Aronson 1998, Kowal 2002).

2. Means of social communication policy in marketing

Marketing according to Kotler (1984) and Otte (1991) is a social process in which individuals or social groups (including organizations) achieve what they desire through manufacturing products and exchanging them with other economic entities. Even though in theory there are many different conceptions, all of them concentrate on the issue of fulfilling the needs of a client and influencing exertion through means of social communication policy. A popular definition created by Meffert (1987) describes marketing as planning, coordinating and controlling the totality of business enterprise orientated to current and potential markets in order to provide society with goods Otte, though, defined marketing as directing activities of enterprises, institutions and other entities carrying out business activities towards clients and markets. Marketing enables repositioning from the ‘enterprise’ system to the ‘environment’ system, and generally the pursued aim of an enterprise is to maximize profits. These goals would stay out of reach if it was not for proper information channels and properly led policy of social communication.

Policy of social communication can stimulate demand for offered products, increase profits of companies, and create new workplaces. Thus, specialists from this area make use of all available means to generate demand, having influence on emotions, needs, moods or concerns (Funk, 1991) through known social psychology methods of social influence exertion (Cialdini 1996, Aronson 1998, Kowal 2000) and symbolism of communication (Kowal, Janda-Dębek, Kuczyńska 2001; Kowal, Węgowska-Rzepa 2002a, 2002b).

Based on scientific achievements in the field of communication and social cybernetics, policy of social communication is a method of communicating between a firm and clients’, competitors’ and co-operants’ environments. It can be personal or impersonal, direct or indirect, it might be executed consciously or subconsciously. Its original aim corresponds to interests of the company and effective creation of demand and having influence on clients in a way to create new needs in them which ultimately leads to production and selling of new products.

3. Deliberations over certain aspects of public relations

PR and social influence. While explaining the PR issues, it is often stressed how important the methods of social exertion in achieving the company’s goals are, for instance, through persuasive communication and appealing to hobbies, likings, emotions of addressees and undertaking certain actions like purchasing some goods, signing contracts or joining a political party (Cialdini 1996; Aronson 1998; Kowal 2000).

Marketing function of PR. In achieving goals of our company, one of the most important functions is a marketing function of PR which embraces recognizing needs and attitudes of society, requirements of the market and, on such basis, defining directions and socio-political activities. Policy of social communication plays a crucial role as it enables information flow, understanding and mutual acceptance between the organization and society. Without efficient communication the goals of PR cannot be achieved.

Dynamics and transformations of PR. It is important to pay attention to the fact that all aspects of PR can undergo certain transformations not only within frames of organization but also in the external environment, because of a dynamic development of communication techniques. This process was previously described by Rex Harlow in 1976 (cf. Wójcik 2001, p. 25-26). Nevertheless, PR is supposed to have influence on attitudes and create public opinion. Nowadays we live in an information society where access to the internet has become common practice, in which one of the components is electronic public relations (ePR).
Planning and continuity of PR activities. In presentation of PR issues, while taking into consideration results of systematic research of external and internal environment of the society, planning and continuity of activities are often stressed. PR activities in practice embrace continual passing of specifically prepared information, for instance by a company, in order to create the desired image of the organization enabling better integration between environment and realization of the company’s goals, such as achieving profits (Dereń 1999; Budzyński 1998).

PR activities and means of social communication policy. Activities of PR embrace publicity – media relations, creating a company’s positive image through publishing their own publicity material. In some cases it embraces some forms of advertisement concerning impressions of the whole enterprise, not only of offered products or services; creating corporate identity, sponsorship (financial support for sport, education or charity organizations, etc.), lobby groups (exercising influence by interest groups and individuals on the content of public decisions) or managing a crisis situation. Appropriately used means of political and social communication (thus, efficient PR activities) of the enterprise consequently lead to its adjustment to its environment, gaining public opinion or even creating civic support, convincing society (or its target environment) that the organization is worth its good reputation and can be trusted.

4. Universal areas of activities, aims and tasks of PR

Public relations might constitute a tool of activities for managing at every level in an organization’s hierarchy which was created in order to execute business, industrial, hospital, health or charity policy and local government, social, state or international activities (cf. Black 2003).

Among many various activities carried out in the field of PR in every aspect of civic life, the stress is put on realization of such activities as: counseling, forecasting direction of changes and its consequences, public opinion research, marketing research, creating policy of effective social communication, in particular effective communication gaining measurable results, promotion of widely understood products, creating identity and creating positive image of organization, sponsorship, lobbying, also conflict and misunderstanding prevention, improving and mastering of interpersonal relations within organization, creating of attractive employment conditions for personnel with high qualifications, popularization of mutual respect and social responsibility (cf. Black 2001; Kotler 1994; Dereń 1999; Cultip and others 1994, Kowal 1994).

5. Marketing roles and activities of PR

Among theoreticians (cf. Dereń 1999; Levin and Rosse 2001) of marketing there can often be encountered a widely held conviction about the strategic role of PR in achieving marketing goals, mainly in achieving higher awareness of receivers who get involved in the PR process. Specific PR activities in operational marketing embrace informing, exercising influence on consumers’, co-operators’ and competitors’ behavior, development of effective communication, facilitation of understanding, building not only trust but also a climate for accepting a product by a client, and support for advertising activities.

Other economists name a very specific role of PR in marketing (Philip Kotler 1994; Robert L. Dilenschneider 1998) embracing for instance: support for introducing new products into market, product improvement by awakening interest for specific product category, popularization of image refreshment of established brand names and changes in positioning of mature products, motivating of selling services, sanctioning and legitimization of advertising broadcasts, influencing certain target groups, defense of products which encounter social restraints, creating enterprise image favorable for its products, motivating of sales personnel and dealers, propagating cheap budget promotion. Among many other roles of PR, some theoreticians name also such tasks as: detection and use of sales bargains, influence on company’s attitude in contacts with the audience, influence in order to gain favor or good opinion of workers and members of organization, creating goodwill of share and stakeholders among whom organization is active (cf. Smektala, op. cit.).

A little more general list of marketing tasks, constituting the PR role in an organization, was presented by T. Smektala on the basis of a definition of PR according to Kotler and Lesly. He stressed the meaning of such PR activities as creating and maintaining an organization’s reputation, building and sustaining the acceptance of environment, influencing behavior and attitude of an organization and its environment, informing and educating the organization’s audience about its activities, supplying management with information about changes taking place in its environment, informing workers about...
activities, plans and situation of the organization, warning against and solving problems and crisis situations.

6. Psychosocial aspects of social communication

In the process of social communication in management there are various methods of social exertion used in order to realize established goals. The most effective, frequently used methods of social influence, their positive and negative psychosocial aspects, are presented below.

7. Methods of social exertion

Liking, fondness, friendship as tools of influence on others – people who are well educated and want to influence others understand that most often we agree to fulfill wishes of individuals that we know and like. This dependence is often used by specialized marketing companies during marketing exhibitions, by representatives of various political organizations during parties, meetings or spots in order to gain support from as many people as possible. During meetings there is use made of a wide range of influence tools such as: reciprocity, involvement and consistency, fondness and friendship, power of authority, inaccessibility of goods or services, difficulties in reaching the aim which is posed by a specific subject (physical person, firm or organization).

Many companies functioning on the basis of network marketing organize sales on displays which take place in private households, among acquaintances, most preferably among married couples or good friends where the organizer’s role is played by a well known and liked host.

Who do we like and what for? We tend to like people for nice and aesthetic appearance, physical and sexual attractiveness, for their positive opinion about ourselves. We like those who are willing to cooperate with us on frequent and loyal terms as it seems that contact with us gives them a lot of pleasure. Undoubtedly such people have influence on our decisions, which is a fact well known to those who wish to make use of such marketing activities (Kowal 2002).

Reciprocity – according to this norm we should always return good for good. Researches show that excessive amount of benefits which were not paid back leads to such emotions as hostility or hatred towards the benefactor. During marketing parties there are often games with awards and consolation prizes as in future we want to pay back for presents, so naturally we buy these products. Also, when we are invited to a meeting of people belonging to some political party - there is high likelihood that we soon become members of this party as a result of gratitude.

Involvement and consistency – participants of marketing or political meetings are encouraged to describe advantages of some products which they already possess, or justify reasons for entering into an organization. In this way, they strengthen their conviction of right behavior and act consequently in favor of the person who invited them into this procedure.

Social proof for legitimacy - most people believe that certain behavior (or way of thinking) is right when they see others act or think in this manner. Many companies make use of this rule – it can be observed in the example of advertisements of insurance companies whose representatives assure watchers that thousands of people have already bought their policy and they can be certain of their future prospects.

Power of authority – most people ‘follow the one who knows’ (Virgil); they are obedient towards persons perceived as father figures in moral or scientific categories. What is more, most people are more willing to follow them in their behavior – this is why advertisements with endorsement by well paid celebrities are so effective. It is surprising that these apparent authorities do not have to be genuine experts, nevertheless people become more vulnerable or gullible and react thoughtlessly, influenced by these symbols of authority. Such symbols may take the form of job titles (professor, doctor), nationally known figures (sportsmen or women), clothes (doctor’s uniform, spaceman outfit), vehicles or positions (CEO of company…) etc.

Inaccessibility – many subjects use spin as a propaganda achieved through, in the first step, intensive advertisement of some product. Later, there is a short series of some article introduced to the market, the product is then withdrawn and this process is accompanied with a restarted advertisement. Consumers are invited to get involved in a purchase in the moment when the product seems to be the most desirable as it is inaccessible. Many people fall for this practice and buy
products even though originally they did not need them. The same mechanism can be easily transmitted to membership of various organizations, to the choice of training companies in a non-public sector, etc.

**Conditioning and associations** – psychological knowledge about conditioning with stimuli allows for having influence on society with various media. It seems that the goal of many marketing activities, including actions connected to social communication policy, among many connected to advertisement, is to associate a company’s product with a psychophysical well-being – consumers ‘buy what they desire’ but in fact they buy what the advertisement producer wanted them to buy. Hence, lots of researches were devoted to, for instance, the influence of colors or accompanying props on assessment of offered products covering aesthetic, emotional, social, quality, usable or motivational aspects.

**Symbols in advertisement.** Behavior and attitudes of people are to a huge extent determined by the culture in which they are brought up. Culture might be here understood to be an overall material and spiritual property of human kind (Sobol 1993) which is constituted by language, religion, law, knowledge, scientific achievements, politics, art, mode, nutrition, technologies or entertainment industry. Through all those fields culture influences creation of values, attitudes, needs and style of behavior. It not only defines methods of perception and understanding of phenomena in environment but also creates the world through conveying meaning. Meanings are included in cultural rules, in convictions, norms and myths, symbols and rituals (Filipiak 1996).

There are several types of culture: elite culture, popular culture, national culture, folk culture, youth culture (Tse and Wehrung, p.81-95). In terms of cross-cultural and analytical psychology, there is a notion of archetypical symbolism. In sociology and anthropology symbols are treated as something characteristic for masses or groups of people, for institutions or types of institutions. According to Jung (Read and Fordham 1953-1979), symbol is the best expression of something unknown, it is ambiguous. Every psychological expression is a symbol if we assume that it states or means something more than it is and what is beyond our knowledge.

Archetypes and symbols are present not only in historical material, they can be encountered also in present times, in mental lives of people, they accompany many psychological processes (in cognitive processes, in dreams, in imaginations, in human output) creating human fate, influencing people’s choices and decisions. Archetypes are thus, a basis for creation of human future. Archetypal material has, together with compensational and integration functions, also a prospective function, in which subconscious content and intuition are used.

Various kinds of symbols are often used in advertisements as they can strongly influence receivers. This process can be analyzed in the aspect of so called depth psychology (Jung 1981, Kowal and Węglowska-Rzepa 2002 - 2009). The characteristic property of a symbol is its ambiguity. Because of ambiguity men can understand the specific meaning hidden behind a symbol which might be linked with experience in a characteristic way. Also, symbols can be interpreted on a more universal level, depicting experience of human kind written in evolution and history. Symbols often used in connection with methods of social exertion are very effective but such practice creates questions about ethical issues.

Roots of universal symbols can be tracked to basic instincts and first experience of human beings described by Jung (1981) as an archetype. Archetype is an original, structural image of human psyche. It can be also a system of preparedness for action, inherited possibilities of idea but at the same time images and emotions. They are inherited within the structure of cerebral cortex and in fact constitute a mental aspect of the human brain. They are common for everyone, rather than individual properties as they appear on a common basis. Their content and meaning is passed on from generation to generation in the form of myths, stories, rituals, beliefs and pieces of art. In this way symbols create a universal human language allowing for international communication.

Basic archetypes distinguished by Jung are: the Shadow, the Anima, the Animus, the Great Mother, the Wise Old Man and the Self. All of them include different content and can be referred to various aspects of human psyche.
The Shadow represents all unaccepted aspects of our own psyche (individual shadow) or it shows the dark, fallen and destructive side of humanity (collective shadow). Symbolic personifications of the Shadow are: the beggar, the witch, the werewolf, the drug addict, the alcoholic, the dragon, the monster, the Satan, the death, the hell and the war. The Shadow embraces also positive aspects. While confronting the Shadow it is possible to encounter such traits as wisdom or knowledge which can be used in war with our weaknesses. But the Shadow archetype symbols are rarely used in advertisement. It is the result of the fact that they release negative emotions like aggression and associations which may discourage consumers from purchasing goods. However, music industry and youth subcultures often reach for them in order to stress their autonomy and independence.

More often we can encounter symbols of the Anima or the Animus in advertisement.

Archetype of the Anima is where vision of a woman is depicted in men’s psyche. Thanks to this process there is a possibility of intuitive understanding between a man and a woman and finding their opposites in reality. The Anima archetype has both positive and negative aspects. In positive aspect the Anima may appear as lovers or seducers or they take roles of princesses or king’s daughters. In the negative aspect the Anima is represented by vamps or promiscuous women. The most known symbolic Anima persons are: Aphrodite, Helen of Troy or Beatrice. They are beautiful, full of inner warmth, but on the other hand, they can be characterized as changeable, stubborn or prone to intriguing and manipulations.

It is worth paying attention to the fact that one of the most effective advertisements is of a household in which women’s attributes are promoted by men. For instance, cleaning powders or washing-up liquids are better sold when they were advertised by a male host. It is to certain to extend the expression of the Anima in a men.

The Animus is a complementation of a female part with male elements in her consciousness. It allows for intuitive understanding and relative independence in relations to men. Symbolic representatives of the Animus are: the lover, the idol, the hero, the winner or the young god. The widely known personifications of the Animus are: Hermes, Apollo, Hercules, Alexander the Great, Romeo, but it can also be a Child. In the world of advertisement ‘children scheme’ (Doliński, 1998) is very often overused. Symbols of the Anima and the Animus are most often used at the stage of a launch of such products as cosmetics, apparel, cars, telecommunication equipment or some drinks. During this process virtues of independence, difference, nonconformity, beauty or healthy lifestyle are emphasized.

The Great Mother archetype is an image of a mother and motherly attitude. It appears as a goddess, mature woman, parent or mother nature. As an archetype it expresses universal law of life and death. Typical for this archetype are ecological movements, vegetarianism, great goddess cult, matriarchy. In positive aspect, the Great Mother represents such traits as protectiveness, liveliness, sensitivity and goodness. In negative aspect – traits connected to dominance, destruction or death, also with witchcraft and magic. Symbols referring to the Great Mother can be encountered in many advertisements of insurance companies, food products, household equipment and in architecture. In those examples the notions of safety, care, comfort, health, thrift, economy and stability are emphasized.

The Old Wise Man is an archetype of a soul and wisdom of culture. It is symbolized by: prophet, wise-man, clairvoyant, lord spiritual, guru, therapist, healer, magician, wizard and king. It represents such traits as maturity, sense, ability to do miracles or knowledge of dark arts. Negative aspects of this archetype are: conceit, vanity, overconfidence or abuse of power.

A person of the Old Wise Man often appears in advertisements of pharmaceutical products and medicinal herbs, medical equipment and services connected to them. Sometimes it can be encountered in food or insurance companies’ advertisements.

The Self is a symbol of perfection and completeness, image of the human as a whole in psyche and spiritual sense, it is frequently identified with God. The Self consolidates different contradictory aspects of psychological life of humans. Artistic and symbolic depiction of the Self are mandalas, motives of circles, quadrangle, number 4, image of paradise and heaven. Psychological traits symbolizing the Self are: possession of inner harmony, tranquility, peacefulness, sense of purpose, ability to look inside and understanding situations, tolerance and high morale. Elements of the Self
can be encountered in social advertisement, very often of integration, cross-cultural or religious value. Sometimes symbols of the Self appear in advertisement connected to health and beauty.

The traits emphasized in such advertisements are: unity, harmony, coexistence despite differences.

Despite all constructive values carried by the above-mentioned activities, it is impossible not to mention some negative consequences of social communication policy concerning more ethical or personal, rather than economical, aspects which lead to the creation of a consumer society. This fact was first pointed out in 1947 by Fromm in the book called ‘Man for Himself’, and later by Funk (1991) during formulation of marketing character syndrome. The topic of constant influence on our attitudes, forcing changes of decisions and necessity of making decisions was also mentioned by Aronson (1998) and Cialdini (1996).

8. Marketing character syndrome – a few characteristic features

Funk (1991 cf. Kowal 2002) presented in an interesting manner the relation between social and economic needs of society and their reflection in properties of dominating characterological sense of direction in highly industrialized countries. Based on Fromm's ideas, he defined a syndrome of marketing character embracing such features as conformity, flexibility, mobility, autonomy through individualism, frigidity caused by loss of emotionality, egoism through commercializing.

Conformity – trait of character in which one passionately endeavors to adjust always and everywhere. According to Fromm and Funk, this trait is a result of a necessity to adapt to the market situation. A man is true to himself, to his individuality and beliefs but at the same time tries to adapt to expectations of environment – ‘market’.

Flexibility – it is also a trait which is not positively assessed by Fromm. In economic sense – flexibility is a necessity for a business entity to be active in the market; managers must be flexible in order to adjust products of their company to changing demand. As trait of character in extreme cases it may lead to ‘big variability of attitudes’, to ‘(…) emptiness filled with desired values (…) easy to be exchanged’ (Funk 1991).

Mobility – this economic trait referring to easy movement of capital, product, employees in company might be transformed in negative meaning onto the human personality. As a result such values as loyalty to the ideals, work for the home country, patrimony, inheritance, work for the society or loyalty might become archaic relics of the past.

Autonomy through individualism – one of the traits of character of the modern man who is made to act in market conditions might become the need for autonomy (individualism), independence, emotional coldness and superficiality of interpersonal relationships (From 1994).

Frigidity caused by loss of emotionality – it is expressed in suppression, denial, crushing feelings, manifested in frigidity (Funk 1991). For the person with mercantile character feelings, attachment might be an obstacle in reaching aims. Funk mentions some important consequences of suppression:

The first one is avoiding certain experiences and expressing some feelings which influence experiencing of other emotions, for instance ‘contentedness and satisfaction about work, enthusiasm, feeling of complacency and happiness’.

Then we can distinguish rationalization – a mercantile person, while avoiding certain feelings, justifies such attitude giving strange, endless arguments.

The third consequence of suppression is development of pseudo emotionality and fake feelings, thinking only about emotions, empty sentimentalism.

The last consequence is somatism – returning of dysfunctional symptoms ‘in which suppression and avoiding of emotions is expressed in the form of bodily disorders’ whereas denial of affections and its disconnection lead to psychosomatic illnesses. In such a case physical symptoms are left disconnected, for instance heart disease or asthma, and it is far more complicated to treat them in a psychotherapeutical way.
**Egoism through commercializing** – Funk deliberated over egoism understood as a marketing strategy which may give ‘specific feeling of happiness’ to the person with the mentioned traits of character; it helps him/her to believe that he/she is interesting. External features like apparel or behavior decide about ‘market success’. But it is also influenced by such features like: education, scientific degrees, positions, achievements, knowledge of foreign languages, original ideas or interesting lifestyle. Everybody tries to do his/her best in order to achieve success (Funk 1991, Kowal 2002).

**9. Summary**

Social communication, especially its component part of public relations, is connected to management, communication processes among organizations, individuals, or social groups. While carrying out business activities these participants are concerned with gaining approval from various social groups which is one of the most important factors in business.

PR is a field of management which ensures that a company has a positive image in its environment, for instance, among many other factors, thanks to cooperation with media. Enterprises appreciate more and more the role of communication and its power to be used in contacts internally – in the organization and externally - with environment. In reference to this fact, they commonly communicate with the environment using mass media as they are a trustworthy means of communication. The biggest power of influence and the most effective means of passing the information in terms of PR is television, press and internet because of their mass character. Means of mass media allow PR services to affect every group in their environment. As a result of favorable information a good opinion about an organization is created among its members, stakeholders, clients, dealers or societies, among which this organization is active.

Man as a social creature undergoes processes of being influenced by other humans. Various subjects try to persuade us to change our manner of acting, attitudes, way of reasoning or shifts in taking decisions in order to gain not only profits but also for the sake of their own purposes. They force us to act according to their intentions, to adapt not only to expectations of a product or service market but also to requirements of ‘personality market’. On one hand we are supposed to purchase what market offers us, on the other we can present our skills and abilities which might be in the end a positive result.

Nevertheless, there appears a question about ethical aspects of social communication, in particular concerning advertisement of symbol groups in connection with methods of social exertion, such as reciprocity rule, arousing involvement, consistency, friendship or liking, social proof for legitimacy rule, inaccessibility of some goods or services rule, conditioning rule or power of authority.

The answer is ambiguous. From a social and economic point of view, if the sale of goods or services is increased as a consequence of advertisement, there are new workplaces created, the overall situation is improved, then implementation of effective advertisements is constructive and might be understood as ethical. Knowledge of social reaction to some symbol groups might be used in an ethical manner, for the goodwill of society. For instance, advertisement can be motivating in activation or integration of some social groups (unemployed, minority groups, disabled people, women raising children in social houses for lonely mothers with syndrome of learned helplessness), they can arouse willingness to study, take part in training, enhancing qualifications or better involvement in improving quality of life.

Unethical aspect of applied group of mentioned symbols takes part in creation of consumption attitude and bigger dominance of so called mercantile character. Syndrome of the above mentioned orientation is expressed through conformism, excessive flexibility and mobility, frigidness caused by loss of emotions, or egoism through commercialization.

To sum it up optimistically, it is worth stating, that influence of advertisement does not always have to be negative and not everyone is subject to it. It often appears that we can resist influence of advertisement with the use of a stable system of moral conduct, or by gaining knowledge and experience.

**References**

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NEW APPROACHES OF THE CONCEPTS OF HUMAN RESOURCES, HUMAN RESOURCE MANAGEMENT AND STRATEGIC HUMAN RESOURCE MANAGEMENT

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Abstract: This paper presents the most representative approaches to concepts of human resources, human resource management and strategic human resource management in the last two decades, based on purely theoretical analysis of the concepts mentioned above. The purpose of this paper is to demonstrate through a critical analysis of concepts, that in this era of change and uncertainty, attention to human resources of an organization has changed radically. It can be seen by analyzing the definitions, evolving concepts of human resources, human resource management, strategic human resource management over time. Analyzing the authors approaches regarding the concept of “human resource” it is observed that is no longer assign the term “cost element”, present authors define it as a strategic component of organizations.

In turn, human resources management has evolved considerably. The period during which the department deals with purely administrative activities, preparing various documents, payroll is no longer valid. Note, by analyzing the literature, a strategic approach to human resource management, focusing on strategic human resource planning, selective recruitment and selection, training, motivation of employees, involving them in decision making, teamwork, reward performance based, creating a working environment, with particular emphasis on organizational climate.

Organizations have realized the role of human resources, human resources management in the survival and development. Through this article we want to conclude that at the moment it is absolutely necessary strategic approach to human resource management to allow straightening organization to obtain a competitive advantage over other competitors in the field.

Competitive advantage has a critical role in the survival of organizations and is managed by Human Resources Management. This may be reflected in better financial performance (higher sales, increased profit), but also by non-financial performance (organizational reputation with customers and potential employees).

M. Porter highlights the important role of human resources within an organization, considering that in any business there are potential sources for obtaining competitive advantage. It comes from the ability of firms to master better than its rivals competitive forces. Any subdivision organizational structure and any employee of the organization, no matter how far away lies the strategy development process, contributing to gaining and maintaining competitive advantage.

Keyword: human resources, human resource management, strategic human resource management, competitive advantage

JEL classification: J24, M10, M12

Introduction
Nowadays there are many more risks and uncertainties than at any other time in the past, as a result of disruptive innovations and unexpected shocks coming. This is the new normal, an era of constant turmoil and chaos increased. (Kotler & Caslione, 2009)
This new normal led strategic behavior among new managers to minimize vulnerabilities and help them exploit the opportunities in the new normal. Organizations often arrive at certain strategic points of inflection, when the old strategy does not give the desired results and should be quickly replaced with a new one.

In terms of data security can guarantee the success of any business that extensively cultivated or not, can be the most powerful obstacle to success. (Roger Martin, 2010)

Period in which managers and other decision makers in organizations were focused and gave a critical role only tangible assets, quantifiable, and financial resources, has long faded.

In this "new era" was aware of the importance of human resources within an organization, human resource management role evolved considerably in recent years. Now, managers talk about the importance of "human" in the success of the organization, often using the term "human capital".

I noticed, looking at the literature, that this change in business mentality has occurred since the 1990s, significantly increasing the role of human resources with the advent of the "new economy" (Porter, 1998).

"New economy" has culminated in the development of important innovations, the most significant being computers and the Internet. Is the period in which they arise and develop emerging industry sectors like IT information technology, telecommunications, financial institutions.

There is a similarity between the two periods, the "new economy" and the present, in terms of innovation. At present, the most reliable source to obtain competitive advantage by organizations is innovation.

A awareness the importance of human resources in the organization, which proved to be vital, and currently occurred.

Now, investment in human resources is seen as a strategic approach to be constantly optimized and not as an element of costs to be minimized and kept as low a level.

Practice has proved what sets professionals in their work, namely that the success of an organization lies in its people. Organization's objectives can be met only if it has the necessary human resources and competencies, as required in this respect a rigorous strategic planning of human resources requirements. This process can be considered but a challenge for HR managers under this era of change, because "what was the future a year ago is now gone." (Roger Martin)

It is not difficult to formulate objectives for an organization; much more difficult it is to establish and to personally ensure that these objectives are realistic. (Mathis, R., Nica, P., Rusu, C., 1997)

In the same vein, J. Naisbitt and P. Aberdene (1985) states: ".... human capital has replaced dollar capital as a strategic resource".

2. Human Resource Management

Currently there are different concepts and approaches of modern human resource management in organizations.

In this paper I want to present some recent approaches of the concept, which I discovered by reading various books in the field. I want to conclude with a critical analysis, referring me to the similarities and differences between them.
Boselie (2010) addressed human resource management by focusing on sharing relationship that exists between employees and the organization. Thus, in his view, work report includes four types of contracts:

- **Contract law** - usually encompasses stipulated in a contract establishes the rights and obligations that arise between employees and the organization (e.g., number of holidays, terms and conditions relating to confidentiality)
- **Economic and trade agreement** (employer and employee determine employee work effort, reflected in the number of working days and how much the employer pays for the submission of this work, within salary)
- **Psychological contract** (contains all those elements that are not directly stated but are expected by the two actors - the employee and the organization. Example, employees are willing to invest additional time in a project because it can promote them in next.)
- **Sociological contract** (relations and networks that employees have with the organization - e.g., teamwork)

In another approach, consider that "Human resources management operates in an environment where there is a continuous tension between value added and moral values." (Paauwe, 2004).

Paauwe defined as value added economic dimension of work organization, the role that HR plays in creating economic value and increase financial performance in an organization.

Moral values reflect the notion of employees in terms of human beings with feelings, emotions, opinions, norms and values.

A study of Paauwe and Boselie in 2004 concluded that:

- Human resources are more than just "resources";
- Human resource management is focused not only on getting financial performance;
- Human resource management is focused on transfer relationship between employees and the organization;
- Employee relations gained importance in an era of continuous tension between adding value and moral values.

In his acceptance Boxall and Purcell (2003):

- Human resource management refers to all labor groups, including employees basic peripheral employees and contingent workers;
- Human resources management involves line managers and specialist staff is not only;
- Human resource management managing work and people, both collectively and individually;
- Human resource management is incorporated both in industry and society.

Legge (1995) distinguish between human resource management focused on achieving material results (HR hard) and one who is interested in the creation of conditions necessary to obtain these results (HR software).

So, Legge's opinion there:

- **Human Resources Management "hard"** - focused on economic outcomes (dominant in organizations)
- **Human resources management "soft"** - focused on the human side of work organization human resources
Several authors in the literature have made reference to human resource management featuring two models:

- The Anglo-Saxon or Anglo-American - focused on creating shareholder value, in terms of profit and market value, with little attention, if any, to other stakeholders
- The Rhineland - is focused on the interests of all stakeholders (not just shareholder) is given importance and interest of employees

Analyzing approaches to human resources management concept presented above, it is easily seen that all authors wanted to reveal the crucial role that human resources department within an organization is. The purpose of this department is not only to achieve by harnessing the potential of human resources, material and financial results as large, but to create an environment for their fulfillment.

Therefore, human resource management is to shape people and their activities so as to achieve maximum performance. Purpose of human resource management activities is to make employees want their organization as well as organization make employees want, so the organization to achieve its goals.

As mentioned Novac E. (2008), "Human resource management is one that provides a systematic check on a set of interrelated processes affecting and involving all members of an organization, processes that include human resource planning, recruitment, selection and evaluation employee training and human resources development, motivating and rewarding employees."


Strategic Human Resource Management has developed rapidly in recent years, especially because of the impact that human resources have had on the competitiveness of organizations. (Lefter, Marincas, Puia, 2007)

So there was an awareness that, at present, an organization cannot survive or develop without obtaining a competitive advantage over other competitors.

Manageability instrumental in obtaining the competitive advantage it has human resource management.

The fundamental objective of strategic human resource management is to generate strategic capability to ensure that the organization has highly qualified, highly motivated employees to achieve competitive advantage. (Popescu, Marincas, Puia, 2007)

According to Lefter, Marincas, Puia (2007), Strategic Human Resource Management must take into account several aspects:

- Predictions about the economic progress of the industry in which the company operates and customers
- Position competitors (technology they use, sale price, market share)
- Policy selling short, medium and long
- The uncertain evolution of sales
- Investment Policy and technologies to be implemented in future
- Production policy that will take the company into the future
- Consequences of certain factors that contribute to the emergence of new qualifications and changes in work organization management or planning

Strategic human resource management involves a collection of practices, programs and policies that facilitate the strategic objectives of the organization (Mello, J., A., 2006). It proved, however, that there is the best way to lead people, human
resources practices vary from one organization to another. In any organization, however, the essential condition for success is that human resource management system to support and sustain a clear mission and strategy.

Is focused on aligning human resources management at general business strategy, creating high-performance work systems and adding value through better management of people so that they sustain competitive advantage. (Delery & Doty, 1996)

In conclusion, strategic approach to human resources management is very much focused in the moment, manageability human effort to obtain competitive advantage.

4. Conclusions
Under current conditions, the authors of the literature finds it necessary heavy a strategic approach to human resource management, which means abandoning old thinking and practices and focus more on strategic than operational side of the organization.

In the authors opinion, the focus should be on transforming human resources function a priority for the organization. It is very important to integrate all human resources policies and programs in the organization's overall strategy.

Therefore, businesses need a strategic approach to human resource management, human resource strategy must be integrated into the overall strategy of the organization.

This requires a certain degree, that those in charge of the organization to learn more about HR issues and activities and human resources managers to acquire some knowledge about economic transactions, business contracts, the company's products, market outlets, financial situation of the organization.

In strategic human resource management, human resources department plays a key role and has a strong influence in strategic decisions at the organizational level.

In our opinion, human resource management at the micro level (HR policies and practices) is necessary but not sufficient for organizations to gain a competitive advantage, especially sustainable. To face competition from others, organizations should move to a strategic approach to human resource management.

Success or failure of an organization probably not entirely due to his practice of strategic human resource management, but these practices are likely to be critical.

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2013 Course Schedule
(Additional classes can be found on our website)

2010 INCOTERMS New Rules Seminar *ADVANCED CLASS*
November 13, San Diego, CA *1:00pm-5:00pm*
January 16, Orlando, FL *9:00 am-1:00pm*
January 20, Charlotte, NC *9:00 am-1:00pm*
March 10, Woodbridge, NJ *9:00 am-1:00pm*

Advanced Import/Export Operations, Documentation & Compliance Management Class
January 22-23, Charlotte, NC
February 3-4, Irvine, CA

Basic Import/Export
November 14-15, San Diego, CA
March 11-12, Woodbridge, NJ

C-TPAT Security & Threat Awareness Training Workshop
November 13, San Diego, CA *8:30 am-12:30 pm*
January 14, Orlando, FL
January 21, Charlotte, NC
February 5, Irvine, CA

Customs Trade Partnership Against Terrorism “Best Practice” Evidence of Implementation Re-Validation Preparation Workshop
January 13, Orlando, FL

Drawback Workshop
December 12, Ft. Lauderdale, FL
February 5, Irvine, CA
March 20, Woodbridge, NJ

Free Trade Agreements
March 13, Woodbridge, NJ *9:00 am-1:00pm*

Internal Compliance Audits and ISA Preparation and Readiness Seminar
December 5, Woodbridge, NJ
March 14, Woodbridge, NJ

Managing Harmonized Tariff Schedule
February 6, Irvine, CA *9:00 am-1:00 pm*
March 21, Woodbridge, NJ *9:00 am-1:00 pm*

Harmonized Tariff Schedule Workshop—Part 2—Electronics—Import Regulations and Tariff Classification
February 6, Irvine, CA *1:00 pm-5:00 pm*

Harmonized Tariff Schedule Workshop—Part 2—Pharmaceuticals—Import Regulations and Tariff Classification
March 21, Woodbridge, NJ *1:00 pm-5:00 pm*

Trusted Trader—Importer Self-Assessment Readiness Workshop
January 15, Orlando, FL

Professional Association of Import/Export Compliance Managers Workshop and Annual Meeting
June 4-5, Las Vegas, NV *WORKSHOP*
June 6, Las Vegas, NV *ANNUAL MEETING*
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It’s no secret that in many industries today, upstream activities—such as sourcing, production, and logistics—are being commoditized or outsourced, while downstream activities aimed at reducing customers’ costs and risks are emerging as the drivers of value creation and sources of competitive advantage. Consider a consumer’s purchase of a can of Coca-Cola. In a supermarket or warehouse club the consumer buys the drink as part of a 24-pack. The price is about 25 cents a can. The same consumer, finding herself in a park on a hot summer day, gladly pays two dollars for a chilled can of Coke sold at the point-of-thirst through a vending machine. That 700% price premium is attributable not to a better or different product but to a more convenient means of obtaining it. What the customer values is this: not having to remember to buy the 24-pack in advance, break out one can and find a place to store the rest, lug the can around all day, and figure out how to keep it chilled until she’s thirsty.
Downstream activities—such as delivering a product for specific consumption circumstances—are increasingly the reason customers choose one brand over another and provide the basis for customer loyalty. They also now account for a large share of companies’ costs. To put it simply, the center of gravity for most companies has tilted downstream.

Yet business strategy continues to be driven by the ghost of the Industrial Revolution, long after the factories that used to be the primary sources of competitive advantage have been shuttered and off-shored. Companies are still organized around their production and their products, success is measured in terms of units moved, and organizational hopes are pinned on product pipelines. Production-related activities are honed to maximize throughput, and managers who worship efficiency are promoted. Businesses know what it takes to make and move stuff. The problem is, so does everybody else.

The strategic question that drives business today is not “What else can we make?” but “What else can we do for our customers?” Customers and the market—not the factory or the product—now stand at the core of the business. This new center of gravity demands a rethink of some long-standing pillars of strategy: First, the sources and locus of competitive advantage now lie outside the firm, and advantage is accumulative—rather than eroding over time as competitors catch up, it grows with experience and knowledge. Second, the way you compete changes over time. Downstream, it’s no longer about having the better product: Your focus is on the needs of customers and your position relative to their purchase criteria. You have a say in how the market perceives your offering and whom you compete with. Third, the pace and evolution of markets are now driven by customers’ shifting purchase criteria rather than by improvements in products or technology.

Let’s consider more closely how companies can use downstream activities to upend traditional strategy.

**Must Competitive Advantage Be Internal to the Firm?**

In their quest for upstream competitive advantage, companies scramble to build unique assets or capabilities and then construct a wall to prevent them from leaking out to competitors. You can tell which of its activities a firm considers to be a source of competitive advantage by how well protected they are: If the company believes its edge lies in its production processes, then plant visits are strictly controlled. If it believes that R&D sets it apart, security around its research labs is airtight and armies of lawyers protect its patents. And if it prizes its talent, you’ll find hip work spaces for employees, gourmet lunches, yoga studios, nap nooks, sabbaticals, and flexible work hours.

Downstream competitive advantage, in contrast, resides outside the company—in the external linkages with customers, channel partners, and complementors. It is most often embedded in the processes for interacting with customers, in marketplace information, and in customer behavior.

A classic thought experiment in the world of branding is to ask what would happen to Coca-Cola’s ability to raise financing and launch operations anew if all its physical assets around the world were to mysteriously go up in flames one night. The answer, most reasonable businesspeople conclude, is that the setback would cost the company time, effort, and money—but Coca-Cola would have little difficulty raising the funds to get back on its feet. The brand would easily attract investors looking for future returns.

**On a hot day, consumers gladly pay a 700% price premium for the convenience of buying a cold can of soda from a vending machine.**
The second part of the experiment is to ask what might happen if, instead, 7 billion consumers around the world were to wake up one morning with partial amnesia, such that they could not remember the brand name Coca-Cola or any of its associations. Long-standing habits would be broken, and customers would no longer reach for a Coke when thirsty. In this scenario, most businesspeople agree that even though Coca-Cola’s physical assets remained intact, the company would find it difficult to scare up the funds to restart operations. It turns out that the loss of downstream competitive advantage—that is, consumers’ connection with the brand—would be a more severe blow than the loss of all upstream assets.

Establishing and nurturing linkages in the marketplace creates stickiness—that is, customers’ (or complementors’) unwillingness or inability to switch to a competitor when it offers equivalent or better value. Millions or billions of individual choices to remain loyal to a brand or a company add up to real competitive advantage.

Must You Listen to Your Customers?
A company is market-oriented, according to the technical definition, if it has mastered the art of listening to customers, understanding their needs, and developing products and services that meet those needs. Believing that this process yields competitive advantage, companies spend billions of dollars on focus groups, surveys, and social media. The “voice of the customer” reigns supreme, driving decisions related to products, prices, packaging, store placement, promotions, and positioning.

But the reality is that companies are increasingly finding success not by being responsive to customers’ stated preferences but by defining what customers are looking for and shaping their “criteria of purchase.” When asked about the market research that went into the development of the iPad, Steve Jobs famously replied, “None. It’s not the consumers’ job to know what they want.” And even when customers do know what they want, asking them may not be the best way to find out. Zara, the fast-fashion
When Marketing Is Strategy

Network effects constitute a classic downstream competitive advantage: They reside in the marketplace, they are distributed (you can’t point to them, paint them, or lock them up), and they are hard to replicate. Brands, too, carry network effects. BMW and Mercedes advertise on television and other mass media, even though fewer than 10% of viewers may be in their target market, because the more people are awed by these brands, the more those in the target market are willing to pay for them.

Indeed, the very nature of network effects is that they are accumulative. But other downstream advantages—particularly those related to amassing and deploying data—are accumulative as well. Consider Orica, an explosives company mired in a commodity business in Australia. The primary concern of its customers—quarries that blast rock for use in landscaping and construction—was to meet well-defined specifications while minimizing costs. Because the products on the market were virtually indistinguishable, the quarries saw no reason to pay a premium for Orica’s or any other company’s explosives. At the same time, Orica knew that blasting rock is not as straightforward as it may appear. Many factors affect the performance of a blast: the profile of the rock face; the location, depth, and diameter of the bored holes; even the weather. Mess up the complex formula for laying the explosives often enough and your profits crumble into dust and get blown away by the wind.

Orica realized that customers harbored much unspoken anxiety about handling the explosives without accidents, not to mention transporting and storing them safely. If it could systematically reduce even some of those costs and risks, it would be providing significant new value for the quarries—far in excess of any price reduction that competitors could offer. So Orica’s engineers set to work gathering data on hundreds of blasts across a wide range of quarries and found surprising patterns that led them to understand the factors that determine blast outcomes. Using empirical models and experimentation, Orica developed strategies and procedures that greatly reduced the uncertainty that, until then, had gone hand in hand with blasting rock. It could now predict and control the size of the rock that would result from a blast and could offer customers something its competitors could not: guaranteed outcomes within specified tolerances for blasts. Quarries soon shifted to Orica, despite lower prices from competitors. Not only had the company developed an edge over rivals,
How Cialis Beat Viagra

Redefining customers’ purchase criteria is one of the most powerful ways companies can wrest market leadership from competitors.

The strategy serves incumbents and challengers alike. Consider, for example, the $5 billion market for erectile dysfunction drugs. Pfizer launched the first such drug, Viagra, in April 1998, with a record 600,000 prescriptions filled that month alone. At a price of $10 per dose and a gross margin of 90%, Pfizer could afford to splurge on marketing and sales. It rolled out a $100 million advertising campaign, and sales reps made a whopping 700,000 physician visits that year. In the process, Pfizer created an entirely new market on the basis of one key criterion of purchase: efficacy. The drug got the job done.

By 2001 annual sales had reached $1.5 billion, and other pharmaceutical companies had taken note of the size, growth, and profitability of the market. In 2003, Bayer introduced Levitra, the first competitor to Viagra. The drug had a profile very similar to Viagra’s and a slightly lower price—classic “me too” positioning.

Soon after, Lilly Icos, a joint venture between Eli Lilly and the biotech firm ICOS, entered the market with a new product—Cialis—that was different from its competitors in two ways. First, whereas Viagra and Levitra were effective for four to five hours, Cialis lasted up to 36 hours, making it potentially much more convenient for customers to use. Second, product trials showed fewer of the vision-related side effects associated with Viagra and Levitra.

At the time, the key criteria that physicians considered in prescribing a drug for erectile dysfunction were efficacy and safety. Those two criteria accounted for a relative importance of 70%. Duration had a relative importance of less than 10%.

The strategic question for Lilly Icos was whether it could influence how physicians perceived the importance of the criteria. The positioning was hotly debated prior to launch: Should the company center its marketing strategy on Cialis’s lack of side effects, given that safety was already one of the two key criteria? Or should it attempt to establish duration as a new criterion?

The marketing team decided to emphasize the benefits of duration—being able to choose a time for intimacy in a 36-hour window—in its launch campaign, and it set the price for Cialis higher than that for Viagra to underscore the product’s superiority.

The new criterion of purchase—marketed as romance and intimacy rather than sex—caught on. A BusinessWeek article reporting on an early positioning study stated, “Viagra users who had been informed of the attributes of both drugs were given a stack of objects and asked to sort them into two groups, one for Viagra and the other for Cialis. Red lace teddies, stiletto-heeled shoes, and champagne glasses were assigned to Viagra, while fluffy bathrobes and down pillows belonged to Cialis.”

In 2012 Cialis passed Viagra’s $1.9 billion in annual sales, with duration supplanting efficacy as the key criterion of purchase in the erectile dysfunction market.

but the advantage was accumulative: As Orica amassed more data, it further improved the accuracy of its blast predictions and increased its advantage relative to its competitors.

Can You Choose Your Competitors?

Conventional wisdom holds that firms are largely stuck with the competitors they have or that emerge independent of their efforts. But when advantage moves downstream, three critical decisions can determine, or at least influence, whom you play against: how you position your offering in the mind of the customer, how you place yourself vis-à-vis your competitive set within the distribution channel, and your pricing.

If you’re in the beverage business and you’ve developed a rehydrating drink, you have a choice of how to position it: as a convalescence drink for digestive ailments, as a half-time drink for athletes, or as a hangover reliever, for example. In each instance, the customer perceives the benefits differently, and is likely to compare the product to a different set of competing products.

In choosing how to position products, managers have tended to pay attention to the size and growth of the market and overlook the intensity and identity...
of the competition. Downstream, you can actively place yourself within a competitive set or away from it. Brita filters compete against other filters when they are placed in the kitchen appliances section at big-box stores, for instance. But Brita changes both its comparison set and the economics of the consumer decision when the filters are placed in the bottled-water aisle at supermarkets. Here Brita filters have a competitive cost advantage, delivering several more gallons of clean water per dollar than bottled water. Of course, not all buyers of bottled water are buying solely for the criterion of cost (some are buying for portability, for example), but for those who are, Brita is an attractive choice.

If you would prefer not to be compared with any other brands, then you’re better off marketing, distributing, and packaging your products in ways that avoid familiar cues to customers. A trip to the grocery store or a glance at online catalogs shows how similar many products’ packaging is: Most yogurts are sold in exactly the same pack size and format, and their communications are often so indistinguishable that consumers cannot recall the brand after having seen an advertisement. The lack of differentiation encourages competition, when many of these brands would be better off avoiding it.

Finally, pricing has a strong influence on whom you compete with. When Infiniti launched its come-back car, the G35, in 2002, it was hailed as a BMW-beater. The car, loosely based on the legendary Nissan Skyline, rivaled the BMW 5 series in terms of interior space and engine power, but it would have struggled to compete for a couple of reasons: The 5 series is aimed at experienced BMW buyers—or at least buyers who have previously owned a luxury automobile. Also, the 5 series is very expensive, and when customers are shelling out that kind of money, they’re not looking for value—they’re looking for an established brand and value proposition. Infiniti chose to position the G35 against the BMW 3 series instead. The right pricing accomplished that objective: Many consumers, especially car buyers, use price as a key criterion in forming their consideration set.

Although choosing to avoid competitors may minimize head-on competition, there is no guarantee that you won’t still have to contend with competitors you didn’t want or ask for. But if you’ve done your homework and established dominance on your criterion of purchase, me-too competitors will be putting themselves in an unfavorable position if they choose to follow you.

Surprisingly, you have more say in determining who your competitors are if you’re a later entrant in a marketplace than if you break new ground. A later entrant can choose to compete directly with an incumbent or to differentiate, whereas an incumbent is subject to the decisions of later entrants. But an incumbent is not helpless: It can stay ahead of competitors by continually redefining the market and introducing new criteria of purchase.
Does Innovation Always Mean Better Products or Technology?

Like prime real estate in a crowded city, customers’ mindspace is increasingly scarce and valuable as brands proliferate in every category and existing ones are sliced wafer-thin. Companies compete ferociously against one another not to prove superiority but to establish uniqueness. Volvo does not claim to make a better car than BMW does, nor the other way around—just a different one. In customers’ minds, Volvo is associated with safety, while BMW emphasizes the joy and excitement of driving. Because the two automakers emphasize different criteria of purchase, they appeal to very different customers. In a global study aimed at finding out what “excitement” meant to customers, respondents were asked to “describe the most exciting day of your life.” When the results were tallied, it turned out that BMW owners described exciting things they had done—white-water rafting in Colorado, attending a Rolling Stones concert. In contrast, the most exciting day by far in the lives of Volvo owners was the birth of their first child. Brands compete by convincing customers of the relative importance of their criterion of purchase. That is not to say that the upstream activities associated with building safer or faster cars don’t matter. The product remains an essential ingredient in demonstrating the brand’s positioning on its chosen criterion. The product and its features turn the abstract, intangible promises of the brand into real benefits. Volvo’s product innovations really do make its cars safer, reinforcing a lasting brand association with its customers. But the product itself does not occupy a more privileged position in the marketing mix than, say, the right communication or distribution.

Where Else Does Innovation Reside?

The persistent belief that innovation is primarily about building better products and technologies leads managers to an overreliance on upstream activities and tools. But downstream reasoning suggests that managers should focus on marketplace activities and tools. Competitive battles are won by offering innovations that reduce customers’ costs and risks over the entire purchase, consumption, and disposal cycle.

Consider the case of Hyundai in the depths of the Great Recession of 2008–2009. As the economy faltered, American job prospects looked painfully uncertain, and consumers delayed purchases of durable goods. Automobile sales crashed through the floor. GM’s and Chrysler’s long-term financial problems resurfaced with a vengeance, and both companies sought government bailouts. Hyundai, which primarily targeted lower-income customers, was particularly hard hit. The company’s U.S. sales dropped 37%.

As overall demand plunged, the immediate response of most car companies was to slash prices and roll out discounts in the form of cash-back offers and other dealer incentives. Hyundai considered these options, but it eventually took a different approach: It asked potential customers, “Why are you not buying?” The resounding answer was “The risk of buying during the financial crisis—when I could lose my job at any time—is simply too high.”

So instead of offering a price reduction, Hyundai devised a risk-reduction guarantee to target that concern directly: “If you lose your job or income within a year of buying the car, you can return it with no penalty to your credit rating.” Called the Hyundai Assurance, the guarantee acted like a put option, addressing the buyer’s primary reason for holding back on the purchase of a new vehicle. The program was launched in January 2009. Hyundai sales that month nearly doubled, while the industry’s sales declined 37%, the biggest January drop since 1963. Hyundai sold more vehicles that month than Chrysler, which had four times as many dealerships. Competitors could easily have matched Hyundai’s guarantee—yet they didn’t. They continued to slash prices and offer cash incentives. The Hyundai Assurance was a downstream innovation. Hyundai didn’t innovate to sell better cars—it innovated by selling cars better.

Reducing costs and risks for customers is central to any downstream tilt—indeed, it is the primary means of creating downstream value. Not surprisingly, many of the cases we’ve examined illustrate this: Facebook reduces its customers’ costs of interacting with friends; Orica reduces quarries’ blast risks; Coca-Cola reduces the customer’s costs of finding a cool, refreshing drink the moment she’s thirsty.

Is the Pace of Innovation Set in the R&D Lab?

The product innovation treadmill is an upstream imperative. In fact, technology innovations are sometimes thought to be the greatest threat to competitive advantage. But such changes in the market are relevant only if they upend downstream competitive advantage. You don’t need to sweat every product launch and every new feature introduction by
High failure rates for new products suggest that companies are continuing to invest heavily in product innovation but are unable to move customers’ purchase criteria.

By contrast, after more than a century of shaving technology innovation, Gillette still controls when the market moves on to the next generation of razor and blade. Even though for the past three decades competitors have known that the next-generation product from Gillette will carry one additional cutting edge on the blade and some added swivel or vibration to the razor, they’ve never preempted that third, fourth, or fifth blade. Why? Because they have little to gain from preemption. Gillette owns the customers’ criterion—and trust—so the additional blade becomes credible and viable only when Gillette decides to introduce it with a billion-dollar launch campaign. Four blades are better than three, but only if Gillette says so. In other words, technological improvements don’t drive the pace of change in the industry—marketing clout does.

Market change can be evolutionary, generational, or revolutionary, and each type can be understood in terms of consumer psychology. Evolutionary changes push the boundaries of existing criteria of purchase: higher horsepower or better fuel efficiency for cars, faster processing speeds for semiconductor chips, more-potent pills. Generational changes introduce new criteria that complement old ones, often opening up new market segments: sugar-free soft drinks, hybrid vehicles, pull-up diapers, once-a-day medications where multiple pills were previously required. Revolutionary changes don’t just introduce new criteria, they render the old ones obsolete: The new video-game controllers from Nintendo Wii changed how people interact with their games; touch screens and multitouch interfaces changed what customers expect from a smartphone; a vaccine for tuberculosis, AIDS, or malaria would make current treatments almost redundant within a couple of decades.

The power required to push a revolutionary change through the market is greater than that required to move a market through a generational change, and that power in turn is greater than the market muscle required to introduce an evolutionary change. In each case, the quality of the product innovation—the increased benefits relative to current products—helps move the market, but it does not guarantee a shift. High failure rates for new products in many industries suggest that companies are continuing to invest heavily in product innovation but are unable to move customer purchase criteria. Technology is a necessary but insufficient condition in the evolution of markets. It’s the downstream activities that move customers through evolutionary, generational, and revolutionary changes.

Tilt

An ongoing downstream tilt in industry after industry calls into question many ingrained assumptions about business—in particular, those about competitive advantage, competition, and innovation.

The downstream tilt has particular resonance for three kinds of companies: The first is companies that operate in product-obsessed industries, such as technology and pharmaceuticals. The possibilities of downstream value creation and the potential for building competitive advantage in the marketplace tend to be eye-opening for such firms. The second is companies operating in maturing industries whose products are increasingly commoditized. These firms are keen to find sources of differentiation that do not rely on easily replicated products or production advantages. The third is companies seeking to move up the value chain. Downstream activities provide a way to build new forms of customer value and lasting differentiation.

The critical locus of both value and competitive advantage increasingly resides in the marketplace rather than within a company. Activities that attract customers by reducing their costs and risks and repel rivals by building unassailable sources of differentiation represent the key to competing downstream. The downstream playing field has its own set of rules, and managers who learn to play the game achieve an early advantage.

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There are two general schools of thought regarding the way in which the process of financial planning should be conducted. The first paradigm of financial planning is cash-flow-oriented, with recommendations for clients shaped by a thorough analysis of a client’s goals, aspirations, time horizon, risk attitude, and other factors, with an emphasis on how goals can be funded over time through cash-flow allocations. Some have called this methodology a client-centered approach that emphasizes cash flow in the financial planning process.

The second approach to financial planning is called goal-based planning. Over the past ten years, goal-based financial planning has grown in popularity. The primary difference between a client-centered approach and the goal-based method is the way recommendations are formulated. The goal-based approach is a simplification of institutional money management techniques applied to individuals and families. Institutional managers, particularly those in the nonprofit sector, tend to build portfolios that are designed to fund current and future liability needs. When applied to households, this means that a client’s goals are first determined as a specific funding liability. Each client goal is then ranked. Once ranked, goals are evaluated in the context of client’s balance sheet, rather than through a cash-flow analysis.

It is this last point that makes goal-based financial planning unique. This approach to planning can be quite beneficial as a way to determine the likelihood of planning success by matching current assets to specific goals. It is possible to then estimate funding liabilities as the difference between the future value of assets and expected goal costs. The method also provides for flexibility in portfolio development. Rather than having one portfolio, each goal can have a unique portfolio allocation. This is the point of divergence between a client-centered approach and a goal-based methodology. Specifically, those who advocate goal-based financial planning are not as concerned with a client’s subjective risk profile, investing attitudes, past experience, or what some might call psychosocial or emotional tendencies.

For true adherents to goal-based planning—those who have literally adopted the institutional method and applied it to their work with individuals and families—the notion of assessing financial risk tolerance in a traditional sense, and incorporating this factor into planning recommendations, is quite bizarre. That is, a subjective risk assessment should really not be a factor in the goal-based planning process. What really matters, for a goal-based financial advisor, are objective risk factors. For example, a goal-based planner should be concerned with a client’s risk capacity, not the client’s willingness to engage in financial behavior in which potentially negative outcomes exist. Risk capacity refers to a client’s ability to withstand a financial loss. Capacity is a function of net worth, amount of insurance, income, and other similar factors. Nearly all financial capacity factors are found on a client’s balance sheet and in his or her tax and risk management profile. Asset allocation decisions then emerge based on a combination of risk capacity and tax factors.

Goal-based financial planning is an enticing practice model precisely because it attempts to remove as many nonquantifiable factors from the planning and portfolio development process as possible. Consider this very simple example. A client approaches a goal-based financial advisor with a primary goal of funding retirement beginning in 25 years. Once the advisor determines the future value cost of goal achievement, a recommendation based on the client’s current risk capacity (which includes the relatively long investing time horizon) and tax situation is presented to the client.
the discussion, the client learns that the route to goal achievement will require the development of a portfolio that carries a substantial level of potential volatility. The client then discloses that her knowledge of and experience in the financial markets are extremely limited, and that she sometimes feels like her financial life is just one random event after another. The bottom line is that she is somewhat fearful that the level of potential loss the advisor is recommending exceeds her willingness to take financial risk. The advisor listens attentively and responds by assuring the client that given her goals and objectives related to retirement, she is obligated to position her portfolio in such a way that the risk of loss is an ongoing possibility. That is, simply, if the client truly wants to achieve her retirement goals, then the stated level of risk must be taken, even if it exceeds her risk tolerance. The risk-assessment process is not abandoned in this procedure, nor should it be. Financial advisors have the increasingly important suitability responsibility to know their clients the best they can. Risk assessment is part of this process. However, in goal-based planning, only risk factors that are objectively quantifiable, such as capacity, tend to be evaluated.

From a financial advisor’s perspective, goal-based planning is both intuitive and practical. Each client goal has a price. Most client goals are underfunded, and given these facts, a portfolio can be developed, using a combination of stochastic and tax-adjusted strategies, that will eliminate funding liabilities over time. It is precisely this fixation on the quantitative nature of financial planning that causes many goal-based financial plans to fail. Stated another way, the fact that recommendations are made with minimal regard for a client’s attitudinal, emotional, or psychological preferences is likely to cause plan failure at some point, at least among some clients. Goal-based financial planning is ideally suited for clients who have excess risk capacity; but for those who must make sometimes painful asset and purchase choices with limited cash flow, the goal-based approach is much more problematic.

This conclusion is based on much of the existing financial risk tolerance, neurofinance, and psychophysiological economics evidence. Reconsider the example from above. The literature would lead to a very reasonable prediction that the client will abandon the recommended retirement portfolio sometime in the future. The abandonment will have nothing to do with the advisor’s skills or the efficiency of the portfolio. The client’s decision to desert the planning path will be a direct result of the tension between the advisor’s choice of portfolio volatility and the client’s willingness to take risk. That is, the plan will fail because the client’s risk tolerance was not a key determinant of portfolio choice and allocation.

Remember that the use of attitudinal factors, such as risk tolerance, within the planning process is much more representative of a client-centered approach to planning. Financial advisors who use a client-centered approach acknowledge that client emotions play a key role in shaping future behavior. Goal-based advisors may know this to be true, but they attempt to minimize the role of these variables when developing recommendations. To do so, however, can lead to problematic outcomes.

Consider again the example from above. A client-centered financial advisor would predict, quite reasonably, that the recommended retirement plan will fail in the future. What evidence exists to predict failure? The answer to this question comes from the link between risk tolerance and future behavior. The evidence is clear that risk tolerance and wealth are positively linked, and over time, clients strive to reach equilibrium between their willingness to take risk and the actual level of risk in their portfolios. Few individuals can withstand the pressure of taking ongoing risks beyond their comfort levels.

\begin{figure}
\centering
\includegraphics[width=0.5\textwidth]{figure1.png}
\caption{Mastery as a Risk Tolerance Mediator}
\end{figure}
Plan failure also can be predicted by understanding the determinants of risk tolerance. As described in a previous column, women tend to be less risk tolerant than men. Advisors who fail to recognize this possibility and move forward by recommending high-risk portfolios for risk-averse women have already laid the groundwork for plan failure. As shown in Figure 1, other complex interrelated associations are ever-present when working with clients. This figure illustrates how a person’s tolerance for risk can be mediated by other factors, such as mastery. Mastery refers to how individuals perceive their level of control over forces that influence their lives. Knowledge, experience, and confidence are positively related to mastery.

To illustrate how mastery can mediate the relationship between gender and risk tolerance, 7,468 preretirees were asked to respond to the following seven “mastery” items using a scale from strongly disagree to strongly agree: (1) There is really no way I can solve some of the problems I have; (2) Sometimes I feel that I’m being pushed around in life; (3) I have little control over the things that happen to me; (4) I can do just about anything I really set my mind to; (5) I often feel helpless in dealing with the problems of life; (6) What happens to me in the future mostly depends on me; and (7) There is little I can do to change many of the important things in my life. High scores, after recoding, are indicative of someone who feels in control of his or her situation.

A Sobel test was conducted to determine whether or not mastery mediates the relationship between gender and risk tolerance. Results from the test showed that high scores on the mastery scale did, in fact, mediate the gender/risk tolerance relationship. More specifically, while women still exhibited a lower tolerance for financial risk, risk aversion was reduced in cases where women exhibited mastery of the factors impacting their life. Stated another way, general life mastery reduces the negative relationship between being female and risk tolerance.

In some respects, this statistical result is intuitive. People who feel like they are in control of their lives tend to be happier and healthier. The evidence also shows that they will also be more willing to take financial risk. The opposite is true as well. This information can be used to strengthen the prediction that an aggressive goal-based retirement plan for a woman with low risk tolerance and low mastery will fail sometime in the future. While it is true that some people can and will hold true to financial plans that do not match their attitudinal preferences, this is certainly not valid for the majority of people who seek financial planning help.

The literature offers a clear take-away for financial advisors; namely, financial planning success is improved with the integration of emotional, attitudinal, and client preferences into client-centered recommendations. While client goals should always dominate the planning process, the way recommendations are formulated and implemented should recognize that a client’s wishes and beliefs are just as important as his or her capacity to take risk.

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(3) Mediation exists when the impact of one variable on another (gender to risk tolerance) is reduced or enhanced when another variable is considered.
(4) Data were obtained from the 2010 sample of the National Longitudinal Survey of Youth, accessed at: http://www.bls.gov/nls/nlsy79.htm.
(6) Sobel test statistic: 2.07; Standard Error: .003; p< .05.
(7) It is important to note that mastery alone does not eliminate the way women tend to view financial risk; rather, mastery minimizes the total direct effect.