

**Value System Innovation in a Stagnant Industry**

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**Abstract**

This study looks at how the stabilized network structures and mental models in a stagnant industry serve as barriers in the value system innovation within that network. On the basis of a review of archival material and 25 semi-structured in-depth interviews with industry insiders a network model is constructed and mental models particular to the industry are uncovered. An illustration of an alternative network model is introduced, with guidelines for instigating the desired transformation. For managers, the findings highlight barriers to value system innovation, depict an alternative system structure, and describe ways to innovative in a stagnant industry. The study contributes to academic discussions by incorporating the concepts of mental models, business networks, and business innovation in a novel way.

Keywords: Value systems, innovation, networks, mental models

## Introduction

Many contemporary network and innovation studies focus heavily on emergent industries, such as biotechnology (Costa et al. 2003), e-business (e.g. Amit & Zott 2001) or e-commerce (e.g. Kickul & Gundry 2001). In these emergent industries the network structure is not yet cemented and a wide array of managerial philosophies and cultures battle for supremacy. As the industry matures the network structure stabilizes, and certain ways of operating and approaching issues becomes dominant (DiMaggio & Powell 1983, Håkansson & Snehota 1998). This research looks at the value system innovation possibilities at this stagnant phase of an industry's evolution. Value system innovations are defined as being deliberate transformation in the industry network that change existing logics relating to the creation, delivery or capture of value. Special attention is given to how the mental models prevalent in the industry shape the drive towards value system innovations.

A firm's mental models are shared beliefs regarding the firm's ways of doing business and "they align themselves over time, producing 'cognitive communities' which span the boundaries of firms" (Welch & Wilkinson 2002, p.31). The importance of mental models builds on their functions and consequences; the mental models thus: 1) Guide how the managers perceive their competitive environment, what they see and what they don't see; 2) Guide sense-making interpretation - of what they see; 3) Provide them with mental theories for how to behave/not behave in a business field in order to gain success.

The critical issue then is that we are generally not aware of our mental models; we take them for granted and are, in fact, prisoners of them. This is the key issue this research aims to deal with through the following research question: *What types of value system innovations are possible in a stagnant industry and how do the industry's mental models serve as barriers to realizing these innovations?*

The research continues with a short review of the most relevant theoretical discussions and a description of the methodology; then continues with a review of the most significant results and concludes with a discussion section.

## Theoretical Background

The transformation from vertical, single industry-based markets that rely on linear value chains, to complex, overlapping business networks that interact with political networks and social institutions calls for a new understanding of business fields as value networks (Castells 1996; Ford et al. 2009; Möller et al. 2005). In addition to competing with each other, companies must also learn how to collaborate and manage within a network context (Ritter & Gemünden 2003).

In spite of the eminent strategic and global relevance of networks, there is still great ambiguity and a lack of knowledge about their purposeful development and management. One reason is the number of different conceptualizations used in network studies. Some authors focus on business networks (Håkansson & Ford 2002), and some speak of strategic networks (e.g. Jarillo 1993), while others use terms such as value nets (Parolini 1999). In addition to business networks studies, there is considerable research that addresses inter-organizational networks and public networks (Provan & Millward 2001), as well as social networks (Smith-Doerr & Powell 2005). We focus here solely on business networks although

we do recognize the importance that professional and social networks between managers can play in creating business networks.

The cognitive approach to organizations is an important approach and has a tradition in the study of strategy and management, having its early roots in management decision-making (Newell & Simon 1972) and in the behavioral theory of the firm (Cyert & March 1964). There is solid evidence that our individual behavior is highly influenced by the mental models we construct in a passive and unconscious manner. "Mental models are deeply ingrained assumptions, generalizations, or even pictures or images that influence how we understand the world and how we take action" (Senge 1990 p. 8).

Management mental models are - through the cultural system of an organization - further transformed into organizational mental models. There can be several of these in a single company, for example, the marketing and engineering sections may have their own unique mental models. However, through cultural management activities, most major companies try to develop a relatively unified corporate culture (Schein 2005), which means that it is often useful to speak about and analyze the specific mental models of firms (Welch & Wilkinson 2002). These models also are represented by the top management team. Furthermore, mental models common to firms operating in an industry can help to illuminate industry-specific mental models.

### **Methodology**

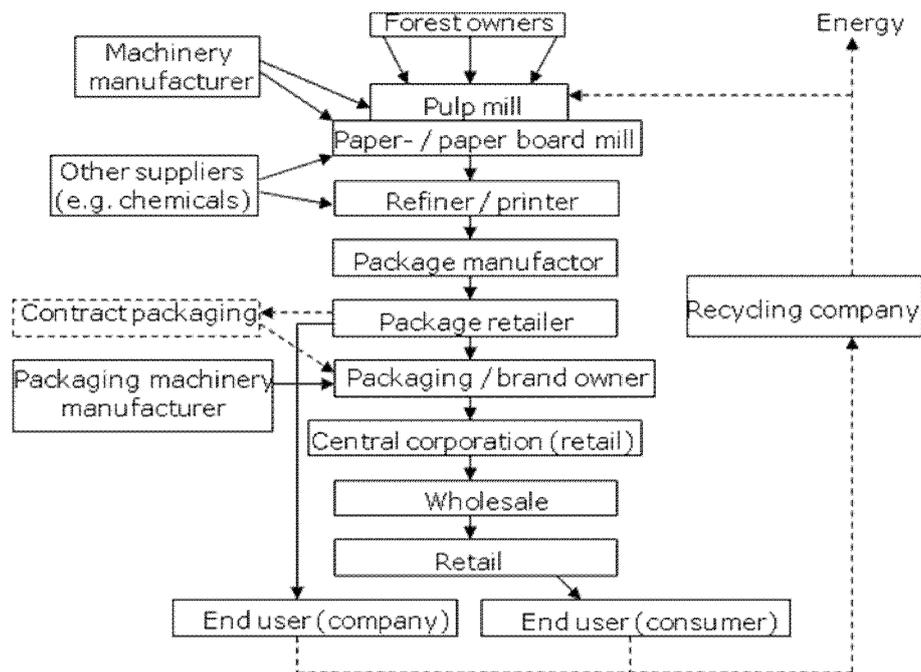
Due to the complexity of the networks being researched as well as the newness of the research area, it was determined that the case method would be most fitting (Stake 2000). Case selection is a crucial phase in case research, and advice on case selection from previous literature was consulted (Eisenhardt 1989, Pettigrew 1989, Perry 1998). The case companies were selected based on theoretical sampling, in such a way that they best represent the problem of the study. As is the case, the decision as to how many and which particular cases are selected was left to the researchers (Romano 1989).

Two sets of data were collected for this study: an extensive search of archival material covering the Finnish consumer-goods packaging industry and its major companies, and a field study involving 25 interviews with identified industry experts. The semi-structured personal interviews were completed with managers and industry experts within the entirety of the packaging industry network in Finland. The interviews started with pilot interviews with recognized experts to get a deeper knowledge of the packaging industry. During every interview, additional industry expert names were gathered (Arksey & Knight 1999).

The taped interviews were transcribed and analyzed in early 2010. In the ensuing analysis, the transcribed data was categorized for analysis (Miles & Huberman 1984). Although statistical sampling procedures were not followed, the number and quality of the interviews suggests that a representative and valid (unbiased) view of the industry was achieved. This interpretation is supported by the saturation of the themes and the precise information received during the last interviews. The used snowball sampling is a recommended procedure in this network research context, especially when combined with case data (Welch et al., 2002). In brief, such data can be regarded as reliable and valid and provides a good basis in this instance for understanding the structure and logic of the package industry value networks and its key operators.

## Results

At the outset of the study, on the basis of our review of archival material, as well as our previous knowledge of the industry, a preliminary sketch of the industry network structure was constructed. During the interview phase of the study, the industry experts were asked to comment on the accuracy of the preliminary sketch, and the on the basis of their comments, a model of the network structure of the Finnish packaging industry was developed (Figure 1). This depiction of the industry network has subsequently been presented to a wide array of professionals in various industry seminars and other similar instances, and it has been accepted as a fair and accurate description of the industry as it currently exists.



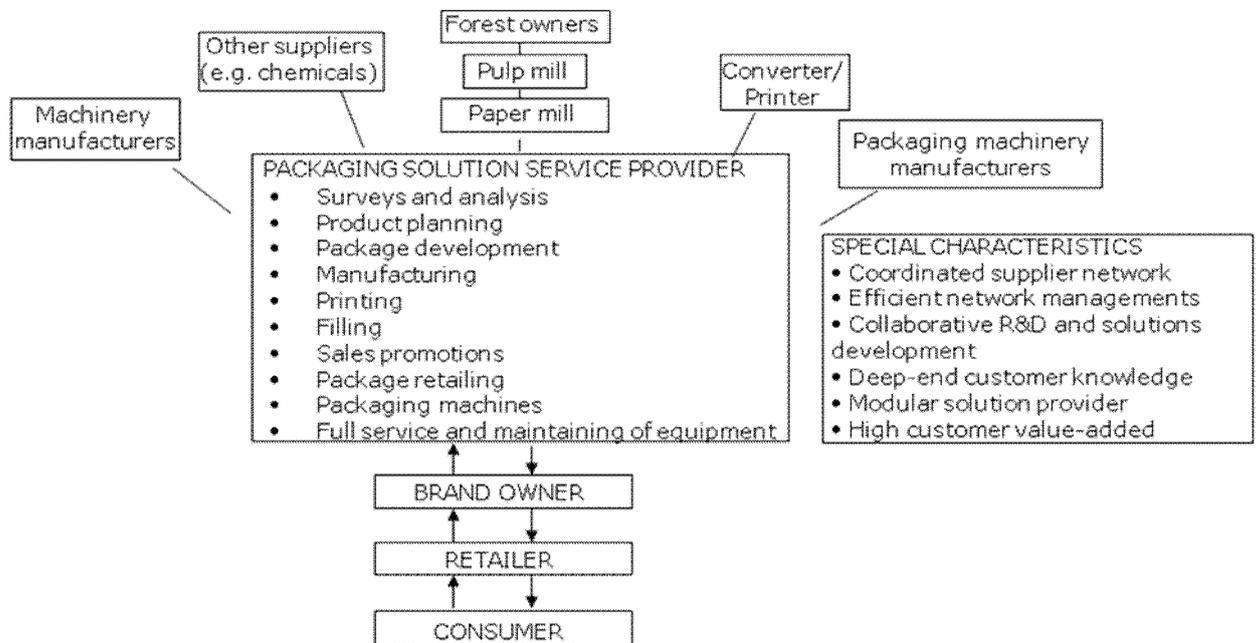
**Figure 1: Network of Finnish Packaging-related Business**

As is evident from Figure 1, the Finnish packaging-related business network has a fairly traditional vertical, multi-tiered supply chain structure. The roles of the various firms are narrow and specific. The study also revealed that while there are some long-term relationships among firms and instances of technical collaboration across firms, these were commonly 'market-based', i.e. competition was focused primarily price discounts.

Some of the lack of value system innovations taking place in the network may in part be explained by size and structure of the market. The majority of the packaging firms are relatively small firms operating in a small domestic market that offers limited space for value system innovations. Furthermore, the structure of the Finnish packaging industry is such that it is dominated at either end by extremely large players. On the raw material side are the large Finnish pulp and paper firms while at the other end of the value chain are large brand owners and centralized retail firms. These conditions make creating value system innovations challenging.

Throughout the interview phase of the study, it became increasingly evident that there was an almost universal call for a certain type of restructuring within the value network of the

industry – for a value system innovation. The call was for service integrator that could bundle services and capabilities from various parties and provide a more holistic packaging service directly to the brand owner firms. Based on the interview data, a depiction was constructed of how the transformed industry structure would look (Figure 2). This outline has also been reviewed, improved upon, and approved by industry experts.



**Figure 2: Solution Service Provider in the Packaging-related Business Network**

It is noteworthy that the desire for the type of value system innovation described above was common across the industry. The packaging companies themselves, quite obviously, saw their expanded role as a solution service provider as a means to growing their businesses and getting away from just competing on price. Brand owner firms were keen on having a single operator with whom they could deal, as opposed to having to deal with a multitude of players. Interestingly, also the raw material producers were eager to have a strong packaging solution service provider operating in the industry. This may seem counterintuitive as a large packaging firm may be able to negotiate lower raw material prices, but the raw material firms were confident that a packaging service integrator could increase the value brand owner firms see in packages, and thereby increase demand for more high-value packaging materials.

The empirical part of the study also produced interesting insights into the mental models common to the industry. Given the limited space available in this paper, illustrative quotes from our interview data had to be left out, but the *four mental models*, which most aptly reflect the character of the industry and its actors, are summarized.

First, the industry saw itself as being highly stratified and partly fragmented and, therefore, most (1) *businesses felt they should develop links only with direct suppliers and customers*. Second, it was common for interviewees to stress the long distance between their firms and the end-users, while bemoaning that the (2) *firm has a limited comprehension of the larger value network*. Third, relatively small firms sandwiched between larger firms felt frustrated and somewhat (3) *helpless in pro-actively shaping their own surroundings*. Fourth, packages were seen by the experts as being multidimensional, having several operational and strategic

functions, but it was felt that the (4) *true value of packages was poorly communicated to and understood* by most other players in the larger network.

### Discussion

This research aimed at increasing our understanding of how mental models prevalent in a stagnant industry serve as barriers to value system innovations. The conducted research illustrates how managers' mental models work to limit the scope of innovation possibilities they see as being available to them. The empirical findings of the research show how a chasm exists between the expressed desire of industry players for the future development of their industry and the possibilities they see as being realistically attainable in the near future. The mental models of the industry are key barriers to realizing value system innovation.

With a large parts of the Finnish packaging-related business seemingly in agreement that a value system innovation of the earlier-described type is desirable for the industry on the whole, and that it would be economically prosperous to a firm that successfully takes the central role, the question becomes why has this development failed to take materialize. The answer lies, at least partly, in the mental models observable in the industry. The mental models of the managers in the packaging-related business can be seen as limiting the scope of possibilities for value system innovation that the firms see as being available to them (Welch & Wilkinson 2002). The fact that the existence of the mental models is often unrealized by the managers increases their effect as barriers to innovation.

Especially for managers, we provide a five-point list of principles we feel are most appropriate in creating significant value system innovations in a stagnant business field. The points are based on the theoretical frameworks presented, the learning gained from this study, and our own earlier experience.

First, managers need to *acquire an in-depth understand of the value network architecture* within which their firm is located. They should critically assess the value creation and value capture activities of key actors in their network. Second, managers should aim to *identify ways of changing the value architecture* through finding new ways of bundling, modularizing, or speeding up existing value activities, or through bypassing old players or bringing in new players to the value network. Third, firms should try to *estimate the total value creation and capture* of their existing network. Even a rough estimate will help the managers to make projections on the how the value created by the value system innovation will be allocated to among participants. Fourth, firms need to *create partnerships and/or value nets*. Value system innovations are ultimately about value creation and capture activities that are new to the firm, and therefore, new capabilities are required. Fifth, managers must *realize the essential nature of culture and endurance* in driving value system innovation. The corporate culture should embrace exploration and willingness to question existing ways of operating.

This research is limited in its scope as it looks at a single industry in a single country. However, we are confident that similar economic environments can be found in other settings, and that our research is relevant beyond just the Finnish packaging industry. Future studies should look at how mental models have been broken in other stagnant industries. This could serve as a useful way of developing more detailed tools for managers looking to create value system innovations.

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