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Article

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Service-Dominant Logic and Licensing in International B2B Markets

Olavi Uusitalo · Kjell Grønhaug

Abstract: This paper asks whether the service - dominant logic is superior to the traditional goods - dominant logic for the use of licensing to commercialize new technologies internationally – and why so. To answer this question two case of licensing float glass, a float glass manufacturing technology and Benecol, a process to manufacture cholesterol lowering ingredient for food, are examined and contrasted. The findings indicate that the service – dominant logic yields advantages. Licensing logic for success in technology transfer is suggested.

Keywords: Licensing · Service dominant logic · International business

Introduction

This paper asks whether managers (firms) applying the good-dominated logic (G-D-logic) or service - dominated logic (S-D logic) may impact license success in the effort to commercialize a new technology (innovation). This question is important because licensing is frequently applied in the effort to commercialize new technology and

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because licensing often fails. Here it is believed that insights to this question may enhance firms' probability to succeed in their licensing effort.

To benefit from new technologies they must be commercialized, which either directly or indirectly implies contacts with potential customers to conduct - hopefully beneficial transactions. Contact with customers (the market) may – in principal be obtained in several ways, by straight direct sales, own distribution channels - or through distribution channels owned by others. However, options such as direct sales or building own distribution channels in many cases prove to be inherently expensive. Moreover distribution through other often prove to give too limited control and influence on sales of own technology, as well as too limited protection and appropriability to earn form the property rights embedded in the new technology. In such cases licensing may be the only relevant solution.

A license is a contractual deal. Contracts imply some future aspects, as what agreed upon will take place in the future, depending on whether the contracting parties fulfill their promises. However, most contracts are incomplete. "Contracts are incomplete for several reasons. First due to uncertainty related to the future, due to the existence of a large number of contingencies, it may be prohibitly costly to know and specify in advance to all of these possibilities. Second, particular contractual performance, such as level of energy an employee devotes to complete a task, may be very costly to measure...." (Klein 1980). Thus, knowledge requirements and costs associated with measuring the contractual performance often prohibit complete contracts. From this it is evident that international licensing deals raise both informational and motivational challenges.

Licensing as a contractual technology transfer mechanism is surprisingly little empirically researched (Kollmer and Dowling 2004). The purpose of this article is to examine whether the logic underlying an established license may influence its success or failure.

Underlying the way of doing business there is some logic, i.e. way of thinking influencing acting – either implicitly or explicitly. Vargo and Lusch (2008) identified key characteristics of logic underlying the traditional ways of doing business and marketing, where the seller is the point of departure with the focus is on "what is beneficial for me" (the sellers) which they labeled "good –dominant logic" (G-D logic). In the G-D logic goods are seen as the unit of exchange. The focus is from seller's perspective, i.e. on selling products. In a series of works they (Vargo and Lusch) have addressed the need to change from the traditional G-D logic to what they term service - dominant (S-D) logic.

In the S-D logic the focus is on value creation of both buyer and seller. Both parties are assumed to be involved and benefit. This means that the contracted party in a licensing deal has to be treated as an equal and valuable partner in their joint value creation. Such a shift in perspective is believed to influence flow of information, mode of interactions, motivation and willingness/ability to see joint interests, and work for the same goals. To explore the impact of both logics in international licensing agreements, we describe and contrast two cases of licensing agreements, a successful one and a failure. The two cases are float glass, a flat glass manufacturing process and Benecol, the process to manufacture cholesterol lowering ingredient for different types of food

such as yoghurt, margarine, milk etc. Implications for international licensing agreements and launching of new technologies are highlighted.

The remaining part of the paper has four sections. First, we clarify central concepts and describe theoretical elements and assumptions underlying this research. After this, we report on our research methodology. Then, the two licensing cases are described, followed by analysis and comparison of the two cases by using key characteristics derived from the research literature as basis for the comparison. At last we draw conclusions and discuss implications.

Central Concepts and Theoretical Inputs

In this section we discuss the central concepts and theoretical ideas underlining the paper, i.e. licensing, service dominant logic (Vargo Lusch 2004, 2008a, 2008b), as well as formal and informal co-operation (Håkansson and Johanson 1988).

Licensing

In this paper licensing constitutes the mode of external technology exploitation (Fosfuri 2006; Mottner and Johnson 2000). Licensing transactions can be made due to several reasons (Fosfuri 2006). Technology licensing may provide monetary and strategic benefits. The monetary benefits refer to generating licensing revenues (Davis and Harrison 2001). There are usually three ways for the licensor to get licensing revenues: 1) a lump sum, 2) royalty based on sales of volume and 3) the raw material sold to the licensee. The two latter ones are realized only if the licensed technology will be proven to create value to the licensee or its customers (Teece 1992). Moreover, raw material supply usually creates financial risks since the licensor has to build a production plant. If the licensed product is not selling the financial risks of the licensor are realized as the burden of both investment cost and at least fixed operation costs. The strategic benefits from technology licensing seem to be equal important (Arora et al. 2001). The licensor tries to improve his/her competitive position, which indirectly affects its financial performance (Lichtenthaler 2007a, 2007b). The central aspect in licensing is the agreement which specifies rights and obligations. A successful license requires that the both licensor and licensee have the needed knowledge and motivation to do the best for their common interests. This also requires that they have the needed knowledge about what to expect and able to specify the needed requirements. (Grønhaug et. al. 1999).

Service-dominant-logic

Marketing traditionally focus on operand resources that are goods as the unit of exchange. The purpose of economic activity in the goods-dominant logic focuses as on making and distributing saleable products. Value is created during the processes of production and distribution. Firms try to maximize profit from the sale of standardized and individually produced goods which can be inventoried before sale. (Vargo and

Lusch 2004) The service-logic in contrast implies that marketing is a combination of social and economic processes that focus on operant resources. The company identifies its core competences, the fundamental skills to represent potential competitive advantage. It also tries to identify other entities benefiting from these competences. A central point in the S-D logic is that the company takes care of customer relationships. According to Vargo and Lusch (2008a, 2008b) there is need for marketing to shift the unit of analysis from products to value creation. They also claim that it is essential to realize that drivers for all value creation are operant resources capable for acting on other players' resources. Table 1 shows key characteristics of goods- and service – dominant logic, respectively.

Goods Dominant Logic	Service-Dominant Logic
Goods	Service(s)
Tangible	Intangible
Operand Resources	Operant Resources
Asymmetric Information	Symmetric Information
Propaganda	Conversation
Value Added	Value Proposition
Transactional	Relational
Profit Maximization	Financial Feedback

Table 1: Contrasting the goods and service-dominant logics (Lusch et al. 2006, p. 268)

Inspection of Table 1 reveals great differences between the two logics, and these differences in thinking are believed to impact on actions. First, in the G-D logic the emphasis is on tangible goods, while in the S-D logic it is on service and intangible aspects. Further, in the G-D logic sellers' and buyers' information is asymmetric, while symmetric in the S-D logic, i.e. sellers and buyers are equal. Also the S-D logic emphasizes relations between sellers and buyers, i.e. both parties (sellers and buyers) must benefit, which is a prerequisite for relationships to last. This is in contrast to the focus on the individual transactions as reflected in the G-D logic.

Table 2 further distinguishes most of the differences characterizing the two logics.

Goods logic	Service logic
Making something (goods or services)	Assisting customers in their own value creation processes
Value as produced	Value as co-created
Customers as isolated entities	Customers in context of their own networks
Customers as targets	Customers as resources
Primacy of efficiency	Efficiency through effectiveness

Table 2: Transition for practitioners (Vargo and Lusch 2008a, p. 258)

Inspection of Table 2 reveals several important changes in practitioners thinking and doing from being in charge of making to assisting, when moving from G-D logic to the S-D logic. For example, such a change in logic implies a change from seeing customers in isolation to capture them in their own context, and also a change from seeing customers as targets to seeing them as resources.

Changes in thinking and action from moving from G-D logic to S-D logic, including the process of using ones resources for the benefit to another party, has been dealt with several research constructions. For example, in a special issue of this journal (*Journal of Business Market Management*, 2010, vol 4) Vargo and Lusch (2010) used insight to re-conceptualize and enlighten the concept of relationship, and Chandler and Wieland (2010) examined implications for networks, innovations and ecosystems, while Löbler (2010) examined the coordination between services and relationships by applying the S-D logic. Moreover, Lusch et al. (2010) used the insight to supply chain management.

Formal and informal cooperation strategies in international industrial networks

Informal cooperation is based on trust developed through social exchange. This can be attained only over time where the parties experience that the other party is trustable. In informal cooperation business comes first and visibility later - if it comes - whereas in formal cooperation, visibility comes first and business later - if trust can be developed. Formal cooperation does not always lead to real cooperation, and real cooperation is often not visible. Informal cooperation is developed by those who are directly involved in the business exchanges between companies, such as line managers at the middle organization level. Formal cooperation, on the contrary, is usually established at higher management level with higher. (Håkansson and Johanson 1988). In formal cooperation the parties are interested in illustrating the

presence or intended presence for the counterpart. The messages of formal cooperation can also be directed at competitors ("this market is nothing for you"), suppliers ("supply us; we are the leaders") or suppliers of complementary products ("our system are worth developing"). Similar remarks can be intended for other stakeholders. Informal cooperation is used when the parties are interested in business with the counterpart's network without visibility, which may prevent potential moves by competitors. Companies with a strong position usually use formal cooperation while companies with less strong position seek informal cooperation.

Research Methodology

This section reports on the research methodology chosen to examine our research problem empirically. Due to the exploratory character of our research problem, and because the research problem needs to be examined in its context (as a license does not take place in vacuum) a case study approach (Yin, 2009) was chosen. More precisely, this approach was chosen because in order to examine our research problem empirically, detailed data about the license, partners involved, the handling of the license, outcomes and influencing factors are needed.

Here we reconstructed the events and their unfolding over time in order to capture the processual aspects of the process technology transfer (see Menard 1991). Patton (1990) also argues that "qualitative inquiry" is highly appropriate in studying processes because depicting a process requires detailed description". Porter (1980) also claims that in an industry analysis it is important to get an overview of the industry first, and then focusing on the specifics. A broad understanding can help the researcher to spot important data when studying sources and organize data more effectively as they are collected. The study includes two cases, i.e. a case study of a successful licensing and one case study an unsuccessful licensing agreement.

The two cases selected for this study are very different. Float glass is a British innovations and targeted flat glass manufacturers. Benecol is a Finnish innovation and it is an ingredient used in food stuff and represents health constituent of foodstuff used so called functional foods. The target customers are food manufacturers all over the world.

The case descriptions reported in section 4 are based on interviews, news clippings from Finnish and international business magazines and newspapers (1960-2005) as well as on other sources such as company newsletters and published material of Benecol provided by Raisio Group as Jick (1979) suggested. The writing and the use of the cases also enhance deeper understanding of the phenomena and industries.

To capture the meaning of the collected data we applied content analysis to identify core consistencies and meanings (Kolbe and Burnett 1991, Patton 2002, Weber 1990, Patton 2002). Content analysis of annual reports and other published material has several advantages. The data in content analysis are unobtrusive, reliable, and may eliminate some of the biases such as sensemaking and selective

memory (Bowman 1984). Moreover top management in fact put a lot of effort into what the firm communicates through such reports increasing the reliability of the data (Bowman 1984). An important point is also that such data is often available for researchers. The access to data also enables reproducibility, which strengthens reliability (Weber 1990).

Besides writing and using the two cases, several conference papers and articles have been written based on the cases (e.g. Uusitalo 2009, Uusitalo and Grønhaug 2006 and Uusitalo and Mikkola 2010).

The Licensing Cases

In this section we report the cases, the float glass from Pilkington (UK) and the Benecol case for Raisio (Finland). The large US market as a target is common for both of them.

Pilkington and Float Glass in the US flat glass industry

The plate glass industry was characterized by high quality and high price products and large capital-intensive investments. In the early 1930s the European and the US plate glass manufacturers shared the world markets. The market outside the U.S. was divided so that the U.S. producers could take 20 percent and the European producers the remaining (Barker 1977, p. 361). To make plate, molten glass was rolled into a plate with a waffled surface and then ground and polished until both surfaces were smooth and parallel. In 1923 Pilkington from the UK together with Ford Motor Co. (later on Ford) installed the industry's first continuous plate manufacturing process. In 1937 Pilkington introduced a 'twin' machine to grind both sides of a plate glass ribbon simultaneously. Twin grinding gave Pilkington a technological advantage in plate glass manufacturing. The twin grinding technology was first licensed in 1937 to the leading continental manufacturer, the St. Gobain (Barker 1977, p. 189) and in the 1950s other European and US manufacturers (Barker 1994, p. 79).

In the 1950's in a seven year project Pilkington developed a new flat glass manufacturing process, a float glass, to replace the plate glass process. In the float glass process, a continuous ribbon of glass moves out of the melting furnace and floats along the surface of an enclosed bath of molten tin. The ribbon is held in a chemically controlled atmosphere at a high enough temperature for a long enough time for (the irregularities to melt out and) the surfaces to become flat and parallel. Because the surface of the molten tin is dead flat, the glass also becomes flat. As a result of this process it became possible to make thinner flat glass of high quality while eliminating the grinding and polishing steps required in the plate glass process. The float process was estimated to be ten times more efficient than the old grinding and polishing technique (The Glass Industry, July 1981, p. 16). In the late 1950s the

company gradually introduced float glass with the help of its partner into safety glass. The process was launched in 1959 as a total surprise to the industry

Pilkington weighted carefully the possibilities of exploitation of float glass. Soon the company rejected keeping the process for itself forever. It also rejected keeping the secret for just a few years to increase its market share. By keeping the invention, Pilkington thought, invited retaliation from other manufacturers and pressed by competition, might come up with an even more dramatic process. Furthermore, Pilkington had no the financial resources to produce all the float glass for the world market demand. (Wierzynski 1968).

Float glass was licensed worldwide in the 1960s and 1970s. At the beginning Pilkington granted licenses strictly only to plate glass manufacturers with specific terms for cross licensing (see Appendix). In 1960 Pilkington told US manufacturers, Pittsburg Plate Glass (PPG) and Libbey Owens Ford (LOF), them being licensee candidates. According to Pilkington's licensing policy the first licensee should not operate a second plant until the second licensee had , in his turn, had an opportunity of operating his first plant (Skedde 1977). PPG delivered Pilkington float glass products to selected mirror, glazing and automotive customers, to seek feedback from them. GM's feedback was important. PPG estimated that an initial 10 percent reduction in prices for float glass relative to plate glass prices would be a sufficient inducement for GM to adopt float glass. PPG did not ask comments from Ford since Ford could have considered taking a license from Pilkington for the float glass process itself. LOF decided to construct their first float glass unit in California. This signaled, of course, the willingness of GM to accept float glass for all their automotive products. (Skedde 1977).

In 1962-1974 Pilkington sold six float glass licenses to the US. The technology transfer involved intensive training. The production team of a licensee comprised almost 20 people and they spent at least four weeks in Pilkington plant with the Pilkington team of the same size. For Pilkington it was crucial that a good relationship between the teams of a licensee. The company encouraged social entertainment. The visit lasted from four weeks to 12 weeks depending on the case. Grundy (1990).

Iley (1984, p. 53) reported the success of licensing operation of Pilkington as follows:

“To date [1983], 31 licensees from around the world have taken licenses. Pilkington takes particular pride and satisfaction in the fact that, in every case, staff of the licensee has been trained on a Pilkington plant and every start-up has been successful.” Iley (1984, p. 53)

In the 1960s the US window glass producers competed with imported window glass. Producers invested in window glass plants since float glass was neither suitable the window glass use nor available for them. In 1970 Guardian, outside the flat glass industry, built its a float plant without any license. Pilkington reached the licensing agreement in 1971 with Guardian not to loose royalty income (Uusitalo, 1995). Later on, complementary innovations (Teece 1986), such process automation, computer based quality control, the process control and the mechanical engineering increased

the effectiveness (thinner, tinted glass with lower costs) of the float glass process. The development of the US market is illustrated in Figure 1.

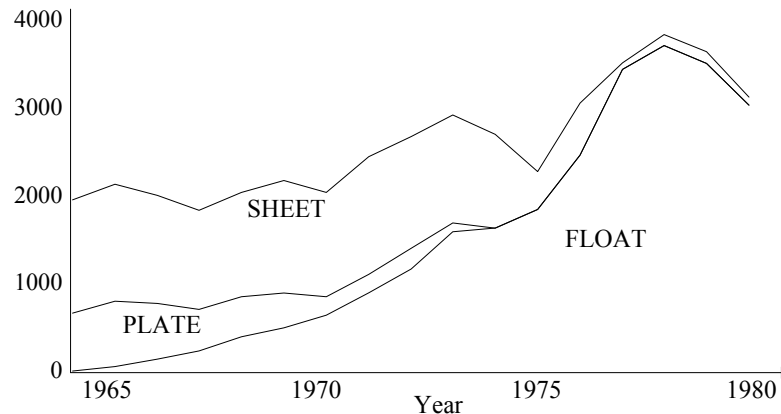


Fig. 1: Flat glass production in the US, 1964-1980 (Edge 1984)

Inspection of Figure 1 reveals that over time float glass became dominant design in the flat glass industry.

Benecol and the global food industry

The term functional food leads to think of a food with a specific function or effect. The product may vary both in shape and in specific function, but the desired outcome is a scientifically justified medical effect. The effect may be a preventive one, which delays or altogether impedes the onset or further development of a disease, or even a curing one. The last effect, curing one, makes the distinctions between food and medicine blurred. If functional foods are seen as food products, they are also expected to appear food-like and have a pleasant taste. If functional foods are seen as proactive medicines, they may assume medicine-like shape and taste (Mark-Herbert 2002).

The cholesterol-lowering effect of plant sterols was known as early as the 1950s, and since that time scientists all over the world have studied plant sterols and their properties. The process for extraction of sitosterol, raw material for the sitostanol ester, was created at a Finnish university in the 1970s. In 1980 a Finnish pulp mill started to produce sitosterol. That time it was known that plant stanols were the most effective and safe of the plant sterols in reducing serum cholesterol. However, nobody knew how to use plant stanols in foodstuffs.

In the mid 1980s a manager from a Finnish pulp asked a couple of professors whether they had any use for sitosterol, a by product of the pulp mill. Professor, Tatu Miettinen, who had done extensive research on fat metabolism, studied a sample of sitosterol as the sitostanol ester. The problem was how to dissolve sitostanol in oil or fat. First he suggested research on plant sterols and stanols to the largest Finnish

dairy company, which, however, turned down the idea. Miettinen was convinced his ideas were right and he did not give up. He then turned to the Raisio Group (later on Raisio) and to R&D Manager, Ingmar Wester from Raisio's Margarine Subdivision. In 1989 Raisio develop a manufacturing process to turn plant sterol into fat-soluble stanol ester suitable for food production. A patent application was filed in 1991. In 1993 after four years the manufacturing process was developed.

The findings of a three years clinical stanol ester study were published in the New England Journal of Medicine (NEJM) in 1995. Raisio introduced the first product, Benecol margarine, on the Finnish market in 1995. Soon expectations both in Finland and internationally grew. The Times wrote about Mr Wester as "the man whose pot of gold could save millions of lives". The limited production capacity of the raw material was a restricting factor. In 1996 Raisio could satisfy only two thirds of the demand in Finland. In 1996 stock analysts valued the Benecol patents to almost \$2 billion and Raisio's stock price sky-rocketed (see Figure 2).

In April 1997 Raisio's top management was overwhelmed with offers varying from the big boys operating worldwide to shopkeepers in Nigeria. They were in doubt about whose offer they may accept. Rather than choosing one global giant, they were more likely to name several partners. The CEO of Raisio said: "One giant global partner would not get Benecol out with maximum speed, [but] the No. 2s in individual markets may be more hungry to take this interesting innovation forward" "(Echikson 1997)". International press followed Raisio and Benecol very intensively (Brännback 2003).

Figure 2 shows stock prices and related events for the period 1995-2001.

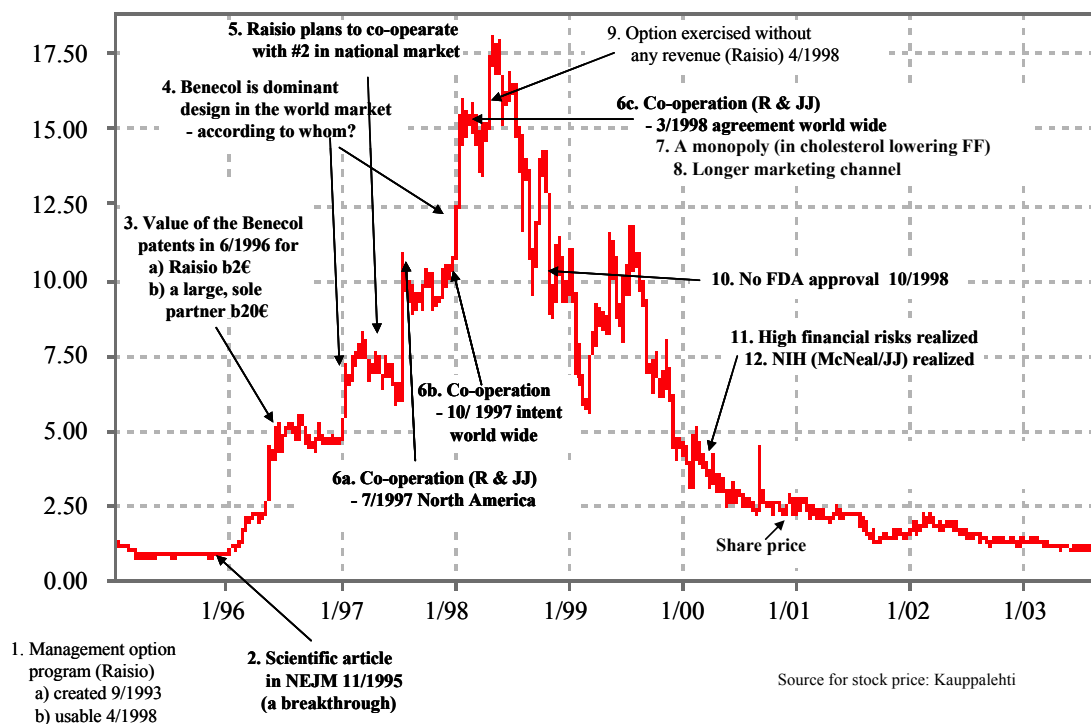


Fig. 2: The events relating to Raisio Benecol and Raisio's stock price in 1995-2001.

In 1997-98, Raisio signed an agreement with the US McNeil Consumer Products Company, a part of the Johnson & Johnson group (the world's biggest and most versatile producer of health-related products with a turnover of \$22 billion in 1996 and 170 operative companies in 50 countries) first for North America and then world wide. McNeil had the sole right to use the Benecol trademark and patents on the global markets. McNeil aimed to introduce the first products in 1998. Raisio kept the entire production of raw material in its own hands and developed the Benecol production and marketing in Finland and neighboring areas.

Raisio's business model of licensing Benecol included 1) a modest lump sum, 2) royalty and 3) the revenue of the sold ingredient. In 1998-1999 Raisio built plants in Finland, Chile and the US to supply enough raw material. Naturally Mc Neil's expectations were as high as those of Raisio, thus only an exclusive agreement was good enough (and possible). Global marketing took place by a strong and skilful partner. McNeil introduced the first products in spring 1999, one year later than planned (Uusitalo, 2000).

Comparison of the two licensing strategies

From the above description it is evident that float glass became the core competence for Pilkington. It was a breakthrough, revolutionary, discontinuous and competence destroying innovation (Anderson and Tushman 1990, Quinn 1989 and Utterback 1994) making the existing plate glass technologies obsolete (see Figure 1). Thus, float glass became an operant resource for Pilkington indeed. The float glass technology was at the beginning effective only in the plate glass industry. In this industry Pilkington made test marketing of float glass as the raw material for safety glass to a partner company. This testing involved the process of listening, aligning, and matching (Vargo and Lusch 2004). Float glass was too thick and too expensive, thus not effective at all, in the sheet glass industry. As mentioned in the case description in the 1960s and the 1970s the effectiveness of float glass was improved by complementary technologies, such as process automation (Teece 1986, 2006).

Pilkington had experience of licensing both as a licensee (licensing sheet glass drawn process from PPG in the 1930s) and licensor (in the 1950s the twin grinding technology for the plate glass manufacturing in the US) to the flat glass industry and thus knew the industry well. In Teece and Pisano's (1994) words float glass "stems from dynamic capabilities rooted in high performance routines operating inside the firm, embedded in the firm's processes, and conditioned by its history." The commercialization (the licensing) of float glass technology involved a lot of other manufacturers first from the plate glass industry and later on from other industries. The float license allowed the licensee to lower its production costs. Pilkington charged a lump sum and royalties. Licensing of the complementary process technologies also involved extensive training and later on the updating of technology plus training related to the improved technologies. This was the case with float glass, as well.

Because of the oligopolistic structure of especially the plate glass industry both in the US and Europe the float glass licensing operations required well managed

relationship between the licensor and a licensee. Licensees in the US represented to the licensor, Pilkington, core competences (complementary asset, Teece 1986) organized to gain competitive advantage in manufacturing and selling (thus providing licensing income to the licensor) plate glass and sheet glass in the US. In order to serve the licensees and their customers Pilkington's intention was to have a smooth and quick start of each new line licensed. Because of that Pilkington created service-centered marketing which was customer-centric and market driven (Day 1999). For instance all Pilkington employees from engineers down to the workmen in contact with customers (licensees) were service oriented marketing people (Grundy 1990). In 1964 Mr. Grundy, the foreman responsible for licensees site, spent 12 weeks with the licensee during the start up of first licensed line. In marketing (licensing) the value, the well functioning (24/7) manufacturing process with lower manufacturing costs, was defined by the licensees and the value was also later on co-created through cross licensing (see Appendix). Pilkington built both on informal and formal co-operation (Håkansson and Johanson 1988). Pilkington's licensing policy focused especially to maximize the number of friends and minimize the number of enemies.

As shown in the case description the development for Benecol was very different. The position of float glass in the plate glass industry was clear from the beginning, while Benecol was regarded as a functional food getting a lot of public attention. The positioning of Benecol products in between food and medicine as functional food was blurry, and thus it was very challenging. The demand of float glass came from the value chain (safety glass and car manufacturers) while in Raisio's case the demand came implicitly from the consumers via stock analysts. Raisio was not as international as Pilkington was. Pilkington knew the industry (the flat glass and safety glass) very well because of earlier licensing and its presence on the global market while Raisio had very little knowledge about the global food business.

Maybe the NIH (not invented here) episode in the 1980s had slight impact on Raisio's actions. Prof. Miettinen, the idea generator of Benecol, offered first unsuccessfully the research on plant sterols and stanols to the largest dairy company in Finland. The company turned the idea down. Raisio was Prof. Miettinen's second choice. Raisio's management might have become a bit arrogant and thought that we will show the Finnish competitor (and also other industry participants) that they could commercialized Benecol alone world wide. This meant that local dairy or food companies were not able to license Benecol from Raisio and ruled out local informal cooperation.

Benecol and Raisio's stock price made a unique combination. Here the stock price of Raisio was directly and solely based on the expectations¹ of the Benecol innovation (see Figure 2). After the scientific article reporting a clinical test in Finland was published, the stock price took its first jump. The press followed each move of Raisio's Benecol and stock analysts made their conclusion based on that. Moreover, the marketing in Finland started well. The product was sold out in 1995 in several Finnish stores. However, the Raisio's press releases or articles by journalists had little information on the real use of functional food for instance in then main market, the US.

¹ We compared Raisio's high expectations in 1996 to real events in 2005 as follows: the half, \$1 billion, of the potential sales value of the patents in 1996, was 200 times the profit of the Benecol business in 2005.

The patents were valued to almost \$2 billion. Perhaps all these positive events and rising stock price (see Figure 2) created a slight arrogant attitude to Raisio.

The company “knew” the value of Benecol. In the early 1997 Raisio’s management and after the North American licensing agreement with McNeil in autumn 1997 at least Raisio (probably also McNeil) regarded Benecol as a dominant design (Anderson and Tushman 1990) in the functional food segment. Raisio’s licensing model backs this conclusion. They trusted blindly on one partner serving the whole globe and took both sales and financial risks. There are cases when licensees have bought exclusive licenses to block the product from the market.

However, functional food was totally new market between food and medicines. Nobody knew whether consumers would like these products (within margarine, milk, yoghurt or should the functional food have good taste etc.) and accept them. This and the global food (and pharmacy) industry was totally unknown to Raisio. Still Raisio began licensing negotiations with many large partners to "conquer the US and the world market quickly". High expectations misled the parties to see their position as a monopoly. Raisio also started co-operation with a sole partner. Raisio counted on tight and formal co-operation. It also tried to get everything immediately, and tried to create a world wide monopoly with Johnson and Johnson (McNeil’s parent company) to sell Benecol.

Raisio’s licensing model of had two consequences. First, this model implied both the sales risk of new products and the financial risk of the built plants for manufacturing the ingredient. Raisio’s investment in manufacturing also constrained its market responsiveness (Vargo and Lusch 2004), since in order to pay back the plants Raisio had to sell a lot of ingredient. Thus, Raisio’s licensing model concentrated on sales of the product, the ingredient to the sole licensee and not the services to licensee’s customers or partners. With this licensing model Raisio gave away all the positive aspects of licensing i.e. 1) to collect market information, 2) to create and conduct customer relationships, and 3) to offer service for the users of Benecol to the licensee, McNeil. Raisio’s only contact to the market was via the licensee. Very often licensees control tightly the flow of market information to the licensor. This was the case also within Raisio’s and McNeil co-operation. Raisio received little market information from its licensee. In the licensing negotiations the true knowledge from the market i.e. how much (if any) and in what form consumers use / eat functional food was forgotten. Thus, Raisio lacked important knowledge of the field. There is a long way from an article in a scientific journal to the knowledge of consumer behavior.

Table 3 contrasts the licensing strategies of the two companies. Raisio had to sell product, ingredient, in order to fulfill the expectations and to finance the production plant investments while Pilkington created services to its industrial partners. In the 1960s for instance the thickness of float glass was reduced from 6.5 mm to 2 mm provided further applications for flat glass manufacturers. This also made it possible for float glass to enter sheet glass market where all the existing US licensees also operated. Raisio had tangible product, ingredient and all end products were created by the customers of licensees. Raisio had no possibilities to sell services. Pilkington in contrast sold tangible services by installing float glass lines and updating the existing float glass technology.

Raisio / Benecol (goods)	Pilkington / float glass (service)
products; licensing revenue	service
tangible (raw material; business model)	intangible (service, updated technology)
expectations	float glass / dominant design, competence destroying
monopoly, believed everybody needs	dialog; well known industry
one partner delivering	
formal co-operation	
value added	value proposition
transactional (products)	relational (cross licensing; complementary assets)

Table 3: The comparison of the licensing cases

Raisio believed in outside expectations while Pilkington learned from real test marketing. Raisio more or less liked to create a monopoly (almost every consumer needs cholesterol lowering food) and trusted asymmetric information (seller sells) while Pilkington had a dialog within the industry it knew so well. Pilkington had also considered carefully the consequences of different type of commercialization modes (direct export, own plant in the US and licensing) in the US market. The quick capitalization of Benecol led Raisio to choose one huge (25 times larger than Raisio itself) and versatile (high level of R&D and global) partner while Pilkington licensed to all local actors in the US plate glass industry. Raisio used formal cooperation with 1) negotiation on top, 2) high publicity without any sales, 3) no free flow market information and 4) little activities on the lower organizational levels. Pilkington had extensive training and tests with its licensees involving people from all organizational levels. This has features such as 1) co-operation of operational and labor levels of organization and 2) informal flow of information from the informal co-operation. Raisio had transactional relationship with the product sales while Pilkington relational relationships with cross-licensing.

Based on our analysis of Table 3 we conclude that Raisio followed the goods dominant logic while Pilkington behaved according to the service dominant logic.

Discussion

Above we have reported on two licensing agreements. As shown the licenses were implemented and managed very differently. More precisely in the Pilkington case the licensor knew well the industry and also could anticipate the potential consequences of the innovation. Eventually Pilkington licensed float technology (Barker, 1994). Lord Harry Pilkington, the chairman of Pilkington, described certain key aspects of the resulting strategy as follows:

"We had the great benefit of time to decide upon the strategy (the development of float glass took seven years). A great deal was said about ethics: that it was not our job to deliberately deny any existing glass competitor the opportunity of living in competition with us. I don't think we were shortsighted or rapacious... There was a great deal of investment worldwide in plate (glass), and people needed to have time to write off this plant or convert over. The alternative was chaotic disruption of a great industry." (in Quinn, 1977:13):

Ethical concerns were also seriously taken into account. This meant that Pilkington would be a service company providing licenses. In the Benecol case there were high expectations on the innovation. The expectations were visible in the stock price of the company. Totally new matters, such as high expectations, a new functional food segment and global market potential made the situation for Raisio challenging. The question was how to exploit Benecol.

As addressed above building on tight formal co-operation and restricting the use of complementary resources as apparently Raisio did with Benecol, is very difficult to pursue success as clearly demonstrated in Figure 2. Cooperation was created at the top management level. The lower lever people, such as product managers from Raisio did not know McNeil salesmen. A US salesman could easily change the product he sells if the status of the product (FDA approval for Benecol) is pending. It was also easy for them to deal with familiar product managers within their own organization. More over the licensor McNeal and its parent company Johnson & Johnson was well known for its R&D. Very easily NIH (not invented here) syndrome may affect the dealing of the Benecol. Finally Benecol did not achieve a sustainable position in the US markets. Raisio and McNeal apparently generalized Raisio's good marketing experience from Finland to the US (and worldwide) and overlooked the dramatic differences in the situations and contexts. In Finland the Benecol margarine moved via central wholesalers to consumers as normal foodstuff while in the US it was sold as health related products.

The formal agreement prevented communication between parties to become a process characterized by dialogue, asking and answering questions. (Vargo and Lusch 2004) The message to stakeholders was: do not bother; this is our business. McNeil had a sole right to use the Benecol trademark and patents in the US. When the agreement was signed stock analysts made another "market research". Because of the good results of the second "market research" the stock price of Raisio skyrocketed again. However, still nothing was known about the consumer behavior and not a single Benecol product was sold in the US.

In 1997 the US antitrust authorities approved the co-operation between Raisio and McNeil, but FDA's reaction was still unknown. In a formal co-operation the top management gives the orders of the co-operation to the lower organizational levels, which might have lead to organizational problems. If the co-operation given by the top management does not work (in the Benecol case no permission from the FDA or not enough demand) already at the beginning hungry and short term oriented US salespersons tend to switch to other products of McNeil.

The main purpose of this article has been to examine whether the idea of service-dominant and product- dominant logics may contribute for explain success and failure in licensing. The Benecol case was a failure while the float glass case was a success. As we saw from the comparison of the cases (Table 3) learning, collaboration, flow of information and joint understanding of the market are very important in successful licensing. Raisio operated mainly in the domestic market. It had no experience in the global food business. High expectations (derived directly from the stock price of Raisio) of the Benecol created the licensing logic based on high sales of ingredient for Raisio. This should be handled neatly with one transaction only by a world wide exclusive license. However, the licensee must be have a global presence and thus, be a large firm compared to Raisio. Large firms also have objectives also in their licensing agreement and thus, they are tough negotiators. This lead to that Raisio was equipped (invested in plants) to sell goods, the customer (the licensee) was isolated (no contact to licensee's customers), the contract was formal and tight (no market information, no learning of the industry). This reflects an underlying goods – dominant logic.

Pilkington on the contrary was an international company. It knew the industry (both flat glass and safety glass) very well and started to co-operate with their existing competitors and licensees. Pilkington was a family owned company and had no pressure from the stock market. They carefully taught about the licensing services they offer. They co-created value with the licensees. They saw the licensees (customers) in context (safety glass manufacturing and the car industry) of their own networks. Based on our case analyses service dominant logic may better than goods dominant logic promote successful licensing implying:

- assist customers in their own value creation processes; use lead users, give training
- use cross-licensing, share co-specialized complementary assets
- look customers in context of their own networks
- be technology wise one step ahead of your competitors

The change in perspective from G-D logic to S-D logic may be compared with Lewitt's (1960) seminal distinction between selling and marketing. According to Lewitt selling focuses on the needs of the seller while marketing on the needs of the buyer. Selling is preoccupied with the seller's need to convert the product into cash, marketing with the idea of satisfying the needs of the customer by means of the product and the whole cluster of things associated with creating, delivering, and, finally, consuming it.

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Appendix

Pilkington licensing policy (Wierzynski 1968, pp. 122-3)

“Pilkington decided to place limitations on the number and scope of licenses that it would grant. Licenses would go only to existing fiat-glass manufacturers, and under the license each would be free to convert only its existing plate capacity to float. If a plate-glass maker wanted to build new plants in countries where it did not previously manufacture, it would have to negotiate separate agreements. Furthermore, a licensee's export rights were limited to areas where the company had traditionally exported. Pilkington thus preserved the competitive status quo, while fencing off for itself areas of the World where the growing demand from auto makers and builders might soon make a float plant economical. Canada is already a case in point. While

Ford produces more than enough Float glass in the U.S. to equip its Canadian-built cars, it can export only a small portion of its surplus to Canada, since Canada is not one of its established export markets. Ford's Canadian automotive plants must buy glass from the \$30-million float plant completed by Pilkington in Scarborough, Ontario, last year.

All licenses run for sixteen years. During the life of the license, Pilkington passes on to its licensees all the improvements it makes in the process — whether patentable or not. The licensees in turn inform Pilkington of all the improvements they make. Pilkington distributes to all licensees the nonpatentable improvements it receives, but keeps for itself the patentable innovations. Each licensee, however, is free to sell to other licensees its patentable improvements.

It is an ingenious arrangement. The free exchange of know-how among licensees and licensor enhances the value of the patent and makes Pilkington richer. The right of each licensee to sell its patentable improvements to others is a powerful spur to further development. And the provision that only Pilkington receives all the inventions made by others ensures that the company will lie technically ahead of its competitors when the licenses run out; it will be the only company to have received all the research done on float. Also, by encouraging licensees to conduct research on float, Pilkington is diverting their resources from work on a rival process. The licensees have already patented about ninety inventions; Ford, for example, has developed a special graphite lining for the float bath, designed to maintain thermal homogeneity in the molten tin.”