

COLLABORATIVE SUPPLY NETWORK MANAGEMENT IN THE COMPETITIVE ENVIRONMENT OF THE MUSIC INDUSTRY - AUTONOMOUS CO-OPERATION AS AN ORGANISATIONAL PRINCIPLE IN NON-PHYSICAL PRODUCT LOGISTICS

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ABSTRACT

This paper intends to show possible contributions and associated limitations of modifying the licensing processes within the supply chain management of non-physical product logistics in the music industry in order to prevent them from being inefficient. The theoretical concept of co-competition is used to identify complementary inter-relations between involved actors and the organisational principle autonomous co-operation to realise the resulting potentials to increase the whole market volume for non-physical music products.

INTRODUCTION

Whereas the sales of physical music products (e.g. CD or Vinyl) have declined at nearly 40 per cent during the last decade in the German music market, the sector of non-physical music products (e.g. mp3 or streams) grew continuously with annually growth-rates up to approximately 40 per cent (Bundesverband Musikindustrie e.V. 2008). Therefore, non-physical supply chains gain in relevance for the logistics management of record companies (Graham et al. 2004). In order to be capable to compete with Internet piracy sources, an area of conflict emerges from necessities to on the one hand co-operate and on the other hand compete with each other at the same time. This lead in the recent past to inefficiencies in the licensing processes between record companies and online-retailers (e.g. Cordes 2008). Therefore, the question that will be addressed in this paper, is how these licensing processes within the supply chain management of music industry corporations can be modified in order to prevent the market from future inefficiencies and to exploit the full potentials resulting from the possibilities to distribute non-physical music products over the Internet.

The aims of this paper are threefold: On a descriptive level, non-physical product logistics in the music industry shall be presented and the concepts of co-competition (Nalebuff, Brandenburger 1996) as well as the organisational principle autonomous co-operation (Windt, Huelsmann 2007) shall be outlined in order to afford a praxeological as well as a theoretical basis for the further analysis. On an analytical level, on the one hand the cause and effect chains between current licensing processes and their inefficiencies shall be analysed. On the other hand, contributions and limitations for applying the organisational principle autonomous co-operation in the licensing processes of record companies shall be deduced. Finally, on a praxeological level, an organisational alternative and associated limitations for the design of licensing processes shall be derived.

Therefore, the paper proceeds as it follows: After giving a short introduction (Section 1), characteristics of non-physical product logistics will be described and associated inefficiencies that result from long-lasting licensing processes will be illustrated. This corroborates the need for alternative approaches in current licensing processes. Furthermore, the concept of co-competition will be introduced and transferred into the context of non-physical product logistics in the music industry. This outlines the potentials that can emanate from co-operative strategies of competitors (Section 2). Following that, the organisational principle autonomous co-operation will be presented in order to discuss its potential contributions as well as its limitations for applying it to the supply chain management of non-physical product logistics (Section 3). Finally, the

results will be subsumed and implications for the non-physical supply chain management of record companies as well as for further research will be deduced.

COOPETITION IN SUPPLY CHAIN MANAGEMENT OF NON-PHYSICAL PRODUCT LOGISTICS

Non-physical Product Logistics

The management of supply chains includes not only the planning, steering and control of flows of material and services, but also of informational and monetary flows (Hahn 2000). It has to integrate all business activities that are involved in the single value-added-steps of the development, creation and exploitation of products or services (Cooper, Lambert & Pagh 1997). These processes are usually distributed among several different companies, institutions or other actors. From a system-theoretical perspective they can be regarded as sub-systems or elements within a larger network (Krieger 1998). In order to add value to a product or a service, they have to interact with each other (Cooper, Lambert & Pagh 1997). This includes the exchange of resources like information and monetary flows.

The supply chains in the music industry have changed significantly during the last decade (e.g. Graham et al. 2004; Kusek, Leonhard 2005; Gersch, Avaria 2007). A still ongoing trend in consumers' preferences from the purchase of physical to non-physical media products can be observed (Bundesverband Musikindustrie e.V. 2008). Therefore, the physical supply chain in the media industry becomes less and less important (Graham et al. 2004). Instead, with an ongoing increasing market share of digital, non-physical media products that can be distributed over the Internet, informational and monetary exchanges gain in relevance in the supply networks of the media industries. Due to a diversity as well as a variety of formats (e.g. mp3, wma, stream with or without constraints²) and associated business models (e.g. pay per track, subscriptions, advertising financed streams or downloads) (Cordes 2008) the information exchange processes, which means the licensing processes³ between involved actors (e.g. record companies and online-retailers), are much more complex than in the media industries' physical supply chains.

Inefficiencies in Non-physical Supply Networks of the Music Industry

However, the recent past has shown, that long-lasting negotiations in licensing processes can lead to inefficiencies in the market (e.g. Cordes 2008; Gersch, Avaria 2007; Renner 2004). In terms of a general understanding of efficiency measured by the relation between inputs and outputs (Wolf 2008), this means that shorter licensing processes might have led in the end to greater profits.

This can be illustrated by the development of distribution standards in the music industry over the last decade since the emerging of the Internet. It took the music industry nearly 5 years since the start of the first p2p-system⁴, to provide consumers who demanded non-physical media products a legal alternative to illegal sources with a possibility of choice, which ranges over artists from all major labels⁵ (Cordes 2008). Instead, they „[...] tried for years to develop technical platforms for digital distribution themselves, but major companies hesitated to sell their music through a platform owned by a rival" (Porter 2008), p. 90). Finally, with Apples iTunes Music Store a new actor from outside the industry entered the market and advanced to a powerful player (e.g. Porter 2008; Gersch, Avaria 2007). Since then, the download market increased constantly with high growth rates (Bundesverband Musikindustrie e.V. 2008). The big record companies' licensing strategies were characterised by restrictive and observant

² e.g. digital rights management (DRM) (Buhse, Guennewig 2005)

³ Licensing describes the specific arrangements concerning the rights for retailers, to use, in terms of producing and selling, products that they do not own (Mordhorst 1994).

⁴ P2P describes so called peer-to-peer systems, which can be used to share and distribute files over the Internet (Becker, Clement & Schusser 2005).

⁵ The term major labels describes the current biggest record companies (Universal, Sony, Warner, EMI), which hold a worldwide market share of more than 80 % (Steinkrauss 2005).

behaviour (e.g. Altig, Clement 2005; Emes 2004), which significantly extended the length of licensing processes to new business models for retailing non-physical music products. Not until the year 2009 all four major record companies resigned the technical constraints, non-physical music products should be equipped with when being sold over the Internet (Wellinger 2009).

However, in order to develop their full potentials, non-physical music retailers need to be able to provide a preferably high possibility of choice with preferably little constraints (Kusek, Leonhard 2005). The main reasons are twofold: First, the range of artists consumers buy products of, does usually span artists from different record companies (Clement & Schusser 2006; Renner 2004; Kusek, Leonhard 2005; Cordes 2008). Secondly, with an increased convenience of piracy an unlimited choice of music for free without any constraints like DRM-systems emerged (e.g. Blackburn 2004; Becker, Clement & Schusser 2005; Raschka 2006; Emes 2004), which can be seen alongside a relatively low risk to be prosecuted (Becker, Clement & Schusser 2005). As these aspects decrease the attractiveness of legal music downloads compared with illegal alternatives, the market for non-physical music products did not grow as fast as it could have grown (Cordes 2008), while the physical sector was declining further drastically (Bundesverband Musikindustrie e.V. 2008).

In order to meet these requirements the supply chain management of non-physical music products need to extend its perspective from interactions between actors along the chain (e.g. record labels, distributors, retailers) to interactions between the competitors. According to Nalebuff and Brandenburger *„creating value, a bigger pie, is fundamentally a cooperative activity involving customers and suppliers that a company can't establish alone. On the other hand, the act of dividing up the pie is fundamentally competitive"* (Nalebuff, Brandenburger 1997; p. 28). As this is a combination of co-operation and competition, this is called in the literature coopeitition (Nalebuff, Brandenburger 1996).

Concept of Coopeitition

The concept of coopeitition was introduced into the management literature by Nalebuff and Brandenburger (1996). It has been derived from a game-theoretical basis and refrains from the assumption, that in order to „win a game“, somebody else has to „lose“. Instead, the focus lies on the question how to create „a bigger pie“. How the pie will be divided later on is determined by the concept of added value, which estimates the size of the pie when a player is in the game, subtracted by the size of the pie when the player is out of the game (Nalebuff, Brandenburger 1997).

First of all, the relevant players in the business environment, which are acting in the so-called value net, have to be identified. A distinction can be made between the business that is regarded, its customers, competitors, suppliers and complementors (Nalebuff, Brandenburger 1996). A complementor is a player whose product or service increases the value that customers perceive from a second player's product. A competitor, in contrast, is a player whose product decreases the value that customers perceive from a second player's product. Players can have more than one single role, which means, that a competitor of a player can also be his complementor, and the other way round (Nalebuff, Brandenburger 1997). Following this logic, it can be reasonable for companies to approach strategies that foster the sales of their competitors in order to increase the value that consumers perceive of buying their products. This can be achieved by co-operation between competitors with the aim to increase the market volume for non-physical music products. Hence, the following question arises: Which aspects hinder the music industry to exploit the full potentials that result from the use of the concept of coopeitition?

Coopetition in Non-physical Supply Networks of the Music Industry

If record companies would ask, what they could do in order to increase the attractiveness of buying non-physical music products instead of downloading them from piracy sources, independent from which record companies' sales should be increased, they might come to different results than if they ask what they could do to increase just their own sales. The reason for this can be found in the above-explained necessity to enable online retailers, independent from their business models and the sold formats, to provide a preferably high possibility of choice. More specific, the attractiveness for consumers to buy non-physical music products from an online retailer increases with every single additional record company that provides their music products to the respective retailer. The same applies on a macro-level: The general attractiveness to buy non-physical music products instead of downloading them from illegal sources increases with every additional participating record company. This shall be illustrated by one example: Providers and consumers in China do not have to expect prosecutions for infringement of copyrights (Montgomery 2005). This is the main reason why on the one hand domestic search engines that provide links to illegal music download sources obtain much bigger market shares than search engines like Google, which do not provide illegal content (Barboza 2009). On the other hand, the by far biggest share of music downloads in China is not licensed by their owners, the record companies or artists (IFPI 2008)⁶. With the idea to launch a free of charge music download service at Google's search engine, which lets the record companies take share in Google's advertising revenues (Barboza 2009), Google and the record companies became complementors. The value that consumers perceive of using Google's search engine increases by the possibility to download music of the record companies at Google for free. And consumers that use Google for music searches instead of illegal sources of other search engines increase the revenues of the participating record companies. Furthermore, not only Google and the record companies are complementors, but as well the record companies for each other. By participating in Google's free of charge service, the possibility of choice for consumers and therewith the attractiveness of the whole service, including downloads from competing record companies compared with illegal sources, increases. Figure 1 illustrates the respective value nets for the example.

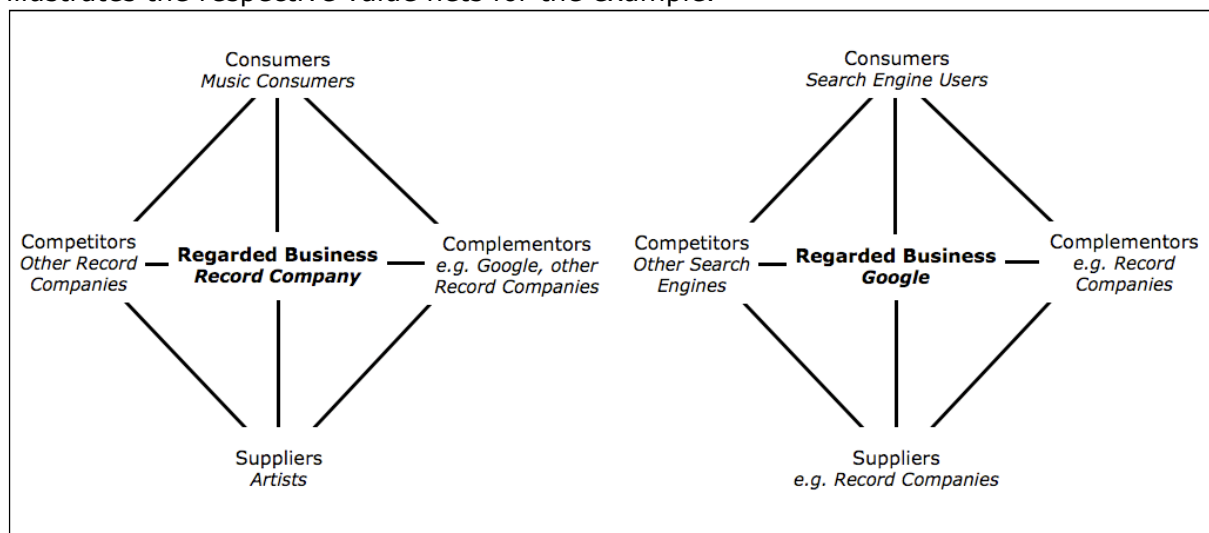


Figure 1: Example of Value Nets of Record Companies and Google (On the basis of Nalebuff, Brandenburger 1997; p.30)

On the basis of the added value concept, the particular amount, with which the whole market volume for non-physical music-products would increase, if a certain record label decides to join in and to provide their respective music products to the online-retailers has to be estimated. In the example and from the perspective of the record companies, the questions have to be asked: How much more attractive is the search engine Google,

⁶ The international inter-trade organisation of the music industry IFPI estimates an online piracy rate of more than 99 per cent in China (IFPI 2008).

how can that be measured, and how much more revenues would the competing and as well participating record companies gain, if we participate?

These kinds of co-operation between retailers and record companies require on the one hand informational as well as monetary flows along the supply chain. This means in the example that Google has to negotiate with every single record label. On the other hand, informational flows on a horizontal level, which means an exchange between competitors, is as well necessary in order to be able to evaluate the expected utilities of a participation. Considering the described multitude of new business models and new formats in the market for non-physical music products, a multitude of informational and monetary flows between the involved actors has to be accomplished by the respective supply chain management. The resulting complexity of negotiating processes that are necessary before an opportunity that arises from inter-relations between all the involved complementors can be availed leads to the risk of long-lasting licensing processes and therewith of overall inefficiencies in the market for non-physical music products. Hence, the question arises, how a supply chain management of record companies can cope with this complexity in order to shorten these licensing processes and therewith to increase the potentials that might emanate from suchlike opportunities. One concept that has been discussed in the logistics management literature as a possible approach to cope with complexity in international supply networks is the organisational principle autonomous co-operation (e.g. Huelsmann, Grapp 2005; Windt, Huelsmann 2007).

AUTONOMOUS CO-OPERATION AS AN ORGANISATIONAL PRINCIPLE IN THE SUPPLY CHAIN MANAGEMENT OF NON-PHYSICAL PRODUCT LOGISTICS

Autonomous Co-operation as an Organisational Principle

The origins of the organisational principle autonomous co-operation can be found in self-organisation-theory (Huelsmann, Wycisk 2005). Its main goal is to enable systems to cope with complexity and dynamics (Windt, Huelsmann 2007). According to Windt and Hülsmann autonomous cooperation describes „[...] processes of decentralized decision-making in heterarchical structures. It presumes interacting elements in non-deterministic systems, which possess the capability and possibility to render decisions independently“ (Windt, Huelsmann 2007; p. 8). Decentralised decision-making means thereby that the single system's elements (human as well as non-human elements) are enabled to select between different action alternatives by them selves (Frese 1993). Decisions can therewith be rendered without the need to consult a hierarchically super-ordinate entity (Windt, Huelsmann 2007). Autonomy refers to the elements' resulting abilities to decide upon their next steps on their own (Probst 1987). However, in order to render decisions independently from external entities, the elements need to be able to gain access to resources like relevant information. Therefore, the system's elements have to be able to exchange these resources; in other words, they have to interact with each other. An essential pre-condition for these characteristics is an, at least to a certain degree, heterarchical order of the system. In a 100 percent autonomously controlled system, this would mean that no element has a super-ordinate decision-making power. In logical consequence, an impossibility would arise to predict future system states (Windt, Huelsmann 2007), which refers to the term non-determinism (Flaemig 1998).

Hence, with recourse to the aims of autonomous co-operation, which include the increase of a system's ability to cope with complexity, the question arises, if an increase of the degree of autonomous co-operation would lead to a decrease of the described inefficiencies in licensing processes.

Contributions and Limitations of Applying Autonomous Co-operation in the Supply Chain Management of Non-physical Product Logistics

From a system-theoretical perspective (Krieger 1998), the involved actors in licensing processes can be regarded on the one hand as the involved organisations (e.g. record companies, retailers). On the other hand these organisations can be regarded as

systems themselves, which allows breaking this perspective down to single decision-makers within these organisations (e.g. digital sales manager).

Increasing the degree of the constitutive characteristics of autonomous co-operation leads to an increase of the respective system's overall decision-making capacity (Huelsmann et al. 2007). This results from the delegation of decision-making power from a central planning unit to the single entities (Windt, Huelsmann 2007). Notwithstanding, their respective single processing capacities might be lower than a central planning unit's one, but with a sufficient amount of participated entities the accumulated overall information processing and decision-making capacity would be significantly higher (Huelsmann et al. 2007). In consequence, this would contribute to realise the potentials resulting from cooperative inter-relations. An increase of interaction, which means the exchange-processes of information between single actors of different organisations, would accelerate the process of identifying actors that can be seen as complementors and which ones as pure competitors. Once, complementors have identified each other, the added value of a participation in a cooperation has to be estimated. However, the large amount of inter-relations of different aspects that determine the respective added values leads to an impossibility to predict or to measure them in an inter-subjective comprehensible way. Due to the resulting uncertainties concerning the respective single utilities of participation, negotiation processes between complementors are necessary. In systems with a low degree of autonomous co-operation, the external control entities of the involved organisations (e.g. the respective CEOs) need to render most decisions in most negotiation processes in most inter-relations between complementors by their own. Compared to this, the time that is needed to come to agreements between complementors might be significantly lower, if the decision making abilities are delegated to the single involved elements (e.g. digital sales manager). In other words, an increase of the needed autonomy for decentralised decision-making might shorten the lengths of licensing processes in the supply chain management of non-physical product logistics. A pre-condition for this kind of delegation of decision making powers is on the one hand the overall agreement within the involved organisations to reduce hierarchies, which in reverse increases the heterarchical characteristics of the whole network. On the other hand, it has to be accepted that this would decrease also the possibility to predict future system states, which means accepting a non-deterministic system-structure (Windt, Huelsmann 2007).

Beside these potential contributions, some limitations accompany this approach. The top-management of involved organisations would forfeit the control of licensing processes by delegating control to employees. Additionally, it is not assured that the respective employees have the needed competencies to estimate and evaluate the particular added values of a participation in a cooperation. This affects their individual capabilities to render preferably rational decisions, which might lead also to inefficiencies in licensing processes. Therefore, this aspect is one essential barrier for increasing the degree of autonomous co-operation since it would be necessary, to train the respective employees in order to assure that all system elements that are able to decide on their own are equipped with the needed competencies. Furthermore, it is also not assured that the respective employees do not decide with regard to their own personal aims, instead of with regard to the overall aims of the respective organisation. In this case, inefficiencies in licensing processes could as well not be avoided.

CONCLUSIONS

The super ordinate aim of this paper was to analyse possibilities and limitations for modifying licensing processes of non-physical music products between record companies and online-retailers in order to exploit the full potentials that result from distribution possibilities in the Internet. One possibility to exploit these potentials is to co-operate with actors that can be regarded as complementors. However, processes of identifying these complementors, estimating associated added values of a participation in a co-operation and negotiating with each other can lead to long-lasting licensing processes

between record companies and potential online-retailers, which, in turn, lead to market inefficiencies. One possible approach to shorten these processes is to increase the degree of autonomous co-operation in the supply chain management of non-physical product logistics. This would increase the overall information processing as well as decision-making capacities, which might affect the efficiency of licensing processes positively. However, some restrictions are associated with the delegation of decision-making power to single elements in the supply network. Hence, the supply chain management of non-physical product logistics should consider an increase of autonomous co-operation in their licensing processes, but should be aware of doing so without equipping the single deciding elements with the needed competencies. Therefore, further research is required on the one hand concerning possibilities to evaluate individual degrees of autonomous co-operation with regard to the individual competencies of the involved actors in order to find the individual optimum degrees for the constitutive characteristics. On the other hand research is required concerning possibilities to equip single systems' elements with the needed competencies to render decisions themselves. Furthermore, empirical research would be necessary in order to proof the validity of the findings.

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