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# Online Content Syndication - A Critical Analysis from the Perspective of Transaction Cost Theory

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# ONLINE CONTENT SYNDICATION – A CRITICAL ANALYSIS FROM THE PERSPECTIVE OF TRANSACTION COST THEORY

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## ABSTRACT

*Substantial economies of scale in the production of information goods give reasons for considering the outsourcing of the production. The trade in information goods – resulting from the outsourcing of the production – is a typical transaction which can be analysed using transaction cost theory. Taking into account the particular characteristics of information goods and the process of delivering them through digital networks, three out of five sources of transaction costs can be identified which are most relevant for the outsourcing decision. In designing the transaction process, these sources (bounded rationality, opportunism and uncertainty) can be influenced by the transaction partners in order to reduce market-based transaction costs. Employing an intermediary can further reduce transaction costs resulting from bounded rationality and uncertainty but can (overall) also give rise to opportunism. We find that opportunism is the most relevant source of transaction costs if an intermediary is employed on the market for information goods.*

## 1. INTRODUCTION

*Content Syndication* describes a familiar way of generating income in the media industry. According to this concept, content is created once and then multiply sold to different customers for commercial re-use [Anding/Hess, 2001: 4]. Examples include newspaper comic strips, columns and common TV-series. Recently, the concept became increasingly popular in the online media sector, which is using the fast internet infrastructure to publish already created digital content on different websites, in intranets or newsletters. After a first enthusiasm and naïve approaches of media companies and start-ups to utilise the new business model, a thorough economic analysis is needed in order to assess the viability and potential of online content syndication. Explanatory approaches can be found in

organisational theories, of which the transaction cost theory is one of the most important and fruitful. Transaction cost theory has already been applied widely for organisational problems on the basis of the changed role of information as a production factor [Choo, 1991]. In the paper on hand we examine the role of transaction costs for organisational problems when information becomes the product itself. Further, the paper outlines possible courses of action which the participants in online content syndication should follow in order to minimise transaction costs. In chapter 2, we introduce online content syndication and transaction cost theory and specify particularities of transaction costs occurring in content syndication. In chapter 3 we analyse transaction cost sources in bilateral content exchange between originator and publisher and reveal transaction cost sources with most significance. Chapter 4 describes how intermediary institutions affect these most significant transaction cost sources. Concluding remarks are given in chapter 5. Altogether, the paper provides a theoretical analysis of the subject and does not take into account empirical research. However, the analysis on hand complies with empirical findings of failed and successful content syndication business models (like the case of iSyndicate, Inc.).

## 2. BACKGROUND

### 2.1. Online Content Syndication

The term *content* is used quite vaguely in theory and practise while an elaborate economic definition is still missing. The word is often used overlapping with or in connection with the term “information good”, implying that content can be sold as a good on a market. In theory, definitions rank from “information essentially is everything that can be digitised” [Shapiro/Varian, 1998], to (information goods are) “the smallest logical unit of information that does not exhibit technological complementarities, such as a news story, a photograph or a song” [Bakos/Brynjolfsson, 1996] and “content is usually taken to mean professionally prepared material such as books, movies, sports events, or music” [Odlyzko, 2001]. Practitioners often speak of content as “everything that is presented on a website”. The media industry uses the term more pragmatically to address “information offered as a product on the market” [Hess, 2001]. Most of these definitions omit the technical perspective of content being information which is independent from any transport media. No definition takes into account that content is always connected with copyrights (as a form of property rights). Approaching an economically sensible definition, we consider content as “an abstract term for *information and its copyrights, existing independently from transport media, that is – economically or in any other way – valuable for an audience and offered on a market*” [Anding/Hess, 2001: 3]. Content can easily be stored digitally in order to be delivered through digital networks.

The term *syndication* describes the “sale of the same good to many customers” [Werbach, 2000: 86] and has commonly been used in the media industry for long. First established in the early 20’s in the USA when syndication named the repeated distribution of movies in cinemas in order to commercialise it over again, the term has recently been applied to the re-sale of already produced (and published) content to different publishers in any traditional media (TV, radio, print, etc.) [Sedge, 2000]. Currently, with the emerging internet and the widespread use of digital content on websites, on intranets, in newsletters, etc., syndication is used in an inflationary way to describe the commercial exchange of content between originators and different publishers on the internet. We term this recent development *online content syndication*, characterising the transition of the traditional syndication concept to the online media sector. Using the internet as an infrastructure for content syndication does not only effect the speed of the content delivery but also the syndication concept as a whole. We no longer speak of syndication only as a re-use of content at *different times*, but also by different publishers at the *same time*.

We should add by way of explanation that online content syndication can either take place directly between originators and publishers (1) or by employing an intermediary (*Content Syndicator*) (2). Figure 1 visualises this distinction.

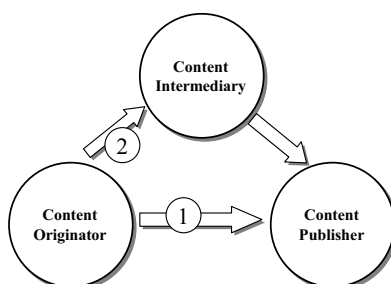


Figure 1: Different organisational arrangements for online content syndication

Online content syndication predominantly involves the recurring delivery of information products according to a pre-defined scheme. Examples are given by comic strips published daily or weekly in different newspapers. However, depending on the specificities of the exchanged information product, also nonrecurring delivery is possible.

## 2.2. Transaction Cost Theory

Transaction cost theory is embedded in the framework of the new institutional economics, comprising three other theoretical approaches, which are *property rights theory*, *contract theory* and *principal agent theory* [Picot/Reichwald/Wigand, 2001: 46; Krause, 1996]. Transaction cost theory can generally be applied for problems which can be represented as contract-problems [Picot/Dietl, 1990: 182; Rüdiger, 1998: 34], where two or more parties are involved. The most important application is the decision problem of *make-or-buy*, i.e. the decision between hierarchical integration and market-based organisation of the production [Picot/Dietl, 1990: 182] – as an explanation for the existence of firms. Further, transaction cost theory is applied for decisions on the organisation of markets, namely the *employment of intermediaries* within the process of market transactions [Sarkar/Butler/Steinfeld, 1995] as well as for the design of inter-organisational co-operations. A transaction is defined as the transfer of property rights [Picot/Dietl, 1990: 178; Picot/Reichwald/Wigand, 2001: 50], whereas property rights are the rights of individuals to the use, alteration, income and transfer of resources [De Alessi, 1990: 8; Picot/Dietl/Franck, 1999: 55].

Transaction cost theory was introduced by COASE [1937], who analysed *why firms exist, what determines the number of firms and what firms do*. He found, that the theoretical interest in this subject was surprisingly rather small up to this time. COASE spoke indirectly of the *cost of using the market mechanism* for exchanging goods and services, without explicitly using the term *transaction cost*. Later, WILLIAMSON developed an elaborate framework of transaction cost theory, based on two assumptions of human behaviour (*bounded rationality* and *opportunism*) and three key dimensions of transactions (*asset specificity*, *uncertainty* and *frequency*) as the basic sources of transaction costs [Williamson, 1975].

Bounded rationality results from human (i.e. decision maker's) limits on cognitive capabilities and imperfect information [Simon, 1957; Selten, 1998]. Simon defines economic actors as "*intendedly* rational but only *limitedly* so" [Simon, 1961: xxiv]. Thus, humans are inclined to make erroneous decisions. Opportunism describes the human self-interest in taking actions, including cheating, lying and infringing contracts [Williamson, 1993: 458]. Asset specificity terms the significance of certain assets that support a specific transaction. These are assets which cannot be transferred to or used within other transactions [Williamson, 1981: 555]. WILLIAMSON mentions four types of asset specificity: *site-*, *physical assets-* and *human asset specificity* as well as *dedicated assets*. Uncertainty is embodied in any kind of future action and frequency describes how often a specific transaction takes

place. The magnitude of these five parameters determines the scale of transaction costs occurring. Typically, the frequency of a transaction lowers transaction costs due to economies of scale, while all other four parameters have an increasing effect – whereby asset specificity carries most influence [Williamson, 1981: 555]. Figure 2 shows a synopsis of the transaction cost sources mentioned above and assigns these sources to transaction partners and the transaction itself.

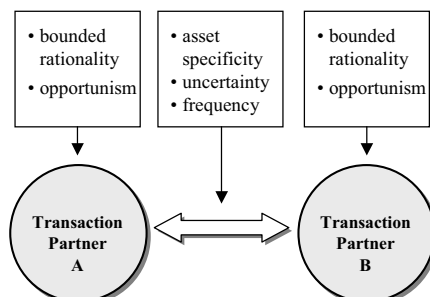


Figure 2: Sources of transaction costs

According to the process of executing a transaction, different components of transaction costs can be identified. COASE distinguishes between costs of „discovering what the relevant prices are” and the “costs of negotiating and concluding a separate contract for each exchange transaction” [Coase, 1937: 21]. PICOT/REICHWALD/WIGAND perceive in more detail costs of *initiation, agreement, execution, monitoring* and *adjustment* [Picot/Reichwald/Wigand, 2001: 50].

Transaction costs vary among different organisational arrangements and can be distinguished into internal (within a firm) or external (on the market) transaction costs. According to COASE, this fact determines the existence of firms – in cases where external transaction costs on the market exceed internal costs within the firm. “Within a firm, these market transactions are eliminated and in place of the complicated market structure with exchange transactions is substituted the entrepreneur-coordinator, who directs production” [Coase, 1937: 19]. In fact, not only the transaction costs but also the production costs vary among different organisational arrangements. Thus, the sum of production- and transaction cost is the criterion for which organisational arrangement, either market or hierarchy, is efficient. Transaction cost theory regularly assumes production costs being equal for both organisational arrangements.

### 2.3. Content Syndication and Transaction Costs

Transaction cost theory was introduced independently from the actual product as the subject of the transaction. However, a transaction can be realised the more efficient the better the characteristics of the organisational arrangement match the requirements which result from the characteristics of the transaction and the transaction partners [Rüdiger, 1998: 33]. In the scope of this paper we will discuss characteristics of information goods and the content syndication process in order to assess the sources of transaction costs and the efficiency of different organisational arrangements for the content production and -distribution. Therefore we will shortly explain the *components* of transaction costs occurring in content syndication and in section 3 and 4 of the paper we will focus on the *sources* of transaction costs (according to figure 2) in the field of content syndication.

transaction cost component	occurrence in content syndication
initiation	- search for content seller or buyer - assessment of product samples
agreement	- negotiation and contract design with focus on usage- and copyrights
execution	- one-time or recurring delivery of content - transfer of property rights
monitoring	- monitoring of content quality - monitoring of copyright infringements

adjustment	- re-definition and re-negotiation of the contract
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Table 1: Transaction cost components in content syndication

According to WILLIAMSON, “Exchanges that are supported by transaction specific investments are neither faceless nor instantaneous” [Williamson, 1984: 202]. This statement does not longer hold for content syndication, since it becomes possible that transactions are conducted by intelligent technology, automatically negotiating contracts and instantaneously creating transaction specific “investments” like DTDs and exchange protocols. This again emphasises the changes in content transactions due to the emerging digital technology and reinforces the importance of a specific transaction cost analysis for the subject on hand.

### 3. OUTSOURCING OF THE CONTENT PRODUCTION

In order to design a socio-economic relationship in an economically reasonable way, the influencing parameters (i.e. sources) of transaction costs are to be assessed and the advantageous organisational arrangement is to be chosen [Picot/Dietl, 1990: 182]. Following this procedure, we want to analyse transaction cost sources in content syndication and discuss how the transaction process can be designed in order to handle transaction costs effectively.

#### 3.1. Analysis of the transaction cost sources

##### *Bounded rationality*

Content syndication on the basis of digital networks does both mitigate and increase bounded rationality. It mitigates bounded rationality due to an electronically supported reduction in search costs and the possibility to offer product samples of digital information products at close to zero cost. Bounded rationality is increased due to a wider availability of transaction opportunities since the electronic market is not spatially limited and information goods are generally difficult to be valued (since cost based valuation is infeasible [Shapiro/Varian, 1998]). Neither does the originator know about the commercial potential of its products for the publisher, nor does the publisher know about the production cost and re-usability of the product – this complicates product valuation.

Decisive for bounded rationality in content transactions is the information paradox. Acquiring externally produced information involves the inability of evaluation prior to consumption, impeding the buyer to rationally decide between different offerings. In the case of content syndication, where the buyer does not *consume* but *commercialise* the product, content can well be assessed prior to the resale, i.e. prior to the transfer of property rights from the originator to the buyer. However, the buyer faces various offerings and cannot fully assess all information products available, especially in recurring delivery (e.g. several news stories a day), and confronts information overload. Further the commercial potential of certain information products is rather vaguely to be determined from the subscriber’s point of view (adverse selection issue).

##### *Opportunism*

Content syndication offers various options for opportunism for both the originator and the subscriber of content – particularly when their contact is based to a large extent on the internet and exhibits a high level of anonymity. The originator can take advantage of the subscriber’s experience problem by delivering poor quality content or he can deliver content in a way differing from the agreed upon delivery scheme, e.g. not in time or not in the right data format (moral hazard issue). Both, originator and subscriber can cheat on copyright agreements by re-selling exclusively delivered content to third parties. The subscriber can modify content what he might not be allowed to (i.e. he does not possess the property right of alteration). Generally, these courses of action, especially the disobeying to copyright agreements, are difficult to monitor (i.e. only at high costs) for the other party. This gives rise to opportunism in content syndication.

### Asset specificity

Asset specificity describes the extent to which parties are locked into a transaction relationship and splits into four categories [Williamson, 1981: 555; Joskow, 1991: 126]. We will discuss these categories separately in respect of the specific product and transaction process on hand.

- *Site specificity* occurs if transaction-related investments are specifically bound to a certain location. In the internet it is – at first view – only negligibly relevant where transaction partners are located since distance becomes less important and content can globally be transferred in seconds. However, site specificity occurs if the legal framework (i.e. copyright law) is taken into consideration, which often varies significantly among countries and which is highly important for the distribution of content.
- *Physical asset specificity* describes specific investments in real assets (e.g. machines) which are specifically necessary for the transaction. Digital information products are stored and transferred using standard technology (computer hardware) and – besides specifically designed programs – also standard software (e.g. standard internet protocols like TCP/IP or databases). These assets are constantly becoming less expensive and can easily be utilised for other purposes. Thus, physical asset specificity is not relevant for content syndication.
- *Human asset specificity* is highly relevant for both the production of content and the execution of the transaction. Content as an intellectual product needs specific human abilities for production (and classification) and the transaction is based on complicated contracts designed by human experts. Human investments in personal relationships and knowledge about the transaction partner (i.e. knowledge on information needs and offerings) are also important. However, contract-related human asset specificity will become less relevant in the long run as standardised skeleton contracts are developed and agent based automatic contract negotiation becomes viable. Also for supporting tasks (content classification, selection and transfer) human asset specificity is decreasingly relevant due to advancing technology.
- *Dedicated assets* are developed or acquired in order to conduct transactions with a particular partner or group of partners. Investments in dedicated assets would not be made if there was no prospect of exchanging a significant amount of a product. In the field of content syndication, these are specific technical frameworks for the standardised exchange of content (e.g. document type definitions (DTDs) for XML, or specific protocols like ICE or NITF) which are specifically used for content transactions. While ICE and NITF provide standardised protocols and don't vary among the partners using them, DTDs describe a specific data format and can be idiosyncratic for the content exchange among two partners. We conclude that dedicated assets are highly relevant for content transactions if long term relations are considered.

Table 2 summarises the findings for asset specificity and assesses asset specificity for content syndication.

Site specificity	- location not relevant for content transfer - but: relevant in respect of international copyright law → moderately relevant for content transactions
Physical asset specificity	- necessary hard- and software increasingly inexpensive - standard technology can be used for other purposes → marginally relevant for content transactions
Human asset specificity	- intellectual capital needed for content production/classification and contract design - standard skeleton contracts need less human involvement → marginally relevant for content transactions in the long run
Dedicated assets	- specific exchange protocols and document type definitions → highly relevant for content transactions

Table 2: Assessment of asset specificity

Asset specificity is usually considered to have the most influence on the issue of which organisational arrangement (market or hierarchy) is most efficient [Williamson, 1991: 284]. Thus, as the importance of asset specificity decreases, not only due to internet technology but due to the specificities of the product itself, we expect a move to the market for digital information products.

#### Uncertainty

Uncertainty is connected with and primarily results from opportunism and bounded rationality. It can be distinguished between a primary (or strategic) and a secondary (non-strategic) kind of uncertainty [Williamson, 1984: 62]. Primary uncertainty occurs because of misleading and disguising behaviour of the interactors (behavioural uncertainty), secondary uncertainty results from a lack of communication [Koopmans, 1957: 147] and unpredictable environmental conditions.

While the second kind of uncertainty is likely to decrease in pure electronic markets (due to extended possibilities for communication and a higher information intensity of the transaction), the first kind is rather increasing, since now parties are able to become trading partners whose internet-based contacts have a higher level of anonymity - giving rise to opportunism. Further, using the extended means of communication can easily be avoided by parties of the transaction (or abused for false information), thus increasing the level of uncertainty for the other party. On the other hand, quality uncertainty, resulting from the product-inherent experience problem, can be mitigated through easily available product samples.

#### Frequency

“The cost of specialised governance structures will be easier to recover for large transactions of a recurring kind” [Williamson, 1984: 206]. Transaction frequency influences the possibility to economize on transaction- as well as production cost due to economies of scale and scope. WILLIAMSON’s statement implies that low transaction frequency favours market organisation while high frequency offers economies of scale in hierarchical production. However, due to the specific cost structure of digital information goods, this conclusion has to be reassessed. High frequency of transactions allows economies of scale in both hierarchical and market organisations and generally reduces transaction costs. Since no clear statement is possible on whether high frequency favours market or hierarchy, frequency of transaction plays no decisive role [Picot/Dietl, 1990: 180].

Table 3 summarises the findings and assesses the relevance of each transaction cost source for the outsourcing decision.

transaction cost source	specificities in content syndication	relevance for the outsourcing decision
bounded rationality	- valuation difficulties for experience goods - information overload due to proliferative content offerings - commercial potential of information products unclear for subscriber	++
opportunism	- delivery of poor quality or not-agreed formats in a not-agreed upon scheme - disobeying to copyrights	++
asset specificity	- use of standard technology and standard protocols - decreasing relevance of human asset specificity in the long term	0
uncertainty	- results from high bounded rationality and opportunities for opportunism - also: high level of anonymity on electronic markets	++
frequency	- no clear statement if high frequency still necessitates hierarchical organisation - generally: less relevance of frequency due to less relevance of asset specificity	0

Table 3: Assessment of transaction cost sources in content syndication

### 3.2. Designing the content transaction

We have found that three sources of transaction costs are particularly relevant for online content syndication – bounded rationality, opportunism and uncertainty. Bearing in mind that content syndication involves massive economies of scale in the content production and is – considering



production costs – regularly preferable against in-house production, we want to analyse in a further step, which types of digital content are suited for content syndication (i.e. involve low bounded rationality, opportunism and uncertainty) and which options transaction partners have in designing the transaction process in order to reduce the sources of transaction costs.

#### *Properties and relevant attributes of digital information goods*

In contrast to physical goods, (particularly digital) information goods are costly to produce but cheaply to reproduce, i.e. they exhibit high first-copy-costs [Shapiro/Varian, 1998: 3]. Digital information goods can easily be copied without loss in quality, easily altered (customised) and transported through digital networks. Thus, markets for digital information goods don't exhibit scarcity, information goods are never consumed. Due to missing technical restrictions in copying, the enforcement of copyrights is more difficult in comparison to markets for offline media (e.g. the book market). Thus, in analysing the market for digital information goods, the consideration of copyrights is essential. Further, information goods are experience goods, their quality cannot be assessed prior to consumption. This "information paradox" causes problems for the ex-ante valuation of information goods.

In addition to these general properties, digital information goods have various attributes which are economically important and can affect bounded rationality, opportunism and uncertainty in the transaction. BALLOU ET AL. mention timeliness, data quality, cost, and value [Ballou et al., 1994] of which we consider most important the *speed of devaluation* (timeliness) and *value* (which includes data quality). Additionally relevant is the *size of the target group* as it is significant for the content value. Other attributes like *data volume* and *media richness* influence transaction costs too, but are not correlated with bounded rationality, opportunism or uncertainty. Speed of devaluation is positively correlated with bounded rationality and uncertainty, since higher speed leaves less time for gathering information on the product. Short time leaves less space for opportunism which becomes less relevant with high speed of devaluation. In contrast, high value of information goods increases the incentives for opportunism but has negligible effect on bounded rationality. A side-effect of high value goods being connected with brand names is a reduction in secondary uncertainty. As the size of the target group is one factor determining the value of a good, large size has a rising effect on opportunism, but reduces bounded rationality and uncertainty due to wider availability of information on the target group and the profit potential of the information good. Since most attributes of information goods affect transaction costs in both directions, we cannot give a general statement on which goods are suited best for content syndication. By tendency – if we consider opportunism as a factor with minor impact (i.e. if it can easily be covered by contracts or the relationship is based on trust), high value information goods for a broad target group, which are slowly devaluating, are better suited for outsourcing than low value, rapidly devaluating goods for a small target group. Considering opportunism a major factor, the correlation is vice versa.

#### *Opportunities for transaction partners*

Independently from the type of content exchanged, transaction partners have options to influence the levels of bounded rationality, opportunism and uncertainty by either modifying product attributes or the transaction process. Transaction partners have technical, economical and legal opportunities to exert influence.

- *Bounded rationality*

Economically, the experience problem can be mitigated by providing product samples or signalling product quality (e.g. through brand names). In order to reduce information overload, intelligent information systems for search- and classification can be employed which reduce search costs.

- *Opportunism*

Technically, content can be modified to prevent or track unauthorized copying or to reduce the value of a copied version. Further, using technical standards can limit the freedom of both partners to modify technical agreements. Economically, the speed of devaluation can be increased by providing new versions of the product in shorter duration. Another way of creating economic incentives against

opportunism could be revenue sharing between originator and publisher. Legal opportunities arise from copyright law and are bound to the extent to which property rights are transferred. Transaction partners can reduce opportunism by contractually defining detailed property rights for both partners. Transaction costs are reduced if standardised contract templates are used.

▪ *Uncertainty*

Strategic uncertainty, resulting from misleading behaviour of the transaction partners, can be reduced as described for opportunism. Non-strategic uncertainty decreases as contract duration increases, thus transaction partners should aim at long-term contracts.

#### 4. INTERMEDIATION IN ONLINE CONTENT SYNDICATION

Online content syndication between two parties can cause considerable transaction costs – especially during the initial phases of a transaction (particularly search costs). As the employment of intermediaries potentially reduces market transaction costs, we will focus in the following on the impact of intermediation on online content syndication.

##### 4.1. Intermediary impact on the transaction costs sources

We want to assess the impact of intermediaries on bounded rationality, opportunism and uncertainty as well as on possible new sources of transaction costs which might arise from intermediation. „An intermediary, also called a *middleman* or *broker* in the research literature in various fields, helps to facilitate transactions between buyers and sellers by providing value-added services such as aggregation and distribution of products and product information, quality checks and warranties“ [Chircu/Kauffman, 2000]. BAILEY mentions aggregation, pricing, search and trust as roles of intermediaries [Bailey, 1998: 33]. Merchant intermediaries (for a distinction of merchant and broker intermediaries see [Rose, 1999: 67]) cover a set of trade functions: *quantity function*, *assortment function*, *advertising- and consulting function* as well as *spatial, temporal and financial demand adaptation function* [Gümbel, 1985: 168; Müller-Hagedorn, 1998: 108]. In respect of information goods, the quantity function and the spatial demand adaptation function are less relevant since electronic reproduction- and transportation capacities are almost costless.

▪ *Bounded rationality*

Based on the advertising function of the intermediary, bounded rationality in online content syndication can be significantly decreased due to a reduction in the number of contacts, hence, a reduction in search costs, resulting from the Baligh-Richartz-Effect, exemplarily depicted in Figure 3 [Gümbel, 1985: 110], and due to assessment of product quality by the intermediary [Becker, 2001: 11]. It is assumed, that only one intermediary exists and transaction partners do not confront search costs to find the intermediary.

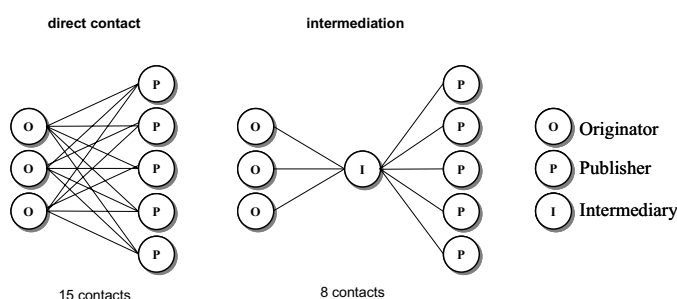


Figure 3 : Reduction in search costs through intermediation (Baligh-Richartz-Effect)

In addition to search costs, also contracting costs are reduced, since each transaction partner only has to enter one contract with the intermediary even if content is exchanged with more than one party. The

intermediary represents a single point of contact for originators and publishers whose cognitive disability to perceive and value all available information products is reduced due to a pre-valuation and categorisation by the intermediary (assortment function). The independent pre-valuation (pricing) of information products, based on the intermediary's experience and market knowledge, notably reduces bounded rationality (consulting function).

- *Opportunism*

Opportunism can be reduced through the intermediary's assortment function, providing a pre-selection of originators and publishers which reduces the risk of adverse selection. Intermediaries can act as trusted third parties (trust role), supervising the transaction and defining a framework for the design of contracts (consulting function). Besides standardised contract design, intermediaries can provide a technical platform for the content exchange, leaving few space for copyright infringements.

- *Uncertainty*

Primary uncertainty is reduced by the intermediary as it is described for bounded rationality and opportunism. Secondary uncertainty is mitigated by the demand adaptation functions of the intermediary. The uncertainties in supply and demand of single originators and publishers are alleviated – the intermediary can provide a steady level of content offerings and content demand and even out inequalities. Financial uncertainty can be reduced through financial demand adaptation, aligning the required payment schemes of originators and publishers. The intermediary can reduce financial uncertainty by taking contingency risk.

	bounded rationality	opportunism	uncertainty
assortment	↓	→	↓
advertising and consulting	↓	↓	↓
demand adaptation	→	→	↓

Table 4: Impact of intermediary functions on relevant transaction cost sources (↓=reduces, ↑=increases, →=no impact).

#### *Other transaction cost sources*

Besides bounded rationality, opportunism and uncertainty, intermediaries can also influence asset specificity and frequency. Asset specificity can be further reduced by standardisation efforts of the intermediary and a reduction in necessary specific investments of originators and publishers (standardisation of data formats can take place at the intermediary, originators and publishers can keep proprietary formats). The heterogeneity of product-representation is reduced. Intermediaries match differing demands for frequency of originators and subscribers (demand adaptation function). The frequency of transactions performed by the intermediary exceeds the frequency of transactions a single transaction partner performs without the intermediary, thus, the intermediary can better realise economies of scale.

Since the intermediary institution is prone to bounded rationality, opportunism and uncertainty, intermediation might also rise transaction costs. Bounded rationality results from the intermediary's inability to know all possible transaction partners and their content offerings and demands, as well as limitations in perfectly matching them. Further, a specialised intermediary has an information advantage over originators and publishers which he can exploit opportunistically. Uncertainty results from imperfect knowledge about the future content offerings and demands on the market as well as from the intermediary's uncertainty about the behaviour of transaction partners.

In contrast with the reductions in transaction costs due to intermediation, which directly result from the intermediation function and are not directly influenced by actions of the intermediary, the increasing transaction costs due to bounded rationality, opportunism and uncertainty can directly be affected by the intermediary's actions.

#### 4.2. Assessment of intermediation in online content syndication

We have found that the intermediary institution reduces as well as increases certain sources of transaction costs. In order to organise the content syndication transaction per intermediation in an optimal way, we have to compare cost and utility of employing an intermediary institution.

As the intermediary itself can be considered a specific asset for the transaction process, all costs occurring at the intermediary level are asset specific costs for originators and publishers. We have to compare these asset specific costs with benefits in bounded rationality, opportunism and uncertainty (as well as the less relevant asset specificity and frequency).

Reductions in bounded rationality and uncertainty due to intermediation are substantial (see Table 4) and will most probably not be outweighed by accruing bounded rationality and uncertainty of the intermediary. In contrast to that, the reduction in opportunism due to the advertising and consulting (particularly contracting) function of the intermediary must be considered moderately in comparison with additional opportunism of the intermediary institution. This additional opportunism could easily prevail. Hence, the focus should be set to *opportunism* as the source of transaction costs which could increase due to intermediation in online content syndication.

Transaction partners will employ an intermediary if reductions in bounded rationality and uncertainty outweigh possible higher opportunism, i.e. if overall transaction cost sources are reduced (assuming that the different sources equally result in transaction costs) and this overall reduction compensates the intermediary's service charges. In reality, content intermediaries charged up to 70% of the sales price which probably was a reason for the failure of many. Enforcing a reduction of the intermediary's opportunism – either technically, economically or legally – is crucial in designing the content syndication transaction via an intermediary. Thus, transaction partners have to carefully design the technical infrastructure, the economic incentives for the intermediary (i.e. the percentage of commission) and the legal framework of the transaction. Intermediaries can proactively take the position of "trusted third parties" [Schoop/List, 2001] in order to signal low opportunism.

### 5. CONCLUSION

The paper on hand analysed the sources of transaction costs in the specific field of online content syndication. The first important finding is, that not all five sources of transaction costs are equally relevant in this specific field, but bounded rationality, opportunism and uncertainty play the most significant role. Asset specificity, generally the most influential factor in transaction cost economics, is less important in online content syndication. Further analysis revealed quality and speed of devaluation as parameters of information products that affect transaction cost sources as well as technical, economical and legal opportunities of transaction partners to reduce of these sources. The subsequent analysis of intermediary impact on transaction cost sources showed that intermediaries reduce bounded rationality and uncertainty but might increase opportunism in online content syndication. The above analysis of which kind of information goods are appropriate for content syndication indicates that using intermediaries, rather low value, rapidly devaluating information goods for a small target group are suitable – as long as opportunism is a factor with major relevance. The focus on employing intermediaries should thus be set on reducing opportunism in order to broaden the scope for trade in information goods. Further research in this field should involve property rights- and principal agent theory.

However, some methodological limitations of the analysis are to be considered. The method of research can only provide tendency statements, since transaction costs cannot be quantified precisely. Transaction costs are not to be taken as the sole basis for an outsourcing decision if production costs vary among different organisational arrangements (discussed by [Williamson, 1984: 212]). This is particularly relevant for online content syndication since internal and external production costs (i.e. first- and second copy costs) vary significantly, making outsourcing profitable even if external

transaction costs are high. Besides transaction- and production costs, other effects influence the outsourcing decision. Content originators are often reluctant to provide high quality content digitally and publishers have difficulties in judging the economic value of externally acquired content. The last point is interrelated with a lack of available research on the utility-function of the content consumer.

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