

Electronic Trading in On-line Delivered Content

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Abstract

Electronically traded On-line Delivered Content (ODC) is data, information, and knowledge traded on the Internet or through other on-line means. ODC includes on-line newspapers, magazines, music, education, searchable databases, consulting, and eventually expertise ideas. This paper outlines the growing importance of ODC. It then attempts to position electronic trading in ODC within the wider field of Electronic Commerce. It identifies its distinctive characteristics compared to other forms of trading content as well as electronic trading in physical goods. Important ODC peculiarities are identified and analyzed. Based on the case of a medium-sized specialized publisher, the benefits and problems of moving into the business of electronic trading in ODC are discussed. The paper concludes with an outlook and agenda for further research.

1. Introduction

Electronically traded On-line Delivered Content (ODC) is data, information, and knowledge traded on the Internet or through other on-line means. ODC includes on-line newspapers, magazines, music, education, searchable databases, consulting, and eventually expertise ideas.

ODC as described and investigated in this paper is defined as those products that consist *only* of content and whose total value therefore can, and usually is, produced, traded, and delivered on-line.

Electronic trading in ODC represents a way of trading for which the full commercial cycle - offer, negotiation,

order, delivery, payment - can be conducted via a network such as the Internet. In addition to the issues inherent in trading physical goods on the Web, trading ODC raises concerns such as version control, authentication of the product, control over intellectual property rights (IPR) and the development of profitable intra- and inter-organizational business models.

The objective of the research is to propose a basis for further investigation into the design and implementation of business models for electronic trading in ODC.

2. On-line Delivered Content: the Core of the Intangible Economy

A major characteristic of the Internet economy¹ is its shift to the intangible. The creation and manipulation of dematerialized content becomes a major source of economic value [30]. This move to the intangible affects all sectors and activities; it profoundly transforms economic relationships and interactions, the way firms and markets are organized, and the manner in which transactions are executed. The intangible economy is not limited to the Internet though, analogue technologies such as radio and TV are also to be considered integral parts.

To some extent the intangible economy runs squarely against the conventional logic of economics. Intangible goods are not limited by physical constraints and hardly fit into traditional economic categories: they can simultaneously be “durable and ephemeral, lumpy and infinitely divisible, unique and ubiquitous, scarce and abundant” [9]. The business of purely intangible products is radically different from conventional, Electronic Commerce areas, which focus on trading - or preparing to trade - physical goods or hybrids between physical and intangible goods. Trading intangible products demands new business models and processes.

Classical economic theory does not normally address the issue of information, content, or knowledge as tradable good. The value of information is derived from reducing uncertainty. In the Internet economy however, information/content is simultaneously a production asset, a good, and a market attribute.

Economic mechanisms and impacts of the intangible economy can be investigated by analyzing three different pillars [11]:

¹ Terms with similar connotation include 'Intangible Economy', 'Digital Economy', 'Internet Economy', 'Internet Economy', 'Virtual Economy', or 'Information Society'.

- Intangible assets (*supply perspective*)

The growing importance of intangible assets and the resulting complexity can be seen in the huge differences between book and market share values explained by the crucial role attributed to brands, content and publishing rights which may emerge via, be embedded in, or be maintained by, ODC. The implied problem of pricing the value of information/content has so far received most attention in the context of managerial accounting when discussing the issues of (a) consistent value measuring and (b) the negligibility of costs for acquiring and creating intangible assets. In the rest of the paper the concept of intangible artifacts will not be further pursued. However, this perspective allows helpful insights into accounting and measuring aspects of intangible goods, and thus can well contribute to the development of business models for electronically traded intangible goods, and especially ODC. Specifically, the following two dimension are of interest:

- Intangible artifacts *for consumption (demand perspective)*.
- Logic of dematerialization (*nature of economic transactions between supply and demand and resulting market structures*).

The following focuses on intangible artifacts in general and On-line Delivered Content (ODC) as one of its core representatives. Their inherent logic of dematerialization is outlined in the context of ODC peculiarities.

3. On-line Delivered Content (ODC)

3.1. Towards a Framework of ODC

The above definition of ODC is derived from investigating the range of instances covered by Choi et al's (1997) description of the 'Core of Electronic Commerce' also termed 'fully digital business'. They differentiate three dimensions 'products', 'agents' (or players), and 'processes', which in turn are divided into 'physical' and 'digital'. The distinction between *physical and digital products* appears to be insignificant. According to Choi et al (p. 62) "anything that one can send and receive over the Internet has the potential to be a digital product." *Players*, according to Choi et al are "sellers, buyers, intermediaries and other third parties such as governments and consumer advocacy groups" (p. 17). Physical players show up in person, digital players communicate via an electronic interface. For instance, electronic shoppers are considered to be digital players. The distinction between physical and digital processes depicted on the third axis seems to be as uncritical as the product dimension. "Visiting a store is a physical process, whereas searching on the web is a digital process." [3, p. 17].

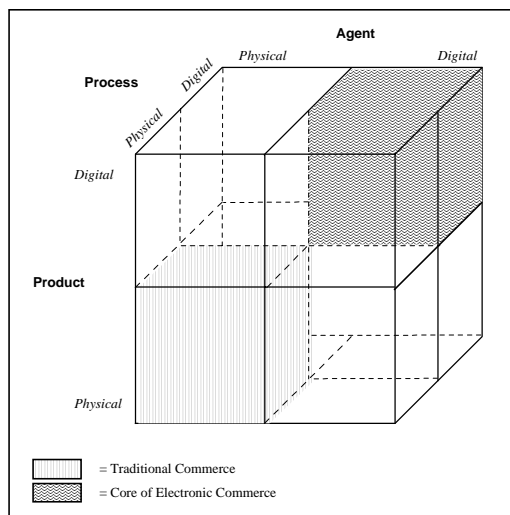


Figure 1. The Core of Electronic Commerce (Source: Choi et al 1997, p. 18)

Regarding the product dimension, Choi et al's list of examples ranges from information in general; letters, postcards, credit card information, airline or concert tickets - to 'hybrid digital products' such as smart appliances. Examples for the latter may include rather well known intelligent alarm systems, but also still futuristic intelligent tooth brushes that take a sample of one's saliva, analyses selected aspects, transfers data to a connected processor, and blinks, etc, in the instance of any unwanted bacteria etc.

In this context, the term 'digital' is clear. However, that the term 'product' needs further clarification. As illustrated below, only some of the products falling under Choi et al's definition of digital products are also ODC.

To achieve this additional clarification the, introduction of a new dimension referring to the value of the digital product is suggested. It distinguishes between 'bundled' or 'supported' and 'unbundled' or 'stand-alone' digital products. Traditionally, intangible artifacts were always bundled, i.e. embodied in some physical means. For centuries, content and support were tightly linked, with the stronger value component being on the content side. Hence, the overall products were unique or reproducible only on a comparatively small scale (e.g. a theater performance required a stage). Later, storage and replication technologies have loosened the link between content and support physical product. As a result, artifacts with identical content appear in different forms and packages, e.g. a certain song appears on many different tapes and CD-ROMs; news items can be printed, shown on television, presented on a radio network or printed in newspapers and magazines, or be distributed via an on-line network like the Internet. Thus, the importance of bundling content to physical support has decreased significantly with the emergence of the Internet. The term

'ODC', as defined and applied here, is limited to 'unbundled', 'stand-alone' products consisting just of content/information. Hence, the term ODC implies that *only* the content is the object of a transaction, no physical product needs to be shifted among suppliers, customers, or other players.

The distinction between physical and digital players is more problematic. Even if players use a software-based agent, they are still a 'physical' legal entity (person, company, or institution). On-line shoppers are also to be viewed as physical shoppers, just not located inside the store. Following Choi et al's concept, there cannot be any combination of a physical player executing a digital process; the example of the on-line shopper shows that running a digital process also makes the player to be digital. Since this still implies physical players (who may be supported by a software / digital agent), this dimension will omitted when clarifying the term ODC.

Concerning processes, this paper concurs with Choi et al's differentiation of physical and digital processes. In the following, the focus is on the entire trading cycle from production to trading and delivery and only on those 'digital' processes that are part of a complete cycle executed - or at least executable - over the electronic infrastructure. Off-line processes refer to those cases in which certain 'sub'-processes (e.g. product selection, production, market research, searches, ordering, payment, delivery or consumption) are not executed via the infrastructure.

Thus the dimensions underpinning the proposed definition of ODC are as follows. The product dimension taken from Choi et al is retained, a distinction between bundled and unbundled value of the product traded is added, the player dimension is dropped as it has no relevance to digital players, and finally the process dimension is kept, stressing that digital processes as those of which *all* sub-processes are executed on-line. Strictly speaking, the idea of unbundled values is implied in 'on-line processes' if the complete trading cycle also comprises product/value delivery. From a practical point of view, however, it is useful to stress the concept of unbundled product value separately.

Figure 2 illustrates the definition of on-line delivered content (ODC), a rapidly growing sub-field of Electronic Commerce.

The following three examples further illustrate the ODC concept.

A first example covers music. ODC refers to music that can be downloaded from the Web and afterwards, if wanted, be stored on a CD-ROM. ODC does *not* include the ordering of a CD-ROM to be delivered to one's home since - by definition - ODC refers *only* to the content and excludes the need for any physical support.

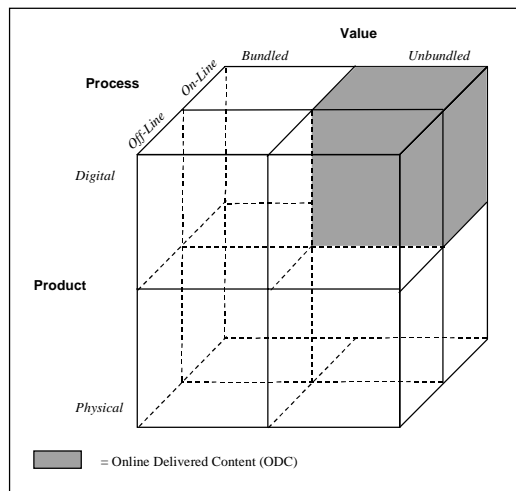


Figure 2. Concept of On-line Delivered Content (ODC)

A second example refers to databases as offered by on-line bookstores and to various kinds of content offered on Web pages maintained by TV stations. The information/content contained in those Web sites is a form of ODC, even if it is usually not separately traded [18]. Possibilities for commercializing such content could be 'pay per view', 'pay per page', or 'pay per minute' concepts. By trying to sell such content (instead of offering it for free and counting on a positive impact on other product lines such as books or TV programs), suppliers of such content could possibly determine the actual value that potential customers associate with it (regarding pricing issues and limits of cross-subsidizing, see section 4).

The third example to be mentioned - tickets to planes, trains, or concerts - is actually a counterexample. It clearly shows the difference between digital products as analyzed by Choi et al and ODC as introduced above. [3, p. 20] say "(d)igital products are not limited to information or 'infotainment' products. All paper-based products, like posters, calendars, and all sorts of tickets ... can be converted into or replaced by digital counterparts." Certainly, one can imagine ordering and receiving tickets for trains, planes or concerts on-line. In the near future, technology will allow individuals to print tickets (administered wherever), just as travel agencies or event agencies do today. However, for consumers this is not the full delivery cycle. They do not pay for the piece of paper called a ticket, but they pay for the process of 'being moved' from A to B or for the right to attend a concert/stage performance. Those services of 'being moved' or 'concert performance' are the actual values bought, and they will never be delivered via any technical infrastructure (at least not within the limits of current imagination). Therefore, a ticket, even if bought and -

with regard to the piece of paper - delivered over the Web, does not represent unbundled, stand-alone value of content. It does not belong to ODC as understood in this paper. (For simplicity reasons, in this illustration we leave out the possibility of reselling a ticket and thus giving it a monetary function.)

3.2. Positioning ODC

Tangible versus intangible goods

ODC is a particular kind of intangible good. In the literature the term 'intangibility' refers to two rather different concepts. Levitt (1981) suggests the terms 'goods' and 'services' to be replaced by 'tangibles' and 'intangibles' and hence observes that intangible products are highly people intensive in their production and delivery mode. This does not really match with a more recent interpretation of 'intangibility' aiming at immaterial goods (not services), often expressible in bits and bytes [e.g. 16]. While today most products contain intangible aspects such as know-how or brand recognition, this paper considers ODC to be a counterexample of "all products have elements of tangibility and intangibility" [16, p. 101]. ODC - by definition - has no tangible components.

Consequently, electronic infrastructure requirements for electronic trading (including delivery) in ODC are significantly higher than for electronic trading tangible goods not delivered via the infrastructure (usually the Web). However, taking into account that no physical infrastructure is needed, the total infrastructure requirements for trading in ODC are comparatively low (and independent of the distance to be bridged).

Search versus experience goods

Another common approach for clustering products is grouping them in 'search goods' and 'experience goods' [24]. The quality of search goods can be determined without actually using them, while with experience goods quality is learned from experiencing the product, i.e. from using the good. Most forms of ODC belong to the group of experience goods, the quality of content is only learned from using/consuming it. However, treating ODC as experience good, i.e. letting potential clients 'experience' ODC, implies giving the actual content away for free (i.e. not trading it) and, in all likelihood, counting on receiving revenue via some synergy mechanisms. Once a potential customer has experienced ODC, he has no more reason to buy it. Suppliers of ODC will try to solve this dilemma by shifting ODC as much as possible into the category of search goods. Possible steps for this are establishing strong brand reputation for Web sites, publishers etc., or offering abstracts, sample chapters, or reviews as triggers to buy the whole product.

3.3 ODC Classification

Before further investigating ODC characteristics and the peculiarities of trading in ODC, there is a need to look at different criteria for further distinguishing homogeneous kinds of products *within* the still rather broad category of ODC. The five dimensions for classifying digital products as outlined by Choi et al (1997) are analyzed for their relevance to ODC.

Transfer mode: Delivered versus interactive products

ODC by definition is delivered. However, the differentiation between delivered and interactive transfer mode is becoming increasingly difficult. At least as long as content consumption is initiated based on a 'pull-approach', this implies a certain degree of interactivity.

Therefore, this paper prefers to distinguish between the ODC delivered based on push and or on pull approaches, and then those ODC products delivered via pull approach can be differentiated further based on the degree of customization resulting from interactive communication. Clearly, these two dimensions are highly interdependent: Push-based delivery excludes strong customization based on interactive communication. Pull-based delivery allows for all degrees of customization.

Timeliness: Time-dependence versus time-independence

ODC may be very time-dependent (e.g. stock market information), rather time-independent (e.g. dictionary information), or somewhere in the middle, e.g. street maps for drivers, hotel information, phone numbers, etc. The criterion of 'timeliness' will be important for further identifying homogeneous packages of ODC to be traded based on consistent business models.

Intensity in use: Single-use versus multiple-use products

Similar to the previous criterion, 'intensity in use' is an important aspect for further classifying ODC. There is a significant overlap between 'timeliness' and 'intensity in use'; as only rather time-independent ODC will be used more frequently, i.e. more intensively. However, the two criteria do not have exactly the same implications for trading.

Operational usage: Executable program versus fixed document

Fixed documents delivered electronically are ODC. Executable programs would only be counted as ODC if their focus is on the content the executions provide. Typical software programs or games are not ODC. However, it may well be that a certain form of delivering content includes executable components. For instance, whenever the search function can be determined by the user, the content includes some operational features in addition to the content in the narrow sense of the word.

Externalities: Positive versus negative

The kind of externalities are a valid criterion for further classifying ODC. Externalities refer to economic consequences that are not fully accounted for by the price or market system. Positive network externalities imply that the value of the product increases the more people use it (e.g. academic papers, awareness raising content about medical innovations). Negative externalities occur when ODC has an impact on positioning the user in a zero-sum game, which means that whenever somebody gains (from consuming ODC), somebody else loses. Examples include all kinds of competitive content, as for instance for R&D-related information.

In summary, 'customization' (degree and frequency), 'timeliness', 'intensity in use', and 'externalities' are the most relevant criteria to further classify ODC in order to develop sustainable business models for trading.

4. Peculiarities of Electronic Trading in ODC

4.1. Issues of Pricing ODC

Conventional pricing and transaction mechanisms are barely suitable for capturing the economic value of ODC. The price a product is sold for normally consists of three elements: production costs, co-ordination costs, and profit margin [2]. Co-ordination costs include the transaction (or governance) costs of all the information processing necessary to co-ordinate the work of people and machines that perform the primary processes [21]. With variable production costs near zero, drastically reduced transactions costs due to information and communication technology (ICT) usage, and questionable profit margins in current business models, new concepts have to be put in place for analyzing ODC prices.

Traditionally the pricing of content has been based rather on the support - mostly measured in convenience - than on actual quality [10]. For instance, the price of a book depends heavily on its printing quality and the number of pages, while the price for an excellent book is

almost the same as for a poor one. Electronic trading in ODC implies unbundling: content can be priced separately from the support allowing for price discrimination based on the estimated value of the content. The unbundling, however, also raises problems. Administration becomes more complex and cross-subsidies between profitable and non-profitable, but nonetheless desirable content to offer, diminish.

Production costs cannot be used as a guideline for pricing since there is no link between input and output. Mass consumption does not require mass production. Economies of scale are determined by consumption, not by production. Economies of scale in ODC production are limited, economies of scale in ODC distribution can be significant due to a combination of high fixed costs of creating the necessary infrastructure and low variable costs of using it. Economies of scale in distribution are accentuated by consumption characteristics: consumers tend to use the supplier with the largest variety although they only take advantage of less than 5% of the choice.

A consumer's willingness to pay influenced by consumption or non-consumption of others; hence, it is not an adequate approach to assess the value of ODC, given the ease of replication and sharing and associated externalities. Further, it is impossible to determine whether it is worthwhile to obtain a given 'piece of ODC' without knowing its content [28].

Furthermore, the pricing of ODC raises the fundamental issue of inherent volatility of valuation when the value of ODC is highly time-sensitive (e.g. stock market information may be worth millions in the morning and have little value in the afternoon).

The range of ODC pricing schemes is getting broader and more sophisticated. Not only does the Internet provide a variety of possibilities of selling, sharing and giving away. Consumers can be charged based on the actual 'use of ODC' or based on fixed access charges. Alternatively, pricing models may imply giving actual artifacts away for free and then charging for complementary services.

Offering ODC over an extended period of time may lead to the establishment of electronic communities. Following [1], electronic communities are likely to create value in five different ways: usage fees, content fees, transactions (commissions), advertising, and synergies with other parts of the business. Translating those opportunities for income to the narrower defined 'trading in ODC', usage fees relate to fixed subscriptions paying per page or per time period independent of the quality of the content. Content fees would most likely be based on fixed amounts per page, but should theoretically tackle the issue of valuing the content (quality/relevance). Commissions and advertising income are triggered by attractive ODC displayed. Strictly speaking, however, the subsequent income would not stem from ODC, but from

attracting customers to a page regardless of its content or from offering some 'empty space' for third party advertising in addition to the actual ODC offered [18].

Economists are developing theoretical solutions to the problem areas mentioned. However, some of the mechanisms developed [e.g. 20] demand an enormous amount of data, thus questioning the trade-off between allocative efficiency and operational cost-effectiveness [23].

4.2. Impacts of ODC abundance

The dematerialization logic inherent in electronic trading in ODC runs squarely against some of the key tenets of economics; it is pervasive and ubiquitous. While conventional logic of economics is concerned with scarcity, dematerialization logic is concerned with abundance. One of the fundamental issues of dematerialization is abundance [10]

ODC is extremely cheap to replicate and not eliminated through consumption (non-subtractivity). The resulting abundance of production is followed by the abundance of accumulation leading to a dramatically expanding imbalance between supply and demand. Efficient management of the ODC over-load requires more information/content. Information about information is a growing business.

Abundance and resulting ODC-overload (huge variety of ODC available to almost everybody) confront consumers with a dilemma. They want to take advantage of the increased choice of ODC, and at the same time, they seek to minimize the costs of searching. In order to respond to the first objective, new modes of consumption have emerged: zapping, browsing, or surfing, characterized by short attention span, latency, high frequency of switching and capriciousness. The distinction between consumption and non-consumption becomes difficult, rendering pricing problems even more intractable. The expanded choice of content makes consumer choice more difficult, thus continuously raising the cost of acquiring information about the content. To minimize these cost, the choice is increasingly determined by criteria other than product characteristics, e.g. brand familiarity or fashion [10].

The traditional rationale for the existence of companies, as articulated by Coase, is the minimization of transaction costs [4, 31]. This analysis is (no longer) generally valid. Not only has ICT dramatically reduced transaction costs, also the growing volume and importance of information and communication technology based intangible assets and artifacts has changed the nature of markets [24].

While traditional inter-firm linkages may be modeled by input/output analyses to measure the economic impact of each player in an inter-organizational value chain or network, the intangible economy introduces another

linkage among companies which could be called the 'monitoring' linkage [10]. Low transaction costs lead to excessive volume of transactions that generate 'noise' rather than useful content. Abundance of products and services stimulates the development of activities whose purpose is to monitor, evaluate and explain their characteristics and performance.

5. Case of a medium-sized specialized publisher²

The following case study of Rentrop publishing analyzes the situation and the business implications of a traditional medium sized publisher at the verge of entering the business.

5.1. Overview

Rentrop Publishing (RP), headquartered in Bonn, Germany, was founded in 1975. With about 300 authors and 160 other employees, RP is one of the most important German business-focused publishers. It only disseminates content that was exclusively written for it. RP's core business is consultative journalism for entrepreneurs and individuals with entrepreneurial responsibilities. Traditionally, the company has considered printed media as the only possible means of conveying valuable know-how and consulting at fair prices. RP's product range includes magazines, loose-leaf services, newsletters, and books covering topics such as public speaking, money management, taxation and social security, human resources as well as personnel law.

The RP consulting pyramid is at the core of RP's publishing philosophy. Classical 1:1 consulting services offered by consulting companies at a cost of around DM 2000 per day are judged to be prohibitive for young entrepreneurs. Even consulting seminars with about 10 participants and costs of about DM 800 per head per day are considered too expensive. RP therefore concludes that the only affordable possibility for a start-up company to obtain appropriate consulting services is by buying a specialized publication (published consulting) where the total cost for the expert advice is shared by a rather large number of interested parties [see also 12].

Over the last 20 years, RP has achieved rapid growth by pursuing expansion on the basis of a holding-structure organization. This allowed the development of an internationally operated publishing and media group from the core business of being a specialized publisher.

In its effort to expand internationally, RP focuses on the concept of licensing certain products. In Europe, various RP consulting products have been available for a

² An extended version of this case can be found in [19].

number of years, partly as licensed products. The entry into the US market was achieved through joint ventures with renowned partners and with products that had already been successful in Europe. In 1997, around 600 employees and roughly 1,000 authors achieved a turnover of about DM 154 million in seven countries. The Internet offers the possibility to develop and market new products, (ODC), to new customers.

5.2. Towards Electronic Trading in ODC

The entry into electronic trading in ODC could enable RP to further extend its successfully applied business concept of the consulting pyramid. Offering products and services electronically, most likely via the Internet, would be equivalent to the expansion of their current pyramid consisting of three layers by an additional base layer (see Figure 3). ODC (consulting provision) via the Internet, could vastly increase the number of potential customers per service to about 100,000. In spite of these numbers, RP is remains unsure about the expected role of the Internet on its business model in the near future.

In its traditional business model, RP's core competence is the creation and provision of first-class, focused, almost unique content. In order to successfully distribute its product lines and, of course, to also provide appropriate customer support, RP needs to continue operating as a traditional publishing house.

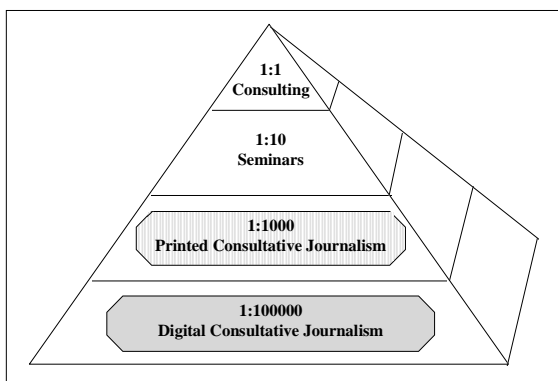


Figure 3. Rentrop consulting pyramid (adapted from Rentrop, 1997, p. 6)

Potential roles in electronic trading in ODC

In order to determine the best opportunities, we analyze various activities potentially conducted by RP in the context of electronic trading in ODC.

The following value chain outlined for the Electronic Publishing (EP) business (see Figure 4; for the original value chain concept see [25, 26]), differentiates two layers. The content-related layer addresses 'Content Creation', 'Content Packaging', and 'Market Making', where the infrastructure-related layer comprises 'Transportation', 'Delivery Support' and 'End User Interfaces'.

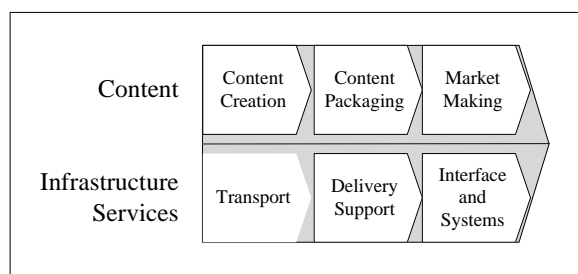


Figure 4. Electronic Publishing value chain [7, pp. 21-22]

Within this framework, [7] suggests the following strategic roles to be played (see Figure 5):

- Online Network: Managing a full electronic marketplace
- Community Organizer: Focusing on an interest-centered target group
- Interactive Studio: Creating content with new levels of functionality
- Content Rights Agency: Managing rights and matching content to market needs
- Platform Provider: Creating an end-to-end easy to use technical platform for authors, publishers and/or end users.

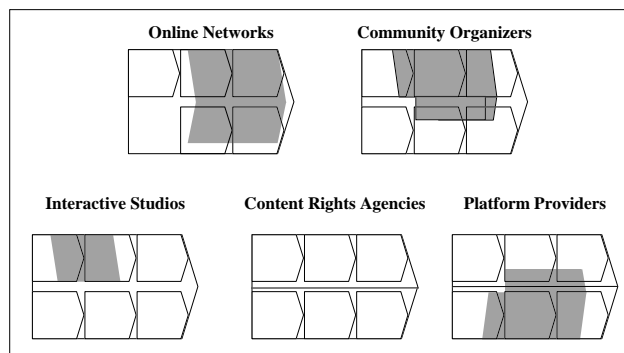


Figure 5. Strategic roles in Electronic Publishing [7, pp. 22-29]

For a mid-sized, content-focused traditional publisher like RP, however, those roles do not look attractive. RP, in conjunction with its editors, sees its strengths in the

fields of 'Content Creation', 'Content Packaging' and 'Market Making'. RP aims at transferring its current core competencies into the ODC. Physical distribution, technical delivery support, and interface design are - on a small scale - considered barely feasible and not profitable. The outsourcing strategy already in place in the conventional business should certainly be continued for necessary competencies in the EP era, such as cryptography, platform management, billing, inter-publisher clearinghouse functions, and vendor transactions management [5]. If RP becomes active on the Internet with its products, it will clearly focus on ODC creation and packaging as.

Digitalization of Traditional Products versus New Products

Another angle to be analyzed is whether to adjust and digitize existing products, or rather, to create new content to be delivered on-line.

The first option is to take existing products, especially information letters, magazines, and loose leaflets, and to prepare them (without significantly changing the content) for presentation, trading, and distribution on the Web. While this approach is comparatively inexpensive and technically not demanding [6], RP must address three major questions:

- (1) Is there enough interest from its customers in ODC? How soon will its current customers become active on the Web?
- (2) Will the issue of copyright protection have a significantly stronger negative impact on ODC than it has on print media?
- (3) Will the issue of product line cannibalization reduce sales in print media, or can separate customer groups be cultivated for the same product offered through different media?

Currently, with the exception of university graduates considering starting their own business, the majority of RP's customers are not Internet users. However, RP expects this to change within the next two years. RP considers the problems of copyright protection and the issue of forbidden reselling of digital products as more relevant. While technologies to support both issues are under development [14], they are not available yet, and the question, as to what degree technical solutions will offer sufficient protection, is still under debate. Those issues are relevant in particular if RP digitizes existing products, since this could increase the general risk of product-line cannibalization. Furthermore, even though copyright protection may become less of a technical problem in the near future, there is no regulation that limits reading [3], and the marginal cost to further disperse ODC is negligible.

The alternative option is to develop a separate ODC business line. RP could focus on leveraging its core competencies from print. Its new business line would only consist of new ODC developed by additional editors and their teams in order to serve rather diverse customer needs.

Since ODC delivery costs are negligible, RP could aim at developing legislation- and culture-independent products attractive to potential customers around the world. Further, the significantly higher ODC interaction potential in comparison to conventional publishing would allow more precise customization to customer needs [8]. Customer expectations could be included to a large extent (development led by demand).

5.3. Lessons Learned

Electronic trading in ODC can be used to supply innovative content, especially differently packaged, more targeted information. It combines communication with content leading to higher quality and thus added value to customers. Furthermore ODC customers are much more in control of how much and what kind of content they want to obtain. When substituting print products by ODC, customers will request additional value such as availability (newest information, access to data from any location), presentation (multi-media such as video clips, sound, etc.), interactivity (user-friendly downloading, search functions, etc.), and innovative content (Figure 6).

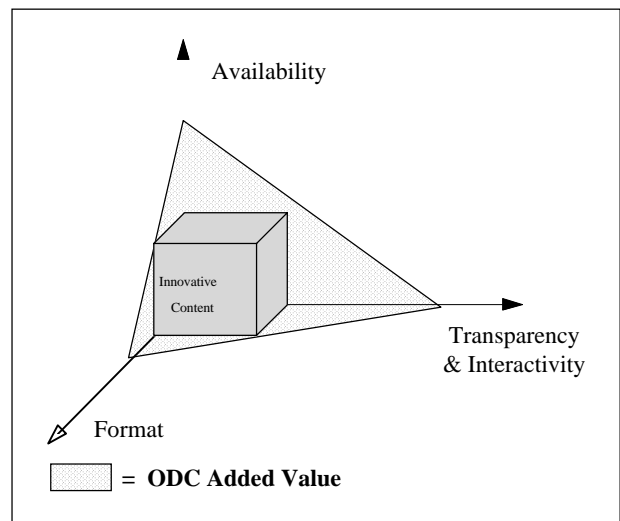


Figure 6. Dimensions of ODC added value

Where many business areas will see an increase in the significance of time and speed, this is not likely to be the case for many of RP's current products. Almost the same applies to video and sound elements. The company sees much more ODC market potential in offering increased interactivity, providing its customers access to various

consulting services (extended hotline features) as well as to detailed archives equipped with intelligent search agents. As RP aims at leveraging its core competencies into electronic trading in ODC, the company sees a definite need to create innovative content when entering the new business. Otherwise, it assesses the risk of cannibalization as higher than the additional profit potential.

Last, but not least, RP would need to adapt the role of revenues from advertising in its cost benefit calculation to the common market principles of electronic trading in ODC. One of the most important sources of revenue in Electronic Commerce is the selling of advertising space [3]. RP only has advertising in three of its publications due to the fact that it sells more than 98% of its publications directly to a comparatively small customer group, making the sales of advertising space difficult. As long as RP keeps its business model of selling published consulting targeted at a comparatively small customer group, the lack of attractiveness for advertisers will not change by trading in ODC.

6. Outlook and Future Research

Extensive areas within the wide field of Electronic Commerce deal with fundamentally different - digital - products that are manufactured, delivered, and consumed unlike any physical product. Accordingly, the most fundamental analytical differentiation within the enormously wide spectrum of Electronic Commerce is in delineating among different kinds of products. Investigating physical versus digital products, tangibles versus intangibles, this paper has focused on a specific product category called 'Online Delivered Content (ODC)'.

While offering content on-line has become extremely popular in the Internet era, only few companies are already prepared to take full advantage of their vast content archives and participate in electronic trading in this supposedly very valuable resource/good. In the near future, new market structures will emerge as a consequence of the Internet (or whatever succeeds it) and the resulting feasibility of commercially providing ODC.

This paper has raised more issues than it has answered. Therefore, it is appropriate to conclude with a series of research questions that might motivate and guide the development of research on electronic trading in ODC as well as leading practitioners to develop and assess innovative business strategies for the intangible economy.

- How are business concepts and theoretical insights regarding product design and packaging, or concerning the various dimensions of business transactions (e.g. market types, market processes and phases, market services, players, roles, and rules [15];

to be enriched in order to appropriately describe and systemize ODC?

- How will recently achieved insights and theories regarding fundamental issues such as imperfect information [e.g. 28], information acquisition [13], or retail location [32] have to be adapted to the specific attributes of electronic trading in ODC?
- How can ODC suppliers tackle the issue of getting orders from entirely unexpected origins and therefore cope with (national) Intellectual Property Right (IPR) rules, data protection / privacy rules, and language barriers?
- Which further specification of product characteristics within the range of ODC will be appropriate for developing and implementing commercially feasible business models?
- What ODC value assessment procedure will become 'standard'? Which pricing mechanism can be implemented most profitably? Could electronic auctions for ODC contribute to identifying and matching customers' value expectations?
- What technical and conceptual solutions are to be recommended with regard to copyright (IPR) management?
- What role will product warranties, return, and refund policies play, how can they be integrated in adequate business models?
- Last, under what circumstances would it make sense to interpret knowledge (explicit and eventually even tacit) as valuable resource that could be traded (exchanged/sold), or - in the other extreme - that could be purposefully hidden in accordance with pre-established business [17]?

Answers to those questions promise significant theoretical advancement and attractive business opportunities. With the steadily increasing volume of material on the Web - there is only a thin line between information, content, and knowledge on the Web - it seems an economic waste to not profitably exploit these untapped resources.

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