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TOWARDS A SECONDARY MARKET FOR VIRTUAL MEDIA A THEORETICAL APPROACH

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Abstract:

The objective of this paper is to give an overview of the aspects and economical consequences in the realm of a potential secondary market for virtual media. So far, virtual media, such as music downloaded with the commercial service *Apple iTunes*, can only be legally found on primary markets. However, legal experts argue that these virtual media should be made available for resale, analogue to existing secondary markets for physical media such as CDs or books. We take a theoretical approach to define a synoptic model of different types of secondary markets, which will help to understand the requirements and consequences of such a market. The main legal requirement is the potential adoption of the first sale doctrine in the era of digital networks, whereas the main technological requirement is an interoperable DRM System allowing a C2C transfer of rights and content. The economic consequences mainly draw from the potential efficiency of a secondary market for virtual media and from the cannibalisation effect, in which sales on secondary markets directly replace purchases on primary markets.

1. Introduction

The year 2003 happened to be a relatively successful period for the content industry compared with recent years. Starting in the late 1990s, Internet-based file sharing had risen to a very high level, threatening the revenues of the media industries severely. Especially the music industry has been hit without being strategically prepared. Furthermore, with increasing bandwidth audio-visual content has also become a subject of massive file sharing activity,

threatening the movie industry as well. Today, at least the music industry has a reason to be a bit more optimistic, after the first fairly successful commercial platform was launched in early 2003. *Apple iTunes*, offering songs for 99 US-cents, soon became the leading Internet music download service having sold over 25 million songs by mid-December [1].

However, in September 2003 George Hotelling, a U.S. citizen, offered one of these digital music files within an auction at *eBay*. Originally, he had bought the music file at *iTunes* for the usual price of 99 US-cents. After a while the auction had gained popularity and the bids for the music file had risen to 15.000 dollars which Hotelling wanted to donate to the Electronic Frontier Foundation (EFF) – the consumer interest group in the digital world. *eBay* cancelled the auction explaining its policy does not allow auctions for intangible, digital goods. Hotelling argued he wanted to legally sell his property – the music file – as others sell CDs. He assured he would transfer the music file and afterwards delete the original. *iTunes* – advertising with the slogan “You own the music” – stated, it would be principally legal to sell a purchased file, but technically unfeasible.

In order to analyse a potential secondary market for virtual media, we begin with a brief analysis of the underlying economic theory in the next two chapters. Afterwards, we discuss the main legal and technological requirements for a working secondary market and the underlying transactions. Having defined these fundamentals, we will discuss further economic and strategic aspects concerning a potential market.

2. Secondary Markets for Virtual Media

The starting point of our research is the theory of secondary markets [2] and the theory of durable goods [3]. So far, secondary markets have been mostly applied either to tangible durable goods (such as cars or CDs) or to intangible capital goods (e.g. stocks or bonds). Theoretically, secondary markets could also be applicable to intangible durable goods, such as digital music files. Practically, however, these kinds of secondary markets have not emerged yet.

As illustrated in Figure 1, several types of primary and secondary markets for tradable goods exist. Non-tradable goods, such as public or free goods¹, are generally subject to potential market failure. Therefore, these goods will not be regarded as tradable on primary or secondary markets, as long as they cause market failure.

¹ In economic terms free goods are defined as goods, which do not become scarce and therefore are not prone to real trade. Free goods are not equal to public goods, which are constituted by non-rivalness in consumption and non-excludibility from consumption. However, both types of goods can overlap and are usually not tradable, due to market failure. For a discussion of virtual goods as public goods see [4].

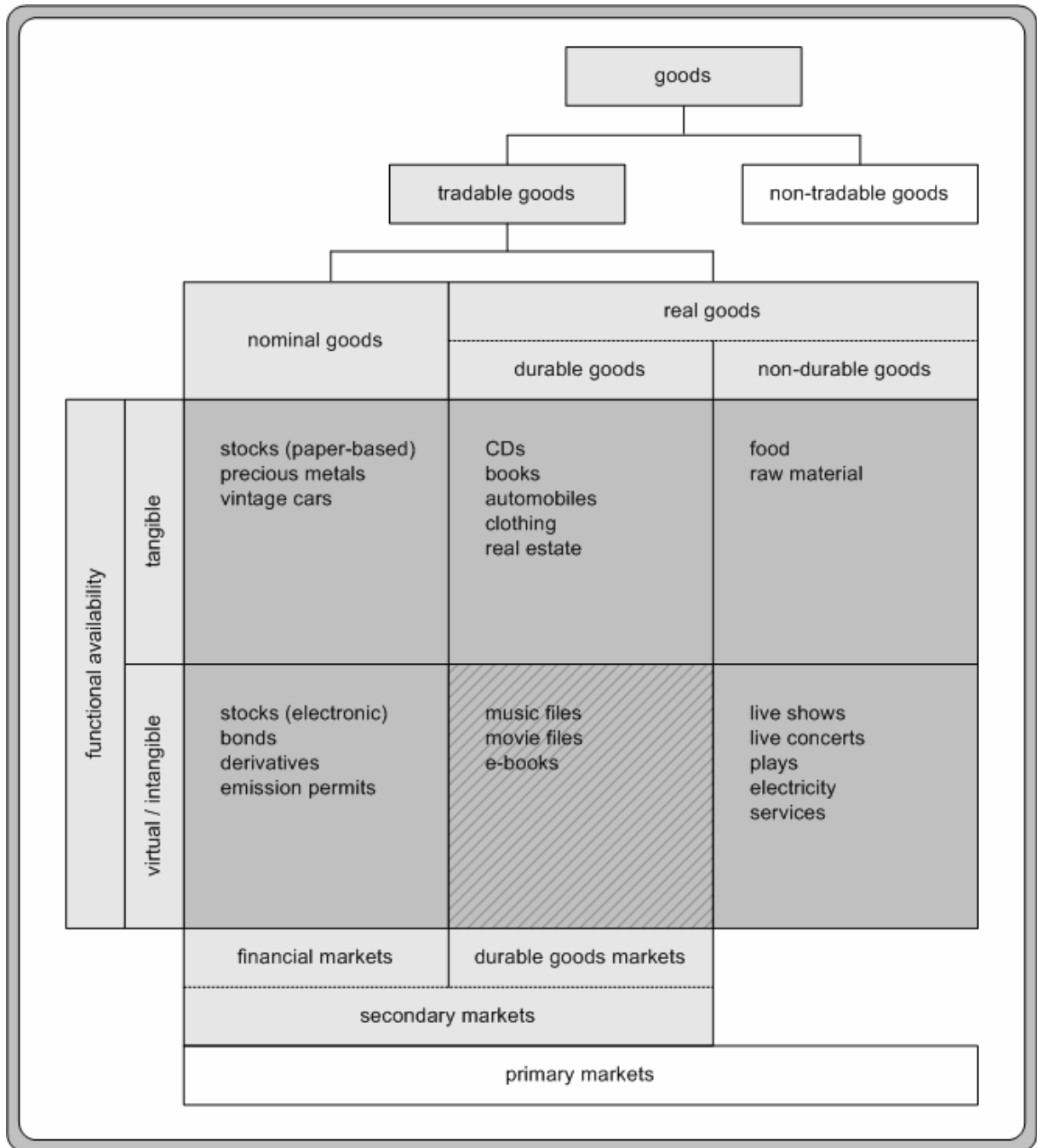


Figure 1: A synoptic overview of different types of primary and secondary markets

In the next step, tradable goods can be divided into nominal and real goods. Nominal goods are either monetary goods or claims for them. Additionally, real goods will be also included in this category, as long as they are being bought with the main goal to increase in value instead of being consumed, e.g. vintage cars or precious metals. Real goods, on the other side, are either durable or non-durable goods. Non-durable goods are characterized by the fact that their economic value vanishes with the first consumption of the good. Durable goods on the other hand are typically subject for repeated usage [5].²

² For a discussion of the life cycle of virtual goods and corresponding economic problems see [6].

The three categories – nominal, durable and non-durable goods – can be further distinguished into their functional availability on the market. A good example for this distinction are stocks, which are originally paper-based, but nowadays usually only electronically available. Similarly, all kinds of virtual media – music and movie files or e-books – must be categorized as virtually available durable goods (striped area in Figure 1), as long as they can be downloaded in open data networks.

A primary market exists, where goods are sold or donated to the final customers for the first time (in terms of e-commerce: B2C).³ In contrary, secondary markets generally constitute sales or donations from consumer to consumer (C2C). Primary markets can be found for all six areas in Figure 1. By definition secondary markets are only applicable for goods, which have an economic value and can be resold. Thus, from a theoretical point of view, secondary markets can only be applied to durable and nominal goods – namely on financial and durable goods markets. As stated in the introduction, only the secondary markets for virtual durable goods have not emerged yet, although this should be theoretically and practically feasible. In order to implement such a market, several legal and technological requirements must be fulfilled. These issues will be raised later.

3. Economic Transactions with Virtual Media

Before moving on to the discussion of the legal and technological requirements, conceptual thoughts have to be made on the categorization of possible types of market transactions with virtual media. After a general introduction, we will also focus on the categorization of P2P filesharing and superdistribution. So far, it has not been clarified, how they could fit into the framework from Figure 1. In order to do so, we must regard the different possible economic transactions concerning virtual media, which are illustrated below in Figure 2.

³ For the terms „donate“ and „sale“ see next chapter.

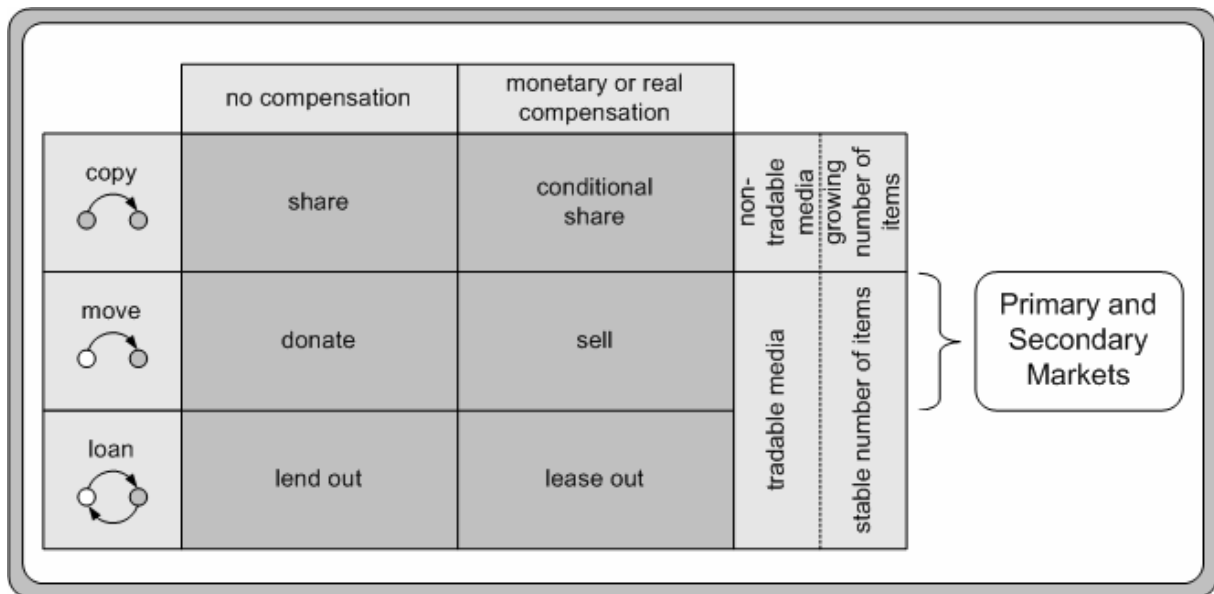


Figure 2: Economic transactions with virtual media⁴

Figure 2 shows different transport types (copy, move and loan [7]) in relationship to the type of compensation (no compensation vs. monetary or real compensation) resulting in six different types of economic transactions.⁵ As indicated with the corresponding symbols, the difference between the transaction “copy” and the transactions “move” and “loan” is that copying implies a multiplication of the original number of items, whereas the transactions “move” and “loan” do not [9]. From a (macro-)economic point of view, this fact is important, as this differentiation corresponds with the distinction of tradable and non-tradable goods.⁶ For example, the typical transaction in P2P filesharing communities is copying without compensation. The goods itself – virtual media – must be regarded as public goods as there is no rivalry in consumption and no possible excludability from consumption [10]. Therefore P2P filesharing communities have to be categorized as the economic transaction “share” in Figure 2. A “conditional share” occurs, when users are offering files with the condition that other users exchange files in return. These transactions can be typically found in filesharing on FTP-servers, but also in P2P filesharing environments [11]. Both economic transactions “share” and “conditional share” constitute transactions with non-tradable goods, as the offering counterparts do not give away the goods.

The other four economic transactions in Figure 2 can be regarded as transactions with tradable goods. The offering counterparts are (at least temporary) giving away the good corresponding with a (temporary) loss of utility, which can be compensated or not. All four economic

⁴ Partly based on [7].

⁵ These types are specific to virtual media. However, they are partly similar to the macroeconomic types of transactions [8].

⁶ See discussion in the previous section.

transactions “donate”, “sell”, “lend out” and “lease out” imply a stable number of items, unless they are issued on the primary market. Nevertheless, only the transactions “donate” and “sell” constitute both primary and secondary markets, as they imply a transfer of the power of economic disposition over the media item.⁷ This should not be mistaken with the power of legal disposition, as this type of power indicates the right of ownership over an item. The characteristics of the power of economic disposition can be expressed and transferred with licenses, which do not necessarily imply transfer of legal ownership [7].

Superdistribution does not constitute a secondary market, although it seems at first glance, because consumers are commercially redistributing virtual media. From a technological perspective users are indeed copying and thereby multiplying the original number of items, but from an economic point of view superdistribution must be regarded as a primary market. Users are solely promoting a distribution on the primary market. They are not selling their own media items, although they support the technological distribution. The rights to the new copy are still issued by the originator of the content.

4. Legal requirements

From an economic perspective virtual media, such as e-books or music downloaded at *iTunes*, are durable goods similar to physical media such as CDs or books. The main difference is that virtual media are not exposed to physical “wear and tear”. Nevertheless, even a CD with little scratches or a dog-eared book can be consumed without any losses. Media content itself is only devaluated by psychic factors, such as topicality or trends, which are typically expressed in CD, book or movie charts.

In order to specify legal requirements for virtual media to be tradable on secondary markets, we start out with a description of the legal characteristics of physical media and try to apply these characteristics to virtual media analogously.⁸ As example case, we take the legal characteristics specified in the German copyright law. For further simplification we will compare music bought on CDs (as physical media item) with downloaded music (as virtual media item).

Corresponding with the current German copyright law, the power of economic disposition a person acquires with the purchase of a CD is illustrated below in Figure 3.⁹

⁷ Under the assumption that lending and leasing do not imply transferring complete legal or economic power of disposition.

⁸ At this point it has to be mentioned, that there are of course legal limits to such an analogue application. These will be discussed later.

⁹ For a discussion of the changes in German copyright law see [13].

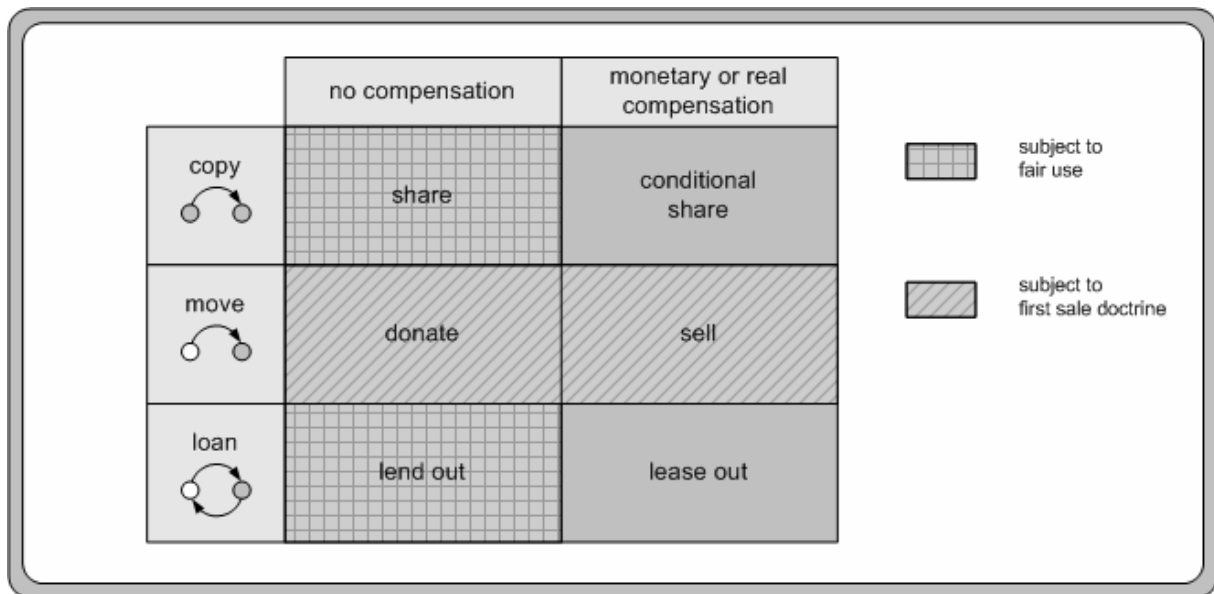


Figure 3: Power of economic disposition over a CD¹⁰

The options “share” and “lend out” are subject to the German copyright equivalent to the Anglo-American concept of fair use. The owner of a music CD is allowed to lend out the CD to family members or close friends. Furthermore, he is allowed to make a private copy (Privatkopie) for usage in other devices, such as a CD player in a car. For this purpose, very limited use of sharing is possible.¹¹ The options “conditional share” and “lease out” are not covered in the German copyright law.

The important options for a CD to be tradable on secondary markets are “donate” and “sell”. An owner can donate his CD as a gift to anybody else (not only to close friends or family members). Furthermore, he also has the option to sell the CD (also to anybody). Both characteristics are necessary conditions of a good to be tradable on a secondary market, such as *eBay*. The reason, why an owner of a CD has these options, is founded in the German copyright equivalent to the Anglo-American first sale doctrine (Erschöpfungsgrundsatz) [14, 15].¹²

The analogue application of the Anglo-American first sale doctrine and the German “Erschöpfungsgrundsatz” also for virtual media is being controversially disputed.¹³ From an economic point of view, experts argue that there should be no difference between the resale of

¹⁰ Corresponding to the current German copyright law. The planned “2. Korb zur Gesetzesnovelle des Urheberrechts” can possibly change the fair use option to have a private copy. See [12].

¹¹ Of course, family members can listen to a copy of a music CD in the car.

¹² The first sale doctrine and the German equivalent, the “Erschöpfungsgrundsatz”, are legal concepts based on the respective copyright law. The right to (re)distribute individual physical items of copyright work, such as a book or a CD, generally lies with the original author of the content. However, in case a copyrighted item is sold to the target group (the consumer) for the first time, the exclusive right of the author to (re)distribute the individual item expires. Thus, an owner of a purchased copyright item, such as a book or a CD, can resell the item without permission from the original author of the content.

¹³ For a detailed discussion see for example. [14, 15, 16, 17].

a CD or a music file purchase at *iTunes*, for example. The outcome of the legal discussion concerning the application of the first sale doctrine or the “Erschöpfungsgrundsatz” in the era of digital networks cannot be for foreseen today. Nevertheless, DRM Systems could support a practical application.

Finally, it must be recognized that an application of the first sale doctrine is not an exclusive condition for the application of secondary markets for virtual media. Similar characteristics of economically tradable media can be also expressed with legal licenses as a form of private contracts.¹⁴

5. Technological requirements

From a technological perspective two main functions have to be properly implemented in order to have a secondary market for virtual media. In the first function, virtual goods must be made tradable to achieve general economic characteristics such as rivalry in consumption and excludability from consumption. Therefore, both options “share” and “conditional share” (as illustrated in Figure 3) have to be disabled with copy protection mechanisms, as far as this does not collide with fair use principles, such as copying for private use. Furthermore, the option “lend out” should also be controlled and the option “lease out” must be suppressed in order to be compatible with copyright law. The possibilities to model fair use with different kinds of DRM Systems are currently being disputed and can be regarded as fairly difficult [18, 19, 20].

The second function a DRM system should offer, is a transfer of virtual media, whether with or without compensation (options “donate” and “sell”). This transfer must not necessarily incorporate a deletion of the content at the seller position. It must only be possible to revoke the right to use the content forever (or until a usage right for the same media item will be bought again). In comparison to the design of fair use, the concepts of the first sale doctrine or the “Erschöpfungsgrundsatz” are not as difficult.

6. Theoretical economic efficiency

From an economical point of view, a secondary market for virtual media would unite characteristics of both the secondary market for durable goods and a financial market.

Theoretically, a secondary market for virtual media is similar to a secondary market for durable goods, except for two characteristics. Virtual media are not subject to physical “wear and tear” and they do not have to be transferred physically. The first characteristic is a threat to the primary market for virtual media, as goods on both markets are homogeneous and

¹⁴ See discussion on the economic transactions with virtual media.

cannot be differentiated.¹⁵ The second characteristic would make a secondary market for virtual goods substantially more efficient due to lower transaction costs. Compared to physical secondary markets, such as *eBay*, transfer of the media would be faster.

Moreover, a secondary market for virtual media is also similar to a financial market in terms of trust. With the support of a Digital Rights Management System buyers can on the one hand prove the quality of the product to be purchased in advance. On the other hand the transactions “transfer” and “payment” can be conditionally secured, so that people can trust in the fulfilment of the contract (a problem with the secondary market *eBay*).

The potential economic efficiency of a secondary market for virtual media would only have technological and consumer-related limitation. The technological limits are based on the speed with which transaction processes can be fulfilled. Consumer-related limitations rely on the fact, that consumers only need a media item for the period of consumption process. An e-book, for example, cannot only be resold after reading, but also as long as the process of reading is interrupted.¹⁶ From a consumer perspective, the efficiency of a secondary market would be maximized, when the quotient of “period of economical ownership” in relation to the “duration of consumption” would be minimized. Taking eBooks as an example, this efficiency maximum would be fulfilled, if the consumer would only own at most one book - and only for the period she is actively reading it. This implies the assumption that she is not able to consume more than one medium at a given time. Additionally, consumption could of course be interrupted by other activities such as sports, eating or sleeping. With the interruption of the process of consumption, she would sell the eBook to another demanding consumer. To resume her process of consumption, she would have to repurchase the eBook on the secondary market. These transactions imply that consumers are willing to resell a media item once owned and that there is a high possibility to repurchase the same media items on the secondary market at any given time. From a technological point of view these transactions could be automated. For instance, *iTunes* users could be allowed to purchase music-files from each other automatically. While being online, the individual demand of a consumer could be taken from the current (or next) song a user wishes to play from her playlist. A song which is interrupted or finished, will be automatically offered for sale in the system. Similarly, an instant automated purchase could be made without the user being required to actively control the process.

¹⁵ In economic theory this effect is known as cannibalisation. See [21].

¹⁶ The latter option implies, that the user would have the chance to repurchase the same book in the secondary market.

Such a scenario of a secondary market for the *iTunes* platform would lead to a situation, where the supply of media by the users would directly compete with the primary market – the supply of media by *iTunes* itself. The economic consequences for such a situation have been described in the analysis of the cannibalisation effect [21]. From this point of view, it is doubtful, whether *iTunes* or any other player in a similar situation would allow a secondary market to emerge, as this would consequently inherit a loss of market power due to competition through the secondary market. Without this competition, a supplier like *iTunes* has (more) power to control prices on the primary market. With the existence of an efficient and liquid secondary market, a supplier could only sell a media item at the price of the lowest offer on the secondary market. From a consumer perspective, there would be no difference between the media items on the primary and the secondary market, as virtual media do not underlie “wear and tear” like physical media do. Media items on both markets would be identical. Prices for media items would generally fall over time due to saturation of the whole market and lower demand as a consequence of less topicality of the content. With a totally efficient secondary market, sales on the primary market at an initially high price can only be made as long as the overall demand overlaps the concurrently used media items, which thus cannot be offered. As soon as the cumulated demand/usage of one specific media content drops, there will always be media items offered for sale on the secondary market.

It could be concluded that this kind of scenario, where consumers could easily exchange media items equals the way users share files on P2P Filesharing Communities such as KaZaA. However, the difference is that in P2P Filesharing Communities users duplicate media items, whereas in the described scenario, users “forward and delete” the items. Thus, in the scenario of the secondary market a copyright holder will be compensated once for every single media item available. This is not the case for P2P Filesharing Communities, where users duplicate media items. This is true for both options, the “share” and the “conditional share” option as described in the analysis of economic transactions with virtual media. A secondary market for virtual media as described in the scenario would equal a secondary market for original (not copied) CDs with the only difference, that it would be considerably more efficient. However, the difference in efficiency can considerably change the dynamics of the market compared to a market where physical media items have to be exchanged. With a maximum of efficiency, the price for individual media items could fall to zero. At the point where supply is always larger than demand (or usage), the price for a media item could fall to zero, which means that the media content is effectively put in public domain. In contrast to the situation of public domain in the case of P2P Filesharing Communities, a copyright holder would have been

compensated once for every single item available on the market. The total amount of her compensation is due to the overall number of items sold, which depends on the demand or “success” of the content, respectively.

7. Conclusion and Outlook

Secondary markets for virtual media have not yet emerged. There are several technological and legal hurdles to be taken in order to enable such a market. These hurdles can be derived from the conceptual framework we developed in this paper. We described a synoptic framework in which different types of primary and secondary markets can be distinguished. In addition, we developed a scheme of economic transactions for virtual media from which the legal and technological requirements for the application of a secondary market for virtual media can be derived.

Whether secondary markets for virtual media possibly emerge or not, is depending on strategic issues. From the perspective of the media industry, there is probably no incentive to allow such a market, as virtual media on a potential secondary market would be in direct competition to the own primary market [21]. However, our market economy is in its core based on ownership of goods. This ownership model suggests that a purchase of a durable media good should also imply the right to resell or donate it. These contrasting interests between the media industry and the public domain must be balanced and should not be neglected in the current discussion of intellectual property rights in the digital and virtual era. Furthermore it has to be analysed, whether secondary markets for virtual media maximise the social welfare compared to the sole existence of primary markets. Within the context of such an analysis, also the changes in the incentive structure for copyright owners have to be covered.

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