

Emerging Business Models in Digital Media¹

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Abstract:

This paper surveys and categorises emerging digital media business models. We apply the customer activity-cycle of Vandermerwe (2000) to the consumption of digital media. Our analysis of the business models takes the pre-, during- and post-consumption phase of the cycle into account (by deriving the parameters exposure and convenience of use) and considers cost aspects as well (compliance and administrative costs).

We distinguish between two polar environments for digital media: the “Dark Web” with content created by the masses and the “Light Web” with content created by big media. Thus, we develop an artist life-cycle model in which different business models appear to be optimal at different stages of an artist’s career.

Voluntary-based models seem to be ideal for newcomers in the Dark Web, DRM- and complements-based models are the likely choice of established artists in the Light Web. Established artists might change their approach again using voluntary-based or complements-based models when they “retire”.

1. Introduction

Ever since the rise of Napster in 1999 the music business has been out of equilibrium and the industry has been struggling to adjust its conventional label business model. Until the emergence of peer-to-peer (P2P) file sharing networks the industry has been kept in a delicate balance. On the one hand, technology did not yet provide consumers with the distribution tools for large-scale copying and thus piracy only caused minor harm to the industry. On the other hand, technological limitations also forced the industry to respect copyright law in its original sense (exceptions granted to

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consumers like fair use). Even though the industry had been extremely successful to dilute other aspects of copyright law (e.g. the length) over the last decades, it did not have the tracking tools at hand to charge for every use of copyrighted material.

This started to change with Napster and its offshoots. While the actual effect of P2P networks on the music industry is very debatable,² it is unquestionable that this technological impact on the demand side of the industry was going to have repercussions on the structure of the industry. When legal actions by the industry did not succeed in reducing the use of alternative distribution channels, technology entered the equation as well on the supply side. The impact of technology on its business was therefore countered by the industry with own technology-based business models.

While these new models naturally aim to maximise profits of rights holders, they must not limit consumer rights more than society intends. Established consumption rights of the past must be respected and a new equilibrium between producer and consumer interests has to be found after the impact of technology (advanced distribution and tracking tools) on the demand and supply side, respectively.

The paper surveys and categorises the developing business models in the post-Napster music industry according to their correlation between content distribution, payment and rights. It analyses them based on four relevant parameters (convenience of use, potential exposure, compliance and administrative costs) that consider the social costs and benefits of the business models. Further to the static analysis of content, payment and rights layers we add two dynamic dimensions to the study. We apply the customer activity-cycle framework (Vandermerwe 2000) to the consumption of digital media. This allows us to take the importance of pre- and post-consumption activities into account in contrast to a strict focus on the consumption phase itself. Moreover, we distinguish between different stages of an artist's "life". This approach gives us an opportunity to assess the situational advantages and disadvantages of the alternative business models in the various contexts and make recommendations based on that. We therefore suggest an artist life-cycle where different business models appear to be optimal at different stages of an artist's career. While the paper's focus is on the music industry, it applies more broadly to digital media in general.

The structure of the paper is as follows. Section 2 surveys and categorises the models. We present the music consumer activity-cycle in Section 3 and analyse the presented models in Section 4. We introduce the artist life-cycle in Section 5 and Section 6 concludes and provides policy implications.

2. Categorisation

The recent business model literature in digital media³ distinguishes between three different layers of analysis. Business actors interact with respect to the distribution of content, the payment for it and its rights. While in the conventional music industry the transfer of these took place at the same time, this need not be the case anymore in the digital age and the three layers should be treated separately. In fact, this decoupling of payment and rights from the actual distribution of content is a common feature of the

² The spectrum ranges from studies that find a beneficial effect of file sharing on music sales to claims that the existence of the music business is threatened by the rise of P2P. The music industry's own studies about the fatal impact of file sharing are well reported. Oberholzer and Strumpf (2004) is probably the most prominent paper that finds a positive effect of P2P on music sales.

³ The literature that originated with Timmers (1999) and applied this business model framework to several digital media environments, for instance Jeandupeux and Barria (2001).

alternative business models in the music industry that attempt to tackle the challenges of the digital age.

In this section we list the business models that emerged recently and categorise them based on their correlation between distribution, payment and rights. Models where payment and rights are still closely linked to distribution in the conventional way are at one end of the spectrum. Strong copy protection in the form of hard Digital Rights Management (DRM) is the offline traditional retail model moved online: a directly related payment needs to be made in order to gain access. The relationship between distribution, payment and rights is continuously relaxed along the spectrum. Other models increasingly give up on instant corresponding payment for content plus rights exchange and instead rely on time-shifted and possibly only loosely quantity-related reward or return. Payment may be (partly) on a voluntary basis but still related to the content or entirely decoupled from the content distribution when revenue is generated indirectly. Free content in conjunction with a compulsory tax levy is the spectrum's other extreme. Naturally, borders between the models are not clear cut and they can overlap.

2.1. DRM-based Models

Two approaches to DRM-based distribution can be distinguished.

2.1.1. Strong Copy Protection

Hard DRM regimes aim for strong and unbreakable copy protection. They would monitor and control the exchange of digital content in order to prevent unauthenticated use of content. It would have to be backed by strong law enforcement that punishes attempts to break the protection. Content rights could be enforced by the use of a smartcard-based encryption system. Once a hard DRM system has been put in place, quasi-monopoly pricing of the content becomes possible as it used to be the practice of the major labels over the last decades.

2.1.2. Limit Pricing

Instead, the focus of soft DRM systems would be to add value to digital content⁴ and to compete with the secondary market of P2P networks. In fact, copying is tolerated up to a point and not actively prosecuted. Limit pricing aims to compete with the piracy copies by charging not more than the transaction costs of using free P2P networks.⁵ Varian (2004) and Regner (2004) develop models of this limit or strategically low pricing and the iTunes Music Store can be seen as a precursor for this strategy. Compared to other music services at the time of its release it reduced copy protection significantly (allowing more CD burns etc.) and provided added value (e.g. play lists).

2.2. Voluntary-based Models

2.2.1. Super-distribution

Super-distribution permits users to consume digital content without restriction and it also allows them to pass it on to others. The recipient is however limited in the use of the content until he obtains a full license to use it. If subsequent consumers decide to

⁴ See also Fetscherin (2002).

⁵ In P2P networks disutility is caused, because sometimes high quality files might be inconvenient to get and bear the risk of a virus attack. Even the moral costs of copying "illicitly" can be considered.

purchase a full license, then the sending consumer benefits from his spreading activity as he is rewarded part of the license fee. If the recipient chooses not to pay but redistributes the file anyway, then somebody else will earn the “commission” from a full license purchase, which would be the original sender. The flexibility of consumers is significantly increased as they may receive, consume and redistribute digital content without caring about any DRM restrictions. They may not pay and hence not earn or they may choose to pay and then become somewhat official licensed redistributors.

Interoperability of content formats and DRM systems is required though to make smooth forwarding of files possible. This has not been achieved yet, but super-distribution has the clear advantage that it allows consumers to share interesting content. It can be seen as a promising way of “viral marketing” as consumers benefit from successful recommendations as well as the original creators.

The question is whether consumers will be interested in making the effort to “re-sell” content. Rosenblatt (2004) points out that the concept appeals most for curiosities and rarities as super-distribution for already widely-known content makes limited sense, because its only real value is as a “viral marketing” instrument. Weed (see www.weedshare.com/) is a super-distribution service. Songs from the site can be accessed freely for a number of times (the play count limit may be three, for instance) and for further access a license must be acquired. Sharing of the purchased files is encouraged as customers can earn money from subsequent purchases by their friends. Weed is supported by a network of music stores that provide songs.

2.2.2. Voluntary Contributions

Distribution models with voluntary components have been discussed in the popular literature.⁶ Regner (2004) provides a theoretical model that explains voluntary giving for music. Voluntary contributions can be seen as an open contracts design that encourages consumers to reciprocate. While purely self-interested individuals would not pay (free riding), consumers with social preferences decide to contribute as this increases their utility. The choice between free riding and contributing has been studied extensively in labour market contexts and results confirm that a significant part of individuals exhibits social preferences⁷ and return kind behaviour (such as making music freely available without restrictions to consumption). Also Regner and Barria (2005) (see next section) provide empirical proof for significant voluntary payments for music, albeit not in a purely voluntary context.

The question of the existence of a long-term positive reciprocity equilibrium is essential in order to have a sustainable model. Mutual opportunities to reciprocate increase the efficiency of open contract designs. Therefore, additional options to reciprocate negatively (punishment of free-riders) or positively (rewarding frequent supporters) based on recommendation and reputation systems should increase the rate of voluntary contributors.

The success of open contract designs in the context of music likely depends on whether designs can be developed that implement mutual opportunities to reciprocate. The integration of a bonus makes the contract even more incomplete and thus leaves more room for reciprocity (from both sides). A bonus in the context of the music business could be exclusive access to concerts or backstage and special merchandising for consumers who did contribute. The implementation of reputation

⁶ The Street Performer Protocol (see: http://www.firstmonday.dk/issues/issue4_6/kelsey/), for example, or Stephen King’s “The Plant”.

⁷ See Camerer (2003) for a survey of social preferences.

mechanisms is another feature that could support voluntary contributions. It is also possible to imagine designs that remind consumers to make their voluntary contribution in case they do enjoy the music. The freely available music file expires after a certain time (e.g. a month) or after a certain number of times played and then the consumer can decide how much to contribute. He owns the file if he does, while the file disappears if he fails to. He could download it once again, but the disutility of doing that repeatedly seems to be substantial. This soft enforcement of a contribution is common for shareware software and it has the advantage that a payment decision is postponed to a time when the consumer's valuation of the content is clearer since it has been experienced sufficiently then.

The sequence of actions could also be altered. It might be reasonable for the rights holder to distribute a preliminary sample of the work, ask for a pre-payment, deliver the whole album (if the pre-payment was large enough) and encourage voluntary contributions.

2.2.3. Variable Pricing

In a variable pricing scheme consumers are allowed to pay what they want for music albums as long as the payment is within a given price range. Essentially, a minimum price is charged and consumers are encouraged to pay on top of that.

Regner and Barria (2005) analyses the behaviour of customers of the online music label Magnatune where variable pricing is applied (with a range of \$5-\$18 for an album). It takes social preferences into account and it also considers the importance of free sampling of experience goods.

Comprehensive pre-purchase access at Magnatune facilitates music discovery and allows customers to make an informed buying decision setting it apart from conventional online music stores. It is found that an open contracts design can in fact encourage people to make voluntary payments. The results of the empirical analysis validate this, as the average payment is \$8.20, far more than the minimum of \$5 and even higher than the recommended price of \$8.

2.3. Complements-based Models

In this model rights holders would generally not charge for their content and they tolerate copying. Instead, they focus on complements of their content to generate revenue. Thus, consumers pay rights holders or their intermediaries for other complementary products or services, but they can use, download and distribute artistic works as they wish. No limits on distribution are therefore put in place. Gayer and Shy (2004) and also Curien *et al.* (2004) analyse this approach. Connolly and Krueger (2005) analyse concert revenues in particular.

Traditionally, merchandising is a common income from complementary products. Complementary services that generate revenue are ticket sales for concerts, ring tones for mobile phones and licenses for the use in advertisements, movies or video games. The Grateful Dead – who encourage free copying of their music – with their substantial concert ticket and merchandising revenue and Moby who has been successfully licensing his tracks for advertisements can be seen as examples.

2.4. State Regulation

Government regulation instead of market allocation is very common for public goods. In fact, public goods are one of the known reasons why markets could fail.

Fisher (2004) proposes ways to regulate the digital media industry. Two options exist to move the allocation of music from the market to a governmentally regulated system. Compulsory licensing means a flat fee is charged to internet subscribers for unlimited content usage, while levies are like taxes on blank digital media, computers or other types of hardware. The generated revenue is used to compensate rights holders who make their content available for free.

In general, blanket licensing or levies are intended to grant a fair compensation to rights holders for private copying. The widespread application of DRM has the potential to alter the role of levy schemes since the compensation would be enabled by individual DRM-based licensing contracts.

However, there are several arguments against levies.⁸ It is argued that the extension of copyright levies to digital devices and media is harmful to consumers, creators and industry as they increase the price of products such as personal computers, consumer electronics devices and storage media for everybody not only the music consumers. While a blanket licensing scheme in the case of TV viewing makes sense since the household density of television sets is close to 100%, it seems to be less ideal for music consumption and negative efficiency effects would be the consequence. There would also be significant incentives to tamper with the system that calculates the re-distribution of tax revenue to rights holders.

2.5. Summary

Strong copy protection (1) is the conventional offline business model taken online and hence payment for the content as well as the rights for it are closely connected to the actual distribution of content. Rights restrictions are less limiting under limit pricing (2). Variable pricing (3) offers a price range to choose from and few rights restrictions (for instance free streaming is possible). Therefore, both payment and rights more decoupled from distribution. Under super-distribution (4) consumers may opt not to pay for content, but unless they acquire a full license their rights are somewhat limited. Voluntary contributions (5) leave the payment decision complete up to customers and no rights management is implemented. Also for complements-based models (6) and state regulation (7) there are no rights restrictions, payment in these models is however totally decoupled from the actual content as revenue is generated from other sources. Figure 1 gives an overview about the decoupling of payment and rights from content distribution for the discussed models.

⁸ See: <http://www.eicta.org/copyrightlevies/index.html>

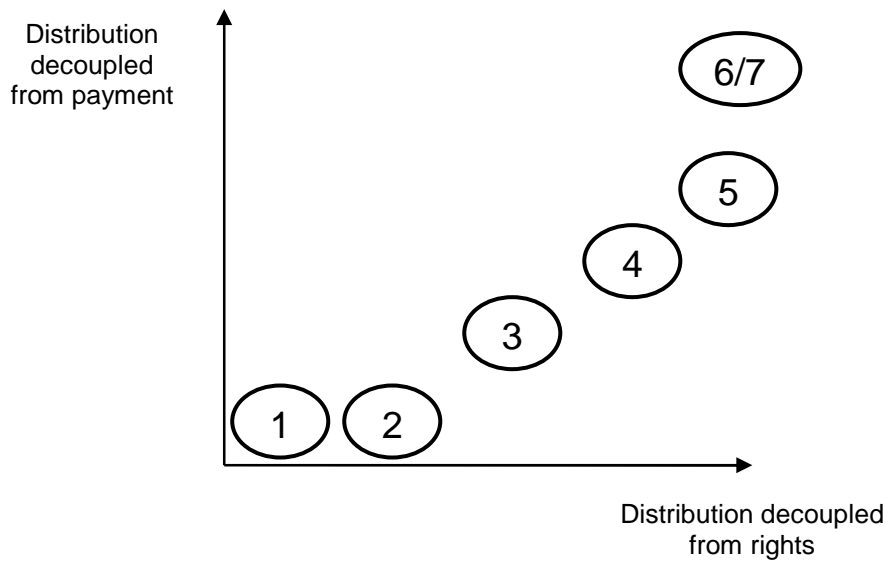


Figure 1: Correlation between content distribution and rights (x-axis)/payment (y-axis)

3. Music Consumer Activity-Cycle

In order to assess the particularities of the music business we apply the customer activity-cycle of Vandermerwe (2000) and modify it for digital media consumers. The entire consumption cycle (pre-, during and post-phase) is taken into account with the aim of creating value in each phase. We distinguish between the discovery, listening and organising phase.

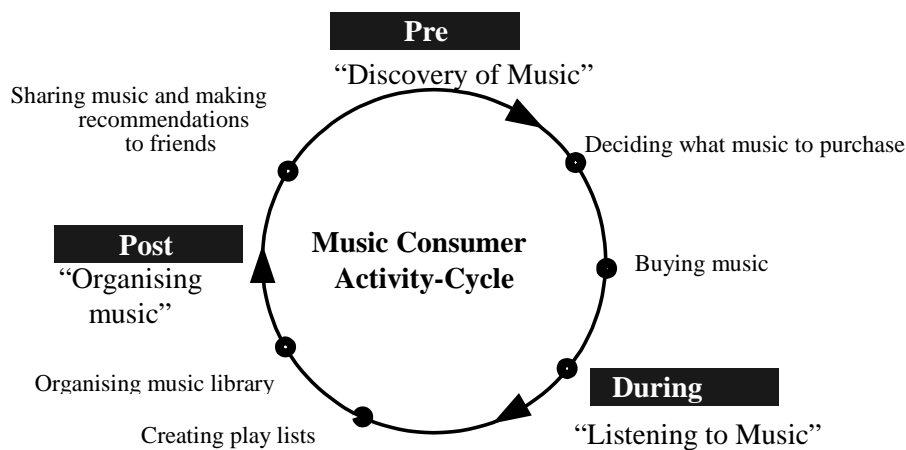


Figure 2: The customer activity-cycle of Vandermerwe (2000) adapted to the music consumer, modified from Choriantopoulos *et al.* (2005)

3.1. Pre-Consumption: Discovery of Music

Traditionally, new music is discovered through many alternative channels, such as radio, friends, magazines, live performances or sampling at music stores. The main characteristic of music discovery is that the subjective value of a music song can only be assessed after it has been listened to a number of times since music is an

experience good. Sampling opportunities and the visibility of the content are limited when consumption is conditional on payment and rights exchange. Therefore, a strong focus on immediate monetary compensation to acquire rights obstructs the discovery of new music.

3.2. During Consumption: Listening to Music

The dominant medium for the purchase of new music through stores is the CD. However, nowadays listening to music is not limited to the home CD stereo system. Consumers expect to transfer music to their computer, portable devices and car stereos and to share music easily with friends. Portability of content is therefore an important aspect.

Moreover, the CD is a bundle of music songs⁹ and it is quasi-exclusive to its owner. Both of these attributes have been broken by the widespread availability of digital music on P2P networks. Music on CDs has never been really exclusive as it could be transferred to tapes. These copies were of less quality, though, while the digital copies of P2P networks are perfect.¹⁰ While also whole albums are exchanged in the file sharing networks, single song searches are the majority. "Singles" are much more popular online than on the CD medium. The created bundle is broken up and consumers appear to prefer picking the songs they actually like most.

3.3. Post-Consumption: Organising Music

Hence, a single song is the unit of digital music. Advanced playing software (e.g. iTunes) allows consumers to mix their songs conveniently and it becomes easy to create own play lists of favourite songs for different moods and occasions.

Additionally music software allows consumers to rate the songs in their library. Actively entering preferences might be somewhat cumbersome for one's entire music library. However, sophisticated algorithms can create a preference profile of the library based on the frequency of consumption. Thus, each song gets rated passively.¹¹

A music library that reflects the taste of its owner properly can become very useful when the preference profile is entered into the P2P network. Matches of similar preferences can be found by comparing the profile to the ones of other peers. Recommendations (highly rated songs that are unknown to the consumer) from peers with a high shared preference value are presented to the consumer. These music organising services based on recommendation systems can therefore help to discover good music and lead to new consumption. See Neville and Pitt (2004) for a more detailed study about agent-based reputation and recommendation services.

3.4. Summary

The full activity-cycle of customers needs to be considered in order to provide value in all phases. This stresses the importance of the discovery phase and additional synergetic services. Ways to make potential consumers find one's content are essential in the digital media business.¹² Value during (and after) consumption is maximised when the use is unrestricted. Hence, only when the established

⁹ Most CDs are albums that contain about 10 songs. Singles have also more than one song on them.

¹⁰ Digital copies are perfect by definition. However, some quality issues like corrupted files or viruses do matter.

¹¹ The service <http://www.audioscrobbler.net/> is just one example for such a tool.

¹² Naturally, an established reputation and subsequently an existing fan base are the best ways.

consumption patterns¹³ are respected and new ways to add value (features to organise the content) are provided can the full revenue potential be reached.

4. Analysis

Our analysis of the business models focuses on four parameters: i) convenience of use, ii) potential exposure, iii) compliance costs and iv) administrative costs. They take the demand concerns derived from the consumer activity-cycle into account and consider the cost side as well. The surplus potential is essentially a function of these parameters. Since the focus of our analysis is on the social costs and benefits we do not analyse pricing issues like a subscription service or a la carte offering in this paper.¹⁴

Convenience of use takes the acceptance of any DRM measures by consumers into account. Fair use aspects are considered as for instance the portability of files to mobile players or burning CDs. Consumers' willingness to pay is reduced, if the consumption rights they got accustomed are severely limited. The INDICARE (2004) report distinguishes the following major categories of concern so far: fair conditions of use and access to digital content, privacy, interoperability, transparency and various aspects of consumer friendliness.

Exposure indicates how much benefit is created from positive network externalities. Information goods like music are experience goods. Consumers do not know what they are worth to them until they experience them (Shapiro and Varian 1999) and their exact value to the consumer is quite unknown ex ante. The valuation rather develops until the good has been experienced often enough and the true worth has been established. The literature distinguishes between an exposure effect (Liebowitz 1985 and 2003) that describes how copies can play the role of informative advertising (improving the buying decision) and an addiction effect (Silva and Ramello 2000) that explains how current consumption of copies can lead to future purchases of the same product (or artist) when listening to the copy created sufficient pleasure over time. Therefore, the possibility to sample music can be very important to appreciate the actual value of content. High exposure allows plenty of opportunity to sample and in turn can increase consumption.

Compliance costs measure the technological challenge of the model's implementation. They encompass the costs involved in setting up and maintaining the technological system that enforces the business model.

Finally, we consider the administrative costs that are incurred. More centralised solutions might mean more bureaucratic costs, while decentralised options usually align incentives with actions and minimise motivation costs. A market solution should provide better results than state regulation – as long as the market inefficiencies do not outweigh the administrative transaction costs. In that sense regulation might only be a last resort option, if all market solutions fail.

A detailed analysis of the business models with respect to the four parameters follows. We use a stylised ranking from 1 (low) to 5 (high) to indicate how well the parameters are considered in the respective model.

¹³ Traditional Rights and Usages (TRU) in the terminology of the Digital Media Project (www.dmpf.org).

¹⁴ They would only lead to a re-distribution between producers and consumers (assuming that profits are sufficient for producers to create/invest in the first place) without affecting overall surplus.

4.1. Convenience of Use

By default the strong copy protection of hard DRM systems is the concept that interferes most with established music consumption rights. Portability might be limited due to a lack of interoperability. Also the number of CD burns might be capped. Possibly the music files are only offered as a rental and they vanish when the consumer quits the service.¹⁵ Soft DRM concepts like limit pricing are already much less restricting. Nevertheless, all common DRM systems of today seem to restrict consumers significantly as explained in a recent survey. (EFF 2005) In the variable pricing model consumers are essentially free to do what they want with the music files they acquired. Also the remaining alternatives do not put any restrictions on the use of music and are therefore rated at the maximum.

4.2. Exposure

Naturally, the restrictions on copying rank hard DRM systems lowest with respect to the exposure they allow as the attempt to eliminate illicit copying also decreases the sampling opportunities of consumers. Variable pricing provides comprehensive pre-purchase access to content and this free streaming gives potential consumers an opportunity to make a well-informed buying decision. Super-distribution models that implement reputation/recommendations provide possibly the best exposure effect. They integrate and encourage recommendations and receive the highest rating. Pure voluntary contribution models do not restrict free access to streaming, but allow downloads as well. However, this difference might be negligible. The other models provide a similarly high exposure effect as distribution is not restricted.

4.3. Compliance Costs

The technological and legal costs of making consumers comply with a watertight DRM system can be immense. The design of a supposedly secure platform, the monitoring and tracking of potential abuse as well as the legal prosecution to punish all have to be taken into account. An estimation of the costs to put in place a watertight DRM system can be found in Eckersley (2003). Strong copy protection is therefore ranked highest in this category. A prerequisite for super-distribution is the ability to trace the flow of content in order to reward distributing customers accordingly. Hence, the technological effort seems fairly substantial. Voluntary contributions, variable pricing or complements-based models do not require any significant technologies and they are ranked lowest in terms of compliance costs. Finally, government regulated models rely on a diligent way to track consumption and need to have sophisticated compensation schemes to distribute the tax revenue justly. Such a system would be significantly more complex than the media ratings for TV that are used to price advertisements. While sample sizes of only 1000 users deliver meaningful results for the TV programs, the consumption of music is much more heterogeneous and requires more data to be representative and reliable. Thus, the compliance costs of government regulated models are rated fairly high.

¹⁵ This is the case with the re-vamped Napster service:
http://www.theregister.co.uk/2005/02/04/napster_go_away/

4.4. Administrative Costs

By default government regulation scores lowest here due to its centralised nature. It means more bureaucratic costs compared to the other models since an efficient, fair and tamper-proof taxation and distribution system has to be set up.

4.5. Summary

The stylised rankings of the analysis are summarised in the Table 1. The convenience of use simply depends on whether a DRM system has been implemented and if so which kind. This affects the value of post-consumption phase services. The compliance costs of the model also depend on the implementation of a DRM system and its type. However, other models (super-distribution, government regulation) require significant technological investment as well. The parameter exposure plays a major role in the pre-consumption phase as it facilitates the discovery of new music. Exposure is of varying importance to different artist groups, though. Established artists who have already built up a reputation and a customer base rely less on it, while exposure is essential for newcomer artists so that potential consumers can experience their music and possibly become fans.

MIN = 1, MAX = 5	Convenience of Use	Exposure	Compliance Costs	Administrative Cost
Hard DRM	1	1	1	5
Soft DRM	3	3	3	5
Variable Pricing	5	4	5	5
Super-distribution	5	5	3	5
Voluntary Contributions	5	4	5	5
Revenue from Complements	5	4	5	5
Government Regulation	5	4	2	1

Table 1: The stylised rankings of business models for each parameter

5. Artist Life-Cycle

Within the realm of digital media it emerges more and more that there are two main scenarios occurring in two polar online environments that are however intrinsically connected. These online domains require alternative yet complementary approaches.

On the one hand, there is content creation for the masses by big media with the aim of trading content under the traditional business model of payment closely connected to delivery, and legal consumption to only occur conditional on payment. In this scenario rights holders are looking to utilise centralised network technologies that provide them with a high degree of control over their rights. Because invalid or unauthorised actions are not possible in this system it can be referred to as the “Light Web”.

On the other hand, there also exists the “Dark Web” in which content is created by the masses for the masses and P2P networks are utilised for content (super-)distribution. Barriers to enter the Dark Web with own creative content have become negligible thanks to new technologies in (music) recording and it is therefore very easy to put own creative works into the Dark Web. Many users are doing just that with the content they created out of intrinsic motivation and joy of artistic expression.

Naturally, it is not so easy “to be found” in the vast Dark Web – which might not be the driving motivation of many Dark Web creators anyway. To be discovered by the masses requires more, but intelligent reputation- and recommendation-based content search tools that link the post-consumption to the pre-consumption phase can assist matching content to end-users who value it highly.

Our model of an artist life-cycle naturally begins in the Dark Web where content is created by the masses for the masses. Business or profit motivations are not the main driving force for content creation here. Content by people who simply enjoy creative activity and by people who got rejected from the media business will be found in the Dark Web. Access to the vast pool of content is free and unrestricted. Nevertheless, P2P-based reputation and recommendation systems assist newcomers to distribute their content effectively. With increasing success and popularity Dark Web artists might consider switching to the Light Web attracted by its bigger revenue potential.¹⁶ While the Dark Web- turned Light Web-artist is usually backed by a label in the conventional sense, he might also remain independent distributing content online himself. With or without the help of a label the Light Web-artist will have to be sufficiently famous with an established fan base to which content is sold. The established artist (and its label) benefits from the high level of content protection provided by the Light Web environment. This guarantees constant revenue streams as long as the artist remains popular. Restricted exposure (through distribution limits and higher prices than Dark Web content) might make artists change their approach yet again. Once they have benefited enough from the financial success in the Light Web, they might prefer to give up some control and choose more exposure again going “back to the roots” by entertaining a maximum audience.

The two scenarios (Dark Web and Light Web) co-exist and attract different types of rights holders. Therefore, the choice of a business model highly depends on the artist life-cycle. It seems reasonable for newcomers to concentrate on voluntary-based models (super-distribution, voluntary contributions, variable pricing). They are suitable for the Dark Web since they provide a basic revenue source for rights holders (artists themselves by and large) and the described post-consumption phase reputation and recommendation systems improve the chances to find the right audience. DRM- or complements-based models appear to be most profitable for established artists in the Light Web. Reduced exposure due to the copy restrictions of content is less significant to them since they will already have an established reputation and fan base to sell to. Voluntary-based models become an option again for established artists who are financially saturated. These “retired” artists might be more driven by artistic motivations and appreciate increasing the utility of their fan base and maximising their audience as a whole as they are already financially secure. An example of a rich and famous “retired” artist who has chosen a voluntary contributions design is George Michael (see BBC 2004). Complements-based models also remain attractive in this “retired” artists-phase.

¹⁶ Recently, two artists jumped from obscurity to stardom and even to the top of the billboard charts when they eventually signed a label contract. The German children song “Schnappi” spread through the P2P networks by word of mouth and radio DJ play. It was already played and hummed everywhere when it also reached the top of the commercial charts. The English band “Arctic Monkeys” distributed free CDs after concerts and on their web site. When a label signed them belatedly, they were already a big hit and subsequently also reached the top spot of the charts which never happened before without the help of a label. (Economist 2005)

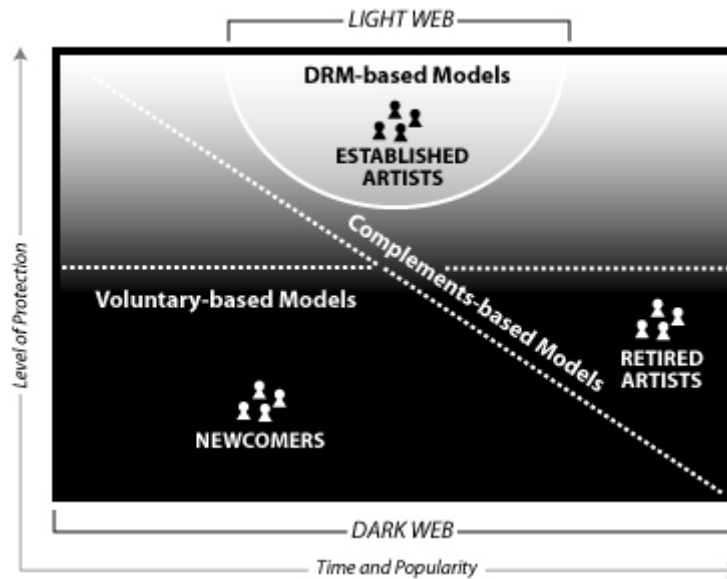


Figure 3: The Artist Life-Cycle

The artist life-cycle is illustrated in Figure 3. Newcomer artists emerge in the Dark Web and voluntary-based models appear to suit them best. The Light Web and its more guaranteed revenue streams attract artists establishing a reputation. DRM-based models dominate this highly commercialised environment, but also complements-based models are an option for established artists. Complements-based models rely on the popularity of artists and they remain interesting for “retired artists” who are financially saturated and maybe more driven by the desire to maximise their audience. Voluntary-based models once again become an option in this phase.

6. Conclusions

Ever since the emergence of P2P file sharing networks the digital media business has been out of equilibrium and looking for ways to stop the large-scale copying. The use of technology – namely DRM systems – has been one of its answers, but only the right balance between extracting the value of creative content by their owners and respecting the position of consumers will be sustainable in the market. Digital media companies and rights holders have to come to terms with the fact that absolute control over every piece of content is not desirable. Instead, consumers’ acceptance of DRM is also essential for the economic success of business models based on DRM.

The paper surveyed emerging online music business models and categorised them into DRM-based, voluntary-based, complements-based and state-regulated models. We applied the customer activity-cycle framework of Vandermerwe (2000) to the consumption of digital media (discovery, listening and organising) and considered the full cycle of pre-, during- and post-consumption phase in our analysis. In the pre-consumption phase the informational role of copies has to be taken into account. Music – but also digital media in general – is an experience good and facilitating music discovery can be essential. The digital consumption experience also needs to respect the established traditional rights of media consumers. Interoperability with existing online music formats and with the respective portable music devices is a significant aspect here. Furthermore, post-consumption phase services can increase

the customer experience and reputation- and recommendation-based tools can lead to subsequent music discovery and a “new” consumption-cycle.

The parameters of our analysis (convenience of use, exposure, compliance costs and administrative costs) take the demand concerns derived from the customer activity-cycle into account and consider the cost side as well. The models at each end of the spectrum we presented come with significant drawbacks. Hard DRM regimes are costly to maintain and they overly restrict consumer rights. Government regulation of the industry would create significant administrative and fairness issues. Nevertheless, they are the safest choices from an industry perspective as they provide the best guarantee for revenues. Models from the middle of the spectrum (voluntary- or complements-based) would have to prove that they provide sustainable business solutions. Only then their described advantages with respect to exposure and convenience of use will appeal in a highly commercial environment.

Moreover, we have shown that the question of the appropriate business model is not just a static one. Along the artist life-cycle this choice might very well change. While exposure appears to be essential for newcomers to start off, guaranteed revenues and therefore stronger content protection will likely dominate the decision of established artists. Possibly artists come around full circle when their financial motives are saturated and are outweighed by a desire to maximise their audience. Voluntary-based models will appeal to newcomers (and amateurs) in the Dark Web, DRM- and complements-based models are the likely choice of established artists in the Light Web and these established artists might “retire” from the commercial approach and might consider returning to the Dark Web approach once they have benefited enough from the financial success in the Light Web. They might prefer to provide a maximum audience with their content using voluntary-based or complements-based models.

The emergence of content created by the masses for the masses and its growing importance in the realm of digital media has been an important aspect of this paper.¹⁷ Barriers to create music for instance have fallen significantly thanks to easy-to-use recording software. While the paper focused on the development in the music industry, the trend applies to other kinds of digital media as well. Podcasting and blogs are two of the most prominent tools of an emerging culture of creating content by the masses for the masses – in this case “journalistic” content. But also the entry barriers for movies have fallen sharply as smaller video producers turn successfully to the Internet for distribution. (Hansell 2005)

Although much of this Dark Web content is not – and is not meant to be – commercial, its growth has to be taken seriously since business models and DRM approaches that might fit the Light Web well, would apply badly to the Dark Web environment. The diversity of sales in digital media is increasing¹⁸ and the Dark Web must be regarded as a fertile ground where artists can develop and where the best ones

¹⁷ This development has also been illustrated by two influential articles that appeared recently. The long tail of Anderson (2004) describes how online services benefit from their inventory advantage compared to offline retailers and how they succeed in guiding customers down the tail from mainstream to diverse content. The Web 2.0 concept of O’Reilly (2005) describes a new breed of online services that drive the Internet and shows how their content creation is by the masses or assisted by the wisdom of the masses.

¹⁸ Brynjolfsson et al. (2005) find that obscure book titles make up a surprising 40% of sales at Amazon.com. Also, the online music service Rhapsody streams more from below its top 10000 selections than from its top 40, whereas traditionally the majority of CD sales come from the top 40. Moreover, it has been shown that charts are less dominated by top artists recently than in the traditional music industry (Gopal et al. 2002).

get filtered out by peer-based reputation and recommendation systems. Sufficient success will probably lead to a switch from the Dark to the Light Web and consequently a change of the business model. But the Dark Web also provides plenty of worthwhile niches for less known artists due to its content finding tools.

It follows that there will not be a single answer to the question of what is the future business model for digital media. As explained the answer depends mostly on the position in the artist life-cycle. Content creation by the masses requires a different approach (a focus on exposure and convenience of use) than content creation by big media where the goal is to maximise control over rights while still keeping convenience of use in mind. Therefore, only open and interoperable DRM systems promise to be successful in this two-poled world of digital media as a successful DRM system ideally caters for both Dark and Light Web and their respective business models.

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