The Internet and the Reshaping of the Music CD Market

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It's not the death of the music business as we know it, but the funeral isn't far away.

Wired, January 2000

The arguments over the digital delivery of music, after all, are a proxy for the future battle over all other forms of media, as the Internet becomes an increasingly important conduit for entertainment.

Wall Street Journal, 17 July 2000

INTRODUCTION

The Internet is an important and new way of marketing goods and services that goes beyond traditional distribution avenues. It is causing profound changes in the music CD market, which may also be replicated in markets for other goods and services. In this paper we examine the differences from physical markets in market characteristics such as pricing and potential changes in market structures.

THE MUSIC CD MARKET

The choice of music compact discs as the focal market in our study is driven by their commodity-like nature, popularity in the electronic marketplace and being a digital product in their essence. It is argued that for the class of products that are characterized by low asset specificity and ease of description, electronic markets are more efficient forms of coordination. Music CDs have lower asset specificity, are easy to describe and are, therefore, suited for electronic markets. Besides, a number of music CD stores have been set up on the Internet. The proliferation of this product could be due to the following reasons:

- suited to Internet demographics (well-off, educated consumers);
- able to make use of the medium (audio files) for consumer sampling;
- low product cost limits consumer and seller risks, also stimulates impulse buying; and
- a competitive market with a large number of buyers and sellers.

It has been reported that it costs a major label approximately one dollar to manufacture and package a CD, one dollar for distribution, between one and two dollars for royalties to the artist and songwriter, and five dollars for the retailer (Burnett 1996). Hence, there are major incentives for the large labels to knock-off the retailers from the value chain. The industry is highly concentrated with about 90% of the gross sales of recorded music worldwide coming from albums, singles and music videos owned or distributed by one of six multinational corporations: Time Warner, Sony, Phillips, Bertelsmann,

Abstract

In this paper we examine the market for music CDs to see how it is different from physical markets in terms of characteristics such as pricing, price dispersion and price dynamics, and what emergent market structures are taking shape. We find that the Internet market continues to show price dispersion despite the apparently near zero search costs for consumers. Retailers tend to have a different set of pricing strategies for mainstream and niche products thereby catering to distinct customer segments. Price dynamics alter over time with Internet retailers offering cheaper prices for niche products and employing more frequent and finer price changes. With growing support for digital distribution and peer-to-peer connectivity illustrated by the Napster community, it appears that value chain structures will evolve and market roles change over time to reflect the changes in value creation competency requirements.

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Thorn-EMI and Matsushita. The traditional distribution channels for pre-recorded music are retail shops, record clubs, rack jobbers, and ‘one-stops’ (Peralta and Rayport 1995). Retail shops consisting of large store chains and independent record shops account for a major part of the industry revenue.

The music CD market is particularly vulnerable to structural change as the underlying music product can be easily digitized, transmitted, copied and manipulated through relatively simple means. This has led to some of the early debate on intellectual property rights, copyright, pricing and distribution issues that are likely to arise with the marketing of products and services over the Internet.

THEORETICAL PERSPECTIVES

Market Characteristics – Pricing and Price Dispersion

It has been proposed that the Internet will ultimately play host to full-scale e-commerce – leading to more choices and lower prices for consumers, redistribution of profits in the favour of consumers increasing their surplus, and elimination of intermediaries in the distribution channel (Benjamin and Wigand 1995).

Neoclassical economic theory suggests that in the absence of transaction costs there should be pure price-based competition for homogeneous goods. In practice, there are frictions in the marketplace that prevent this from happening. The central implication of costly information gathering is that the equilibrium will not occur at the perfectly competitive price. Electronic markets, however, reduce transaction costs resulting in efficiency gains, and also reduce information asymmetries for buyers by helping them to be better informed about prices. In competitive market conditions the classical economic model suggests that market price will converge to marginal cost of sellers (i.e Bertrand model). When we compare the electronic marketplace with traditional shopping, the former offers a huge search space coupled with low search and transaction cost (Baty and Lee 1995). Since, in the electronic market, search costs are typically smaller than the brick-and-mortar market, it is proposed that price dispersion on the Internet will be lower than the price dispersion in the brick-and-mortar market.

Improve in retailer cost structures may also contribute to lower price levels in electronic marketplaces (Smith et al. 1999). Improved cost structures may lead to more efficient pricing as low market entry costs may limit the price premiums sustainable by existing market participants by increasing actual or potential competition (Milgrom and Roberts 1982). Also, favourable cost structures can lead to lower price levels in the long run by decreasing the underlying costs on which any price premiums are based. Thus it is hypothesized that prices in electronic markets will be lower than prices in physical markets.

Market Characteristics – Price Dynamics

Apart from price differences and price dispersion, we are also interested in price dynamics for electronic markets. Reduced menu costs for retailers in electronic markets allow retailers to adjust their prices with ease. Sheshinski and Weiss (1993) describe how menu costs affect the setting of prices and often explain the non-optimal prices in an economy. In electronic markets, price changes are supported through flexible information systems that will significantly reduce the effort required to change prices needed in physical markets. Menu costs are important from the standpoint of buyer welfare and market efficiency. High menu costs can lead to stickiness in prices – retailers will not be able to adjust prices in response to supply or demand changes unless the menu costs are low enough so that benefits offset the cost of a price change. In addition to considerations of menu costs, price dynamics is also influenced by changes in the competitive structure of the industry. Bailey (1998), for example, proposed that immaturity of the market may be a contributing factor based on the observation that during the 3 months following Barnes and Noble’s Internet entry on 19 March 1997, Amazon.com dropped its prices by nearly 10% to match the prices charged by their new competitor. Differences in cost structure or business models of industry participants might also lead to differences in pricing over time. For instance, firms may periodically offer price breaks to reduce inventory holding costs or the risk of obsolescence. In non-pure business models, firms may be able to reduce prices to build traffic to generate revenues through advertising or sales through other induced or non-planned purchases. Based on the hypothesized reduction in menu costs and changing competitive structure of electronic markets it is hypothesized that the rate of change of prices in electronic markets would be greater than in physical markets.

Market Structures

It has been proposed that electronic markets may lower coordination costs for producers and retailers, lower physical distribution costs, or eliminate retailers and wholesalers entirely (Benjamin and Wigand 1995). It has also been suggested that since electronic marketplaces favour buyers, in markets where sellers are highly concentrated or otherwise wield power over consumers, they will tend to oppose the development of market systems.

The major proposals of the ‘electronic market hypothesis’ (Hess and Kemerer 1994) are:

- Use of information technology will result in the development of electronic markets.
- Use of information technology will result in fundamental changes in market structure and intermediaries will be threatened.
• Customers will drive the movement towards electronic markets over electronic hierarchies.
• Markets will evolve from electronic hierarchies to biased electronic markets to unbiased electronic markets to personalized electronic markets.

Rayport and Sviokla (1995) observe that companies adopt value-adding information processes in three stages. In the visibility stage firms use information technology to better manage activities in their physical value chain. In the mirroring capability stage firms begin to implement value adding steps in the marketspace and in the third stage firms move on to develop new customer relationships by delivering value in new ways.

EMPIRICAL EVIDENCE

An extensive price comparison between electronic and brick-and-mortar markets can be found in a study by Bailey and Brynjolfsson. They compared prices of books, music CDs and software, but did not find much evidence that prices on the Internet were lower than prices in traditional retail shops. They explained the unexpected phenomenon as resulting from the following reasons: incomplete searching mechanisms on the Internet, different demographics of typical Internet users, an experimenting stage of many online retail shops, and online shops’ differentiation strategies based on other services such as delivery options and customized recommendations. Bailey (1998) found that price dispersion for books, CDs and software is no smaller online than it is in conventional markets. A more recent study by Brynjolfsson and Smith (2000) examined prices for books and CDs sold through Internet and conventional channels in 1998 and 1999. Unlike Bailey, they find that prices are 9 to 16% lower on the Internet than in conventional outlets – even after accounting for costs from shipping and handling, delivery, and local sales taxes. They found that prices for identical books and CDs at different online retailers differ by as much as 50%, and on average by 25% for CDs. However, when weighted with proxies for market share, they found dispersion to be lower in Internet channels.

We undertook a study of the music CD industry to examine market characteristics and structure of the Internet market and compare it to physical markets. We first listed music stores that have the largest collection of CDs on the Internet by using Internet search engines. Stores that carry special types of music (eg Latin Music, Foreign Music, etc.) were excluded, and only those that provided product and price information through a searching mechanism were selected. As a result, we identified nine online stores. While not all online stores release their exact market share and sales revenue information, two leading online music stores, which combined account for more than 80% of the market share, were included in the list. Brick-and-mortar retailers were selected based on size. Limiting ourselves to a single market area, a large metropolitan region in the US was selected, and five nationally recognized music chain-stores in the area identified. We specifically looked at two categories of CDs – mainstream products (current hit albums) that are expected to have current mass market appeal, and niche products (old hit albums) that are expected to appeal to narrower segments. We also considered two distinct time periods to enable a longitudinal analysis to be done. Finally we combined analysis within electronic and physical markets and across these markets. Overall, a total of 789 CD prices, 529 from the Internet and 257 from brick-and-mortar stores were collected over 43 different albums.

Our study confirms that price variance exists on the Internet even for the simplest commodity-type products. There are consistent 15 to 20% price differences for the current hits and 25 to 35% differences for the old hits. Besides, the dispersion on the Internet is not lower than in the physical market. The average percentage difference comparison shows that it is almost the same for current hit albums, but much larger for old hit albums on the Internet.

The results for a direct price comparison show mixed results. Current hit albums are cheaper in the brick-and-mortar markets. Of the 21 current hit albums, brick-and-mortar stores offered cheaper prices on the average for 19 albums. However the prices of niche albums tend to be cheaper in online stores. While the old (a year ago) data do not clearly reveal the differences, more current data indicated the dominant cheaper prices in the electronic markets (22 out of 22 albums both in terms of average prices and cheapest prices available).

The longitudinal data of our study suggests that the price variance on the Internet is not getting smaller, and may actually be increasing. For both old and current hit albums, the variances explained due to price dispersion increased. Since the first data collection we have witnessed an enormous increase in e-commerce volumes and emergence of a number of price comparison sites (eg mysimon.com, cnet.com, dealpilot.com), driving searching costs down. The results, however, indicate that the price dispersion is persistent.

Since our data were collected only at two points in time, we may not accurately assess the price dynamics of two markets. However, the results suggest that conventional markets have a very clear pricing strategy for the current and old-hit albums. They offer significant price breaks on the more popular products and increase prices once the products do not have sustained mainstream market appeal. They increased prices averaging 18% compared to a 4% price increase for the online stores. For more niche products, the brick-and-market did not change prices but online stores decreased prices by about 7%, which is statistically significant at the 99% level. The results also suggest that online stores may have much more dynamic pricing strategies. While conventional stores leave their prices for old-hit albums
unchanged (more than 85% of their album prices were unchanged), only 5% of old hit albums on Internet stores have unchanged prices. Additionally, Internet retailers show large variations in prices within the same category of albums as well as much finer price adjustments, indicating that they employ a relatively more dynamic pricing strategy.

**MARKET STRUCTURE**

The major distributors who account for about 85% of the music CDs sold in the United States, are the most important players in the music CD supply chain. The emergent structures would be influenced by the need to subvert the power wielded by these monopolists, using the power engendered by the web. In the traditional brick-and-mortar market retailers play an important role since physical infrastructure is important. In the electronic channel, information processing-based competencies may play an important role. In addition, music content has become a digital commodity, unbundled from its physical transport. Digital rights management has become an important issue because of the near zero marginal costs in duplicating digital content. Also, the nature of the digital or information good permits economic unbundling of products that have been hitherto bundled together. It allows for strategies based on fine-grained control over the customer experience and pricing.

We now illustrate some of emerging market structures. It is likely that a mix of these will be deployed – targeted towards distinct consumer segments and supply chain goals. At the moment it is not entirely clear which distribution models are going to be the most viable. Industry analysts suggest that the music model based on album sales is going to be replaced, but the market structure that will emerge as dominant is a big question (Stroud 2000). The record labels are currently embroiled in legal battles with intermediaries such as Napster and mp3.com. Napster is one of the most popular services on the Internet, with 57 million registered users. On any given day, an average 8.5 million used the service, and an average 1.6 million use the service at the same time (Wall Street Journal 2001). New efforts are underway to create avenues for unsigned artists to find a larger audience. Industry behemoths like Time Warner are also expected to seek direct distribution, possibly through its AOL reach.

*Conventional Pattern (eg cdnow.com)*

In a virtual market physical distribution is not important and in this scenario, the music labels may move into the virtual market and carve their own presence. This will enable them to save on retailer margins and gain greater control over their distribution chain. In the short term, the majors will not do this unless a critical mass of online customers is obtained, as they still need to distribute through retail chains in the larger physical markets which presently accounts for the major chunk of the distribution. So this might remain a channel for the dissemination of information about the music and advertising.

*Emergent Pattern 1 (eg sonymusic.com)*

In this scenario, a market or community of transactions emerges championed by a powerful retailer or by the music labels. This type of a scenario may be opposed by the retailers and possibly by the music labels as well. The failure of the in-store CD manufacturing concept promoted by Blockbuster Entertainment and IBM is a case in point. The proposed system would have allowed consumers to request and sample music collections and record a CD in real time. The concept failed because it failed to get support from the music labels and retail chains (Peralta and Rayport 1995).

*Emergent Pattern 2 (eg. mp3.com)*

This pattern corresponds to the Napster Model. The Napster client uses a community model called ‘Distributed Aggregation’ that allows users to interact with each other by sharing their musical libraries in a one-to-one manner. Other clients such as freenet, gnutella and imesh similarly create distributed peer-to-peer systems for sharing information. This model is closest to a direct to consumer model with a minimal role for music labels. While the model is currently mired in controversy because of copyright issues, this can serve as an effective independent channel for less-recognized artists to carve a niche.

In recent developments German publisher Bertelsmann AG shocked rival music publishers when it said it would cooperate with Napster, which was being sued by more than a dozen music publishers for breaching copyrights.

*Emergent Pattern 3 (eg Napster.com)*
It is now planning for an introduction of a subscription service of Napster music downloads over the Internet. Thus, it appears that music labels may still retain control over the distribution of music in its digital form, while freewheeling communities dedicated to peer-to-peer exchanges may exist on the fringes – predominantly offering music from less-recognized artists. In addition, there are technology developments that will allow consumers to share music or other digital content containing controls on its use. For example, a song might be played a few times free of charge, then be locked unless a consumer sends payment to a record label.

In addition to the existing players, in the electronic channel, new intermediaries may arise and add value in unique ways. For example, companies like infospace.com, bottomdollar.com and dealtime.com offer price-comparison tools. Other companies have created communities for music lovers and sites offering various kinds of resources for musicians.

CONCLUSION

Current developments in the electronic market for music have begun to indicate that the fundamental market characteristics are different from conventional markets, which may be caused by differences in terms of consumer base, purchasing methods, settlement methods, buyer–seller–intermediary role relationships, etc. Furthermore, the marketspace is in a state of flux with new developments in technology and consumer experience.

Evaluating products online may lead to ‘missing information’ regarding the characteristics of the product (Degeratu et al. 1998) and may lead consumers to rely more heavily on other signals of quality, such as brand. We, then, need to understand new marketing and pricing strategies that suit this new market structure. By empirically investigating pricing in brick-and-mortar and Internet markets, and comparing price differences for two different types of products, we find that differences between two markets might contribute to price dispersion and higher than expected average prices for Internet retailers. Above all, we find that the pricing structures of two different types of products are different – cheaper CD prices in the brick-and-mortar stores for popular albums and in Internet stores for the niche products.

We propose that differences in consumer base and preferences and sellers’ cost structures and marketing strategies need to be carefully examined to explain price dispersion and dynamic price behaviour for the two different types of products. Within electronic markets, pure price-based competition is thwarted because of retailer strategies and customer preference issues. A study by Clemons et al. (1998) argues that even a commodity-like product can have differentiation. Online CD stores can differentiate the product through shop credibility, promised delivery time, an easier searching mechanism, a refund guarantee, suggested products and product evaluation. The impact of those factors on the price and consumer choice can be an important research area. Another recent study by Bailey et al. (1999) shows that price dispersion is partly explained by firm strategy.

At the retailer end, segmentation may be based on information use profiling of consumers, for example, to determine their price sensitivity and employ discriminatory pricing. Also, the use of mixed models, that not only rely on revenues from selling products but also have other revenue streams like advertising, may lead to price differences. At the consumer end there may be natural segmentation due to differences in price sensitivity, familiarity/awareness of search tools, product/service preferences and risk profiles.

Structural differences between the electronic and physical markets are likely to arise due to the changes in the competencies and value added by different players. Also, the fundamental nature of the product and its economics varies in the two channels. We point to some differences:

- anticipated decoupling of the digital content from the physical carrier, leading to change in fundamental product characteristics;
- ease of unbundling and rebundling of digital goods;
- finer-grain control over the customer experience and dynamic pricing;
- reduced role of physical logistics and brick-and-mortar infrastructure; and
- increased role of value added information and information processing tasks.

Given shifts in the competencies needed from players in the supply chain there is likely to be a significant change in the structure of the music marketplace. We are likely to see a continuing role for large music labels with better digital rights protection as well as a significant role for intermediaries that are able to aggregate music content and consumer bases.

References


