

The Economics of Digital Bundling: The Impact of Digitization and Bundling on the Music Industry

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Over the last few years, the proliferation of digital music, the exploding popularity of MP3 format, and the emergence of the Internet as a viable distribution medium have disrupted the existing music format, pricing, and distribution standards. This has led to a popular belief that this digital transformation is the beginning of a sweeping change in the industry—that the power of current players will be destroyed and new music giants will be born. The recorded music industry, an approximately \$14 billion U.S. industry and a \$40 billion global industry,¹ is dominated by five major music companies: Sony, Warner Music, EMI, Bertelsmann Music Group, and Universal/Polygram. Together, they account for approximately 80% of the music sold worldwide. Although traditionally highly consolidated, mergers and acquisitions in recent years have intensified this trend, making what used to be the Big Six into the Big Five.² Clearly, the question is whether digitization is a discontinuity that will allow new players such as MP3.com and Napster to enter this market or whether these new technologies will simply continue the trend toward greater consolidation.

Drawing from recent literature on the theory of bundling digital goods,³ this article focuses on bundling digital music and its competitive implications. Bundling can be very effective as both a profit-maximizing tool and as a competitive weapon. By analyzing how competition in the industry might change, its attractiveness to new entrants, and some bundling strategies for competing in this market, this study finds that bundling will lead to greater industry concentration and increasing market power for the large music companies. Despite the disrupting forces caused by digital technologies, the economics of bundling, the control of content, and the existing indus-

¹ Data based on statistics from the Recording Industry Association of America (RIAA).

² Universal and Polygram merged in 1998. An agreement in 2000 between Warner Music and EMI was abandoned, in part due to antitrust concerns.

³ Digital goods are defined as products capable of being stored and distributed in digital form.

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try structure suggest the big labels will retain their power and the industry will continue to be concentrated, perhaps even becoming more so in the future.⁴

The Digitization of Music

The digitization of music began with the compact disc (CD). A true revolution because of its quality and low cost, the CD exploded onto the music scene in 1983, and within five years was selling as many units as the 12" vinyl LP. Of course, because the information on a CD is digital, it can be costlessly reproduced, but the physical CD remained the only feasible method for distributing such a large amount of data. Uncompressed, the hundreds of megabytes could not be stored on any widely available portable media, nor could it be efficiently transmitted, so music companies maintained their hold on the production and distribution of music.

CDs are essentially bundles of songs. Even hit albums contain both popular songs and relatively unknown songs. Recently, however, digital formats have forcibly unbundled the CD. Online, consumers can now purchase custom CDs containing only songs they wish to purchase, and eventually digital distribution will mean that consumers might desire individual songs rather than albums.

Music is a unique product because demand is highly heterogeneous. Individuals have differing perceptions of a particular album's value and are willing to pay varying amounts depending on their musical taste, but the industry generally only charges a single price. Thus, consumers who are willing to pay more are not required to, and consumers who are willing to purchase an album for a lower price walk away empty-handed. Of course, there are attempts to charge different prices to different consumers through music clubs, discount outlets, and promotions, but these are limited in effectiveness and are generally unable to prevent consumers with high valuations from purchasing at a low price.

So why not sell CD singles at different prices? The problem is that singles lead to greater valuation dispersion between music products. Listeners will be willing to pay more for those individual songs they like, while other songs will experience little demand. Unfortunately for the music industry, since everyone has different tastes, pricing individual songs to maximize revenue becomes extremely difficult. In fact, after peaking in 1997, CD single sales have fallen almost 50% in the last four years and now account for about 1% of CD sales [6].

Some contend that CD singles are burdened by a cost structure not much lower than full CDs, but that digital singles, because of their low cost, are a viable product. But how to price and promote individual songs? This also raises the question of how music companies will convince buyers to purchase the hundreds of thousands of songs produced each year. Without the efficiencies of promoting entire CDs at once, every song will need to be promoted. The potential multiplication in marketing costs is staggering. Digital bundling may be the answer.

Bundling

Many products can be thought of as bundles of components. Articles are bundled as magazines; shampoo is bundled with conditioner; and a computer is a bundle of

⁴ Other factors beyond the scope of this article include piracy or illegal sharing may affect this, but encryption, watermarking and well-priced legitimate services may keep the level of piracy in check.

hardware and software. Firms use bundling to achieve three main objectives: to increase revenues, reduce costs, and deter entry. The last objective, entry deterrence, we address in the next section on competitive implications. To illustrate how digital bundling can increase revenues, let's consider a simple example, say an album with only two songs. Fan A considers song 1 to be worth \$5, but is only willing to pay \$1 for song 2. Fan B is willing to buy song 2 for \$4, but is unwilling to pay anything more than \$2 to get song 1. If priced separately, the seller maximizes revenue with a price of \$5 for song 1 and \$4 for song 2, with total revenue equaling \$9. But if the songs are bundled together and priced at \$6, both fans will purchase the bundle and revenue will equal \$12. The reason this works is because there is a large difference in how much each is willing to pay. By combining the products, both consumers end up buying both products.⁵

Traditional price discrimination requires identifying how much consumers are willing to pay, applying multiple prices, and avoiding reselling. This is often difficult or impossible [12]. Bundling, on the other hand, achieves essentially the same result by averaging out the dispersions between consumer valuations. Thus, a single price captures a larger number of customers and generates more revenues [8]. By bundling high-value songs with low-value songs, the valuation per song approaches the mean for all songs. If consumers purchased all songs individually at their maximum valuation, the range between the highest and lowest values would be large, and there would be different revenue-maximizing prices for different songs. With bundling, demand for all the songs is made more homogeneous and predictable. This makes bundling an effective profit-maximizing tool.

Digital bundling can also achieve the objective of cost reduction. For digital music, once the first copy is recorded, producing additional copy and adding it to the bundle costs almost zero. This is the so-called zero marginal cost of digital goods. For such products with very low marginal costs, large-scale bundles can be a way of spreading out highly variable demands. Since digital music has both highly variable demand and low reproduction costs, it is a prime candidate for these large-scale bundles.

At the extreme, goods that cost nothing to reproduce—such as digital music files—are most effectively bundled into infinitely large bundles with a single price. The fact that adding a good to the bundle incurs no additional cost means that buyer valuation of the additional good would rise by more than the cost. For example, if including a digital copy of an old, classic song in a bundle encouraged a single buyer to purchase that bundle, revenue would rise while cost remained the same. Therefore, contrary to conjecture that digital goods lead to “micropayments,” larger bundles increase profit [1].

Infinitely large bundles are impractical in many cases, but such bundles may be the perfect product for music subscription services. For a flat fee, consumers could be given access to an extremely large database of songs. Even if consumers were uninterested in most of the bundle, demand for that bundled product would be much more homogenous than for any particular artist or song. This is similar to the model emerging in digital cable and digital satellite television: most people watch a small number

⁵ This is precisely the strategy that Microsoft uses to bundle its Word, Excel, and Powerpoint into the Office suite.

of channels, but the large number of channels means that the package has broad appeal at a single price.

Competitive Implications of Bundling

Bundling has powerful implications for competition and industry structure. We will look at how those companies capable of large-scale bundling compete with those that cannot. Bundling preserves the competitive strength of large firms by giving them an advantage in three key areas: competing for customers, competing for content, and deterring entry.

Regarding downstream competition for customers, bundling can be very effective as a competitive tool when the competition either is unable to bundle or has a smaller product bundle. When a new entrant selling a single good faces an incumbent offering a large bundle of goods, that seller faces a situation in which the bundler appears to offer the product for zero. If the new product has a substitute within the bundle, then to a potential consumer, it is included “for free” along with the other products in the bundle [2]. A bundle is therefore more profitable than an individual good. In fact, the more items in the bundle, the greater the profit. Because marginal costs are close to zero, the bundler will price so as to capture as much of the market as possible—any increase in sales is an increase in profits. Theoretically, in a digital goods market, the bundler will gain close to 100% market share. Naturally, this leads to greater industry concentration and increasing market power for the largest companies.

Unfortunately, the seller of the single product can only charge whatever additional value their product offers beyond the super-bundle that consumers already buy. If consumers have a music subscription bundle, they already have access to as much music as they want: justifying an additional purchase will probably be very difficult. This is almost surely true since there is a limit on how much music one individual can consume. Even the new Internet digital music distributors are at a cost disadvantage. A digital copy for the copyright holder is free; for all others it has a cost. “All the content is in the hands of five companies—it’s a very very scary thought,” said Philip Fracassi, Senior VP, House of Blues Digital [9].

Regarding upstream bidding for content, smaller bundlers are also disadvantaged. Because the large bundler can capture a greater profit, it can bid more than the non-bundler or small-bundler in competing for new talent. This is without even considering any economies of scale cost advantages that the large players may already enjoy in the music industry, such as marketing, licensing deals and access to distribution. As a matter of fact, the benefits from aggregation increase with the number of goods in the bundle, so the big players get bigger. Entrants are severely disadvantaged in signing new talent, since their smaller portfolios do not allow for the kind of efficient bundling available to the incumbents. At the same time, rising musical talent has few options when signing on with a music label. Most artists will still need large organizations to promote them to the widest audiences. The big companies can pay more and offer potential access to incredible market sizes: Universal already distributes more than half a billion CDs per year.

In pursuing new musical talent, the industry giants are in a position to sign the most desirable music acts because only they can offer the full range of promotional opportunities and music-related products. Along with CDs, there are often music videos, merchandise, and concerts. There are cross-promotional opportunities on

movie soundtracks and with other bands. Demand for music services coincides with demand for these other services, thus a new entrant offering only music distribution cannot offer everything artists need and consumers want.

Although the Internet may eventually allow musicians to sell digital songs directly to consumers, individual artists will never be able to offer compilations of multiple artists or bundles including the industry's catalog material. So, even though MP3.com has more than 75,000 aspiring bands on its site, "to have that superstar shot still requires a major record label pumping up the marketing," acknowledges Michael Roberts, CEO of MP3.com [3]. To most up-and-coming bands, super stardom means a big contract. But only the large labels can offer such lucrative contracts.

Finally, bundling can be extremely effective as an entry deterrent. This may be its most powerful effect. For a new music company considering entry into the market, the big bundlers already have a dominant share and are already offering packages with a much greater profitability than a single offering.

Very possibly, too, within the available super-bundles are products that could be considered as substitutes, or if the bundle is an unlimited-listening music service, then consuming the new product will require buyers to consume less of the bundle, but without receiving a discount. This is why the bundling competitor appears so formidable [12]. Needless to say, the lower profits facing the entrant hamper its ability to build a substantial product portfolio, unless it is willing to sustain losses in anticipation of future profits. The recent failure of many Internet companies clearly demonstrates the riskiness of such a strategy. Musicmaker.com, Scour.com and Riffage.com have gone out of business. Others, such as eMusic, Launch and even high-profile MP3.com have been acquired at fire-sale prices, and Napster's future remains uncertain [7].

To sum up the three effects discussed above, the large industry players wield tremendous bargaining power. These bargaining powers extend up and down the value chain, not just with upstream artists, but also with downstream buyers, and they reinforce each other. Increasing bargaining power upstream leads to increased power downstream. Access to greater distribution means a better negotiating position with new talent. From the perspective of a new band, this bargaining power with retailers, e-tailers, and consumers makes the major companies highly desirable as distributor of their material. And in the end, no buyer has any real bargaining power, since music has no perfect substitute: to obtain the latest Madonna CD, there is only Warner Music.

Conclusion

We have explored the implications of digital bundling in the music industry. Because music has such highly heterogeneous demand, large bundles can capture a greater proportion of consumers and maximize revenue. At the same time, bundling can be a highly effective competitive weapon because it decreases competitor's profits and makes entry more difficult.

Although many products do not lend themselves to these large digital bundles, music may be a product well-suited to such a model. Recent interest in music subscription services and continuing poor singles sales seem to bear this out. The two new mega-subscription services are perfect examples of large digital bundles: Sony and Vivendi Universal will launch Pressplay while Bertelsmann, EMI and AOL Time Warner have combined for MusicNet [5].

Contrary to the belief that digital distribution will allow many new firms to enter, bundling theory suggests that the large companies will continue their dominance of the industry. In fact, our study suggests that bundling can further increase their profits, while maintaining their hold on production and distribution. Judging by recent events, only antitrust concerns (including newly announced investigations into Pressplay and MusicNet) seem to be what's now stopping a highly concentrated industry from becoming even more concentrated.

These predictions are contingent on the transition of the major record labels—can they figure out the challenge of digital music and transform their historic business models to the Internet? While the majors have been slow to respond to the implications of digital music, recent industry developments seem to indicate they are finally taking proactive steps to secure their place in the online music arena [4]. Most labels continue to experiment with a variety of approaches, including selling CD singles, digital downloads, and newer subscription services. Whatever ultimately happens, the music industry will be a highly dynamic sector and an excellent testing field of the bundling theory.

Naturally, this article cannot answer all of the questions facing an industry undergoing profound change, but we hope this forms a basis to stimulate further discussions. The digitization and bundling technologies now impacting the music industry may have wider implications for other digital goods industries [11]. For example, e-books, digital videos and online magazines will likely confront the same challenges soon, where content digitization and bundling also herald a significant change in established business models.

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