

# THE MOVE TO ARTIST-LED ONLINE MUSIC DISTRIBUTION: EXPLAINING STRUCTURAL CHANGES IN THE DIGITAL MUSIC MARKET

Jesse Bockstedt, Robert J. Kauffman, and Frederick J. Riggins  
 Carlson School of Management, University of Minnesota, Minneapolis, MN 55455  
 Email: {jbockstedt; rkauffman; friggins@csom.umn.edu}

**Abstract.** We propose a model for understanding the transformation of the market structure in the recorded music industry value chain due to new forms of digital distribution. It takes into account the traditional music industry’s value chain and distribution network, and the product characteristics of digital music as they relate to consumer value creation. We showcase changes in market structure from various perspectives of the players in the music industry value chain. With this as background, we then present propositions that highlight forces at work in market transformation and how each player’s role in the digital music industry value chain is likely to change. We note the new tensions that arise around intellectual property rights for digital music with market structure changes. We support the propositions with illustrative mini-cases.

**Keywords:** Digital goods, digital music, intermediation, MP3, market structure, music distribution, music industry, online music, property rights, value chains.

## 1. INTRODUCTION

The music industry has experienced dramatic shocks that will ultimately transform its structure. The transformations have been sparked by new technologies and Internet use distributing *music as a digital good*. The MP3 audio format and the wide distribution network that has become available via the Internet are driving changes in the recorded music market structure and, thus, are simultaneously having significant impacts on the players in the traditional recorded music value chain. We examine the factors responsible for shaping this new marketplace and analyze stakeholder roles in the value chain in the move to distribution of digital music, as well as the intellectual property rights issues that arise.

### 1.1. The Growth of Digital Music

U.S. retail sales of recorded music dropped from \$13Bn in 1999 to \$10.6Bn in 2003 [28], while the popularity of digital music has grown. Meanwhile, Apple iTunes customers grew from 861,000 in July 2003 to 4.9 million in March 2004 [7], reflecting digital music’s new role as a “strategic necessity” of the music industry. Analysts predict that in five years 20% to 33% of all music sales will shift from CDs to digital distribution [28].

New devices that play digital audio formats, such as the Apple iPod and the Dell JukeBox, are increasing in popularity and driving demand for MP3-formatted music. Apple has sold over three million iPods and is offering multiple versions of the player to gain larger market share. Apple announced in July 2004 that its online digital download service, iTunes, has sold over 100 million MP3s. It is apparent that the digital music format is here to stay and, indeed, is quickly becoming the preferred product choice of music customers.

### 1.2. Current Digital Music Pricing

An empirical regularity of the current digital music industry is that pricing structures are similar industry-wide. There are two basic pricing strategies for digital music: *song purchases* and *subscription services*. The *de facto* standard price is currently 99¢ per song, or about \$10 per album, versus about \$10 per month for streaming digital audio. The market is in the early stages of development and prices may be set to encourage growth and adoption, to set up for long-run profit maximization. Table 1 reveals consistent prices for digital music.

**Table 1. Digital Music Providers**

PROVIDER	PRICE PER SONG	PRICE PER ALBUM	SUBSCRIPTION PRICE
Napster 2.0	99¢	\$9.95	\$9.95/month, 40 streams
Apple iTunes	99¢	\$9.95	NA
BuyMusic.com	99¢	\$9.99	NA
Listen.com (Rhapsody)	79¢ to burn to CD	NA	\$9.95/month, unlimited streams
Walmart.com	88¢	\$9.49	N/A
eClassical.com	49¢-79¢	\$7.99 compilations	N/A

The 99¢ per song pricing is interesting because providers currently make little or no money on each digital song purchase. Of the 99¢ per song, the owner of the recording, typically the record label, receives 70¢ to 75¢ for royalties or commissions. Credit card companies receive 27¢ per transaction. For single song transactions the service provider nets a 3¢ loss to a 2¢ profit, assuming no costs for providing the music [22]. This lack of profits suggests that the 99¢ price may be set to grow the market and each service provider’s share. The sale of 99¢ songs in specific MP3 formats such as Apple’s AAC and Microsoft’s WMA may be a lock-in strategy to

promote sales of complementary products such as expensive MP3 players.

With low profit margins in digital music, new transaction strategies are being developed to increase profits for digital music service providers. Peppercoin ([www.peppercoin.com](http://www.peppercoin.com)) uses proprietary technology to cut all-in transaction costs to 7¢ to 9¢ per transaction. iTunes waits to charge a customer's credit card until the end of the day, bundling purchases into one transaction.

Subscription services may become more popular due to Microsoft's new copyright protection tool, Janus [6]. Released in July 2004, Janus uses a hacker-proof clock to let consumers rent digital files for a predetermined amount of time. Bhattacharjee, et al. [4] argue that due to piracy, a digital music distributor may be able to maximize profits by offering a mixed-model purchase and subscription service.

### 1.3. Research Questions

We analyze the changing music industry from the perspective of each of the players in the industry value chain: *artists, record label/producers, intellectual property (IP) rights enforcement body, physical retailers, digital music retailers, and consumers*. We answer:

- What impacts will digital music have on the music industry market structure? How do property rights issues affect the predicted outcomes?
- Can current theory explain changes in the roles of the players in the recorded music value chain? Will property rights issues change their behavior?
- What other contextual evidence can we provide for the robustness of our theory for changes in the market structure of other digital goods industries?

We evaluate the literature on pricing and property rights issues associated with information goods, as well as market structure and value chain analysis. Based on our synthesis, we propose a new conceptual model for understanding the value chain. Our model considers the traditional music value chain, key product characteristics of digital music, and related property rights issues. It enables a series of propositions that provide a theoretical interpretation of the ongoing industry transformation, in terms of the roles of the market participants. We utilize exploratory research methods, specifically business and organizational mini-cases, to identify leading issues and theoretical relationships in the digital music market [2, 17].

## 2. BACKGROUND LITERATURE

We present three areas of theory associated with digital music distribution: *pricing of digital goods, market structure and value chain analysis*, and related *intellectual property rights theory* concerns.

### 2.1. Pricing in the Digital Economy

**Price Dispersion.** *Price dispersion* has received considerable attention in IS research. Brynjolfsson and Smith [9] argue that the Internet offers a low-friction channel for commerce, but other dimensions of Internet competition are important sources of heterogeneity among online retailers. Branding, trust and awareness perpetuate price dispersion. Clay, et al. [10] reported substantial price dispersion online. They suggested that Amazon.com can demand a premium price for online books because they differentiate themselves based on service capability and brand recognition. Clemons, et al. [12] found that product differentiation via online travel agents' services was a key driver of price dispersion.

The music market appears to be in a "pre-price dispersion state" that may change as consumers begin to show differentiated demand for songs in digital format and for the service providers. Galloway and Kinnear [19] found that older music could be offered at lower prices. Higher prices could then be reserved for new music, where demand is more inelastic and copyright protection is more strictly enforced. This suggests that pricing for digital music downloads should account for *popularity*. Thus, we expect to see formation of market segments, price-tiers and increasing price dispersion.

**Price Rigidity.** The current consistent pricing of MP3s suggest the existence of some basis for the observed *price rigidity*. Kauffman and Lee [26] suggest five bases for price rigidity on the Internet: *menu costs* of price adjustment, underlying *market structure, asymmetric information* in industry business processes, *demand-based drivers* (e.g., consumer expectations), and *contract-based drivers* (e.g., subscriptions).

Digital music services maintain databases of MP3s and their prices involve low menu costs. Contract-based price rigidities are not likely. The market is too young to have any long-term contracts established between digital music sellers and buyers. Industry price changes are easily viewed by competitors. Some firms maintain rigid prices to avoid signaling quality weaknesses to competitors or customers [38]. Online firms compete on price first and then non-price elements, such as customer service, promotions, and advertising [26]. Digital music is at an early stage of its development, so service providers have not established service capability or brand differentiation.

**Versioning, Bundling and Subscriptions.** Shapiro and Varian [36] describe three strategies for pricing information goods: *versioning, bundling, and fixed-fee pricing*. We have already seen fixed-fee subscription services for digital audio streams. Similarly, bundles of digital music tracks can be purchased for \$9.99. These are either a full album from one artist or some compilation of tracks compiled by the service provider.

Altinkemer and Bandyopadhyay [1] demonstrate flexible bundling strategies for digitized music based on an economic model. Different prices for different versions of digital music have not surfaced yet, although full-contents “try-before-buying” versions with less audio quality have appeared. An example is Naxos ([www.naxos.com](http://www.naxos.com)), a leading discount classical music label. Music versioning is also being considered in the physical CD market. BMG Germany began testing a new pricing model by offering three-tier versioned CDs: a €9.99 low-quality, no cover art version; a €12.99 medium-quality standard version; and a €17.99 high-quality version with bonus tracks and online extras ([www.bertlesmann.com](http://www.bertlesmann.com)).

For audio quality, an MP3 purchased from one provider is virtually the same as an MP3 purchased from another provider. Moorthy and Png [31] suggest that offering multiple versions of a physical good allows retailers to reach a market segment that may not already be served, yielding higher profits. Riggins [35] extends their model to an information good setting with tiered Web sites. However, the same characteristics of information-based goods that allow for easy versioning also allow unscrupulous users to violate copyrights by engaging in piracy activities. Wu, et al. [41] argue that it is even possible to fight the piracy of information goods with versioning. Still, versioning may become an effective tool in digital music pricing and marketing because it promotes self-selection.

## 2.2. Music Market Structure and Virtual Value Chain

We next consider virtual value chains and market structure vulnerability for digital music.

**The Virtual Value Chain.** A new virtual value chain characterizes the digital music market. Rayport and Sviokla [33] argue that there is a series of value-adding activities connecting a company’s supply side with its demand side. The traditional value chain treats information as a “supporting element of the value-adding process, not as a source of value (p. 76).” A *virtual value chain* exists when value-adding steps are performed through and with information. For digital music, there is no longer a physical product to manufacture. Instead the product itself is information: the digital music recording. “Companies that create value with digital assets may be able to reharvest them in an infinite number of transactions [33, p. 82]”. A song is recorded once, but in a digital format it can be replicated and distributed an infinite number of times with low costs for reproduction. Also, songs in digital format can be sampled and remixed benefiting record companies, artists, and creative consumers.

Benjamin and Wigand [3] identify four areas of opportunities and risks for stakeholders in online distribution. There are *benefits to consumers*: they have

free market access to suppliers that are connected via the Internet, which translates into more choices. There also are *lower coordination costs throughout the industry value chain*. This enables e-links between suppliers (i.e., artists and digital distributors) and consumers, which reduce transaction and coordination costs. *Lower physical distribution costs* are also possible. Digital music is reproducible at nearly zero cost, reducing distribution costs compared to physical formats of recorded music. Finally, there is potential for *redistribution and reduction in total profits*. With the changes come new opportunities for artists to bypass production of physical CDs and avoid royalty contracts that depend on recouping production costs. With lower costs, consumers may gain from lower prices while artists gain a share of the profits they have not obtained before. Meantime, record labels and production companies lose their shares. Thus, the changing structure of the value chain may have major impacts on the distribution of profits within the industry. Zhu [42] examined e-distribution for digital videos and found that, in the short term, more use of digital production and distribution technologies may result in significant cost reductions throughout the value chain. However, in the long term, digitization of film production and distribution may cause motion picture industry restructuring.

**Newly-Vulnerable Market Structures.** Changes in the value chain can drive changes in the underlying market structure and vice versa. Mahadevan [30] discusses the new market structures of Internet-based e-commerce and the accompanying business models. Digital music providers act as product/service providers by dealing directly with the end customer. The emerging digital music market supports dramatically reduced production and distribution costs. But technology allows them to disintermediate others players too, by cutting out unnecessary steps in the value chain. Market structures and value chains are subject to change when the channel of distribution changes to Internet-based selling.

Gosain and Lee [20] argue that the music market is especially subject to changes. Internet demographics of young, educated, and well-off customers are suited to music purchases. The Internet allows sampling of products using digital audio files. There are low consumer and seller risks due to relatively low product costs, which may lead to impulse purchases. And the Internet provides reach and connectivity within the music market for buyers and sellers. The Internet also supports an emergent virtual market in which the music labels and artists may move to distribute directly to consumers. The authors also identify five key differences between the physical and digital market channels: a decoupling of the digital content from the physical carrier; easy unbundling and rebundling for

digital goods; finer-grained control over the customer experience and dynamic pricing; less importance placed on physical logistics and brick-and-mortar infrastructure; and an increased role for value-added information and the support of information processing tasks. Each is apparent in digital music distribution.

Clemons, et al. [11] interpret the emerging competition between music companies and their star artists as a result of online distribution. They note that music is increasingly produced using digital technology and distributed on digital media (CDs) or in pure digital formats (MP3s). Some music is created, distributed and enjoyed without ever requiring physical production. Using the theories of *resource-based value retention* and *newly-vulnerable markets*, the authors argue that music labels are vulnerable to falling profits due to the potential increase in power of the artists because of digital technology. The digital music market is a *newly-vulnerable market*: newly easy to enter, attractive to attack, and difficult to defend [11, 13]. Dramatic technology change has reduced the necessary cost of resources. The market is attractive to attack due to the presence of cross-subsidies (star artists subsidizing unprofitable artists). It is difficult to defend because artists have opportunities to easily break away from record labels. Economic analysis using the Grossman-Hart-Moore *theory of incomplete contracts* [23, 34] also has confirmed that in the new music virtual value chain, star artists' increased bargaining power should lead to profit-sharing arrangements that are more favorable to star acts. The vulnerability of record labels and production facilities is forcing these players to adopt new strategies to maintain profit levels. The record labels can provide promotional and production management services, offer piracy prevention and copyright protection services, or they can attack online channels to lock out independent distribution.

**2.3. Intellectual Property Rights**

With information-based goods such as digital music, software, news and e-books, most of the costs are in the development of the first copy of the good. Once developed, information-based goods can be reproduced and distributed at essentially zero cost. This unique aspect of information goods allows the producer to version the good to create free samples for potential buyers. However, information-based goods also allow pirates and file sharers to illegally copy and use the good without the producer's knowledge. Peer-to-peer (P2P) file sharing networks such as Napster, Gnutella, and KaZaA threaten the very business model of information-based goods producers by potentially eliminating all sales revenues. The popularity of these networks has been evident. Napster went from zero users in June 1999 to 20 million in July 2000. Enforcement of intellectual property (IP) rights, thus, is crucial to the viability of

online information-based goods markets. Conner and Rumelt [14] have shown that in the software industry, under certain circumstances, piracy can be beneficial to both firms and consumers by raising profit levels and lowering selling costs. Jiang and Sarkar [25] expand this idea for digital music and show that some piracy may be useful in certain circumstances to encourage usage. Shapiro and Varian [36] point out that a key managerial tradeoff in these markets is to balance the value created by allowing some liberality in terms of distribution while maintaining a viable revenue model.

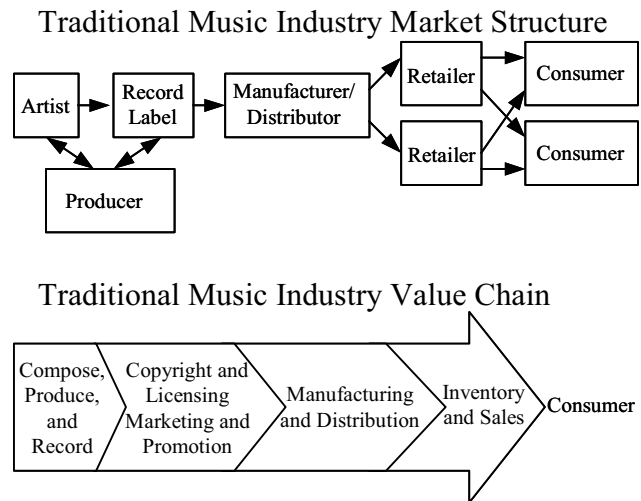
**3. THEORETICAL DEVELOPMENT**

We next explain the changes that are occurring in the music industry value chain.

**3.1. Conventional Recorded Music Value Chain**

Figure 1 shows that the main drivers for value in the traditional recorded music value chain include copyright and licensing (airplay), production, distribution and inventory, and promotion and marketing costs.

**Figure 1. Traditional Music Distribution Value Chain**



Record labels make the most profit and have the most control over the value chain. According to Clemons, et al. [11], record labels retain 35% or more of the revenues received from retailers. However, with the advent of digital music formats, there are many opportunities for changes in the recorded music distribution value chain. Kauffman and Walden [27] argue that technology enables products, business processes and markets. In addition, markets are defined by the business process that permits transactions of specific products. With digital music, the new MP3 audio format standards and the Internet have enabled new music products and distribution processes. These, in turn, have reshaped the existing market structure.

### 3.2. Digital Music Product Characteristics

Digital music characteristics influence market structure. The digital music format is cheap to reproduce and transfer, and is portable and easy to store. For these reasons, it is subject to significant IP rights concerns. The quality of experience with using the digital music product is virtually the same as with the physical medium. And, the digital format allows music to be separated into individual songs and rebundled in unique ways to form new products. These characteristics enable new business processes and products in the music industry. Table 2 outlines how these characteristics impact the players in the music industry value chain.

### 3.3. The Digital Music Virtual Value Chain

Digital technologies in the music market will drive changes in the underlying market structure and value chain. The adoption and diffusion of digital music, reduction in “distance” between artists and consumers, wide distribution networks through the online channel, reduced costs of replication and production, and copyright protection and piracy issues will affect the music market structure. Moreover, the nature of the new digital music format will be a key driver of the new virtual value chain in the industry.

**Table 2. Digital Music Product Characteristics**

CHARACTERISTIC	PLAYERS AFFECTED	HOW THEY ARE AFFECTED
Easily reproduced	Record label	Low manufacturing costs
	Artist, record label	High cost to make “master” Low break-even
Easily transferred	Record label	Low distribution costs
	Consumer	Cheap, high quality product
Effective electronic format	Digital music retailer	Low inventory costs Low menu costs
	Consumer	Easy pre-purchase sampling Likes high portability Values high compatibility Demands additional product features: artwork, lyrics, etc.
Equivalent quality	Consumer	More product options
	Physical retailer	New entrants can compete
Separability	Artist, label	Song “single” is the product

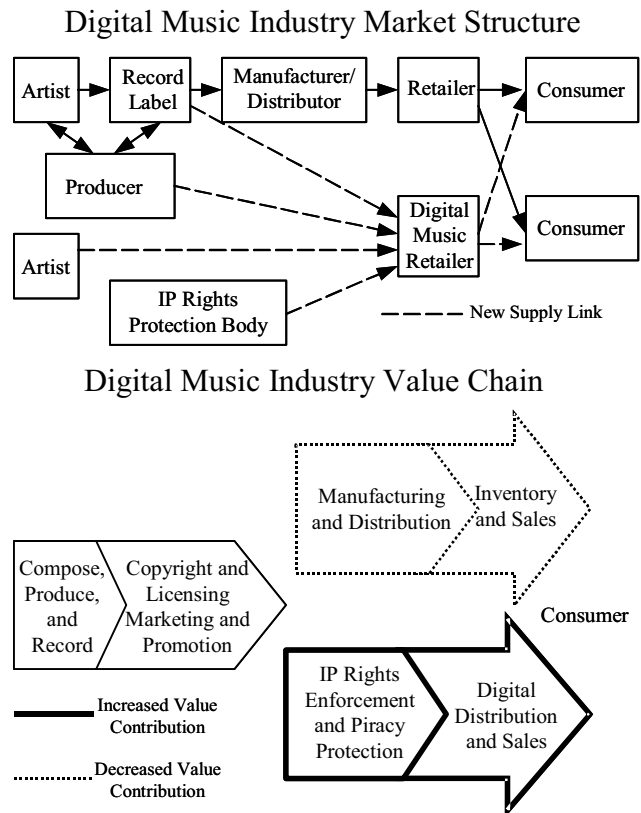
Five activities occur in the *virtual value chain*: gathering, organizing, selecting, synthesizing, and distributing information [33]. Clemons and Lang [13] provide a detailed analysis of the impact of changing digital technologies on the five value added activities identified above. For digital music, the creation and recording of music and the signing and promotion of artists represent the gathering and organizing steps. Selection and synthesis occur when the artists and/or record labels produce digital recordings. Distribution of

information occurs over the Internet when consumers purchase digital music files from a distributor and download or stream content.

Intermediaries are economic agents that facilitate transactions between suppliers and buyers. They set market-clearing prices, make purchase and sales decisions, manage inventories, supply information and coordinate transactions to provide the underlying *market microstructure* [37]. Their role in the music market is changing as a result of the digital music format. Physical retailers are being replaced by digital music retailers. Manufactures and distributors are becoming obsolete as record labels, producers and artists can go directly to digital music retailers without producing a physical product, reducing the “distance” between the music supplier and the consumer.

Figure 2 sketches our model of the music industry value chain and market structure with digital music.

**Figure 2. Digital Music Distribution Value Chain**



The added value to the music product from manufacturing and distribution is decreasing, but *digital music retailers* add new value. With Internet distribution and music piracy, they can now add value through marketing, promotions, copyrighting and licensing. There is also value added through enforcement of IP rights and piracy prevention. As a result, the channel power dynamics change. Plus, there will be new

incentives as the roles of the players in the value chain shift. The changed value chain is likely to be affected by issues that relate to IP rights.

#### 4. PROPOSITIONS AND RELATED EVIDENCE

We next specify propositions for how each player is affected based on exploratory mini-case evidence. They aid theory development and pre-empirical analysis of issues and relationships in the digital music market.

##### 4.1. Artists

New digital recording and distribution technologies present opportunities for artists to adopt a do-it-yourself approach. Before, artists depended on labels for access to production and distribution capabilities. With digital technologies and the Internet, artists can produce, record, and distribute music without help from record labels. A leading example is ArtistLed, Inc. ([www.artistled.com](http://www.artistled.com)), which focuses on the Internet. The company calls itself “classical music’s first Internet recording company.”

A survey [32] reveals that 83% of musicians and songwriters provide music samples online. Free downloads sell more music and increase concert attendance. Artists have incentives to compete directly with record labels and producers [11]. The digital music format has had a positive impact on the artist, who can leverage the technology for further gains. Gosain and Lee [20] anticipate a decoupling of digital content from the physical carrier. Artists can distribute music directly to consumers through the Internet, bypassing intermediaries involved in the production and distribution of physical music media. They determine whether they need help with distribution or can go it alone, and will benefit from choosing between periodic song-by-song releases or whole-album releases. The *separability* of the digital music format allows consumers the option of buying individual songs through digital music retailers. This gives artists incentives to unbundle full-length albums and focus on producing singles for sale.

Consider these propositions related to the artists:

- **Proposition 1a (Artist-Led Direct Distribution).** Due to new incentives more artists will form their own online direct distribution capabilities.
- **Proposition 1b (Digitally-Intermediated Distribution).** Due to new incentives more artists will contract with digital music retailers for online distribution of their music.
- **Proposition 1c (Music Singles Production).** Due to new incentives more artists will focus on producing singles, not bundled music, for online distribution.

The following mini-cases illustrate these propositions.

**Mini-Case 1a (Artists): “Beastie Boys Link to iTunes from Web Site.”** Prior to their full-length album release in June 2004, the Beastie Boys made use of their Web site to promote the music it contained. The group’s site linked to Apple iTunes, where it was possible for a consumer to immediately purchase their music in digital format. The Beastie Boys continue to leverage their Web site to sell digital copies of their music, cutting out the distribution and manufacturing middlemen. **Source:** [www.beastieboys.com](http://www.beastieboys.com).

**Mini-Case 1b (Artists): “Freezepop—A Do-It-Yourself Approach.”** Freezepop, a Boston group, recorded an album using a \$300 sequencer, made two animated videos using inexpensive Shockwave Flash, and developed a fan base by posting news, photos, and tour dates and offering merchandise on their Web site. The group brokered download-only distribution deals with online music stores, such as iTunes and Napster, avoiding the production costs. This extreme example demonstrates the opportunities artists have in the music industry through digital technologies. **Source:** [8].

**Mini-Case 1c (Artists): “ArtistLed, Inc., the Living Room Record Label.”** “[T]he Internet ...favors cottage industries such as ArtistLed, the living-room record label belonging to the husband-and-wife duo of cellist David Finckel, and pianist Wu Han. Finckel and Wu produce their own CDs of cello sonatas ... [sell] exclusively through their own Web site. Their costs are minimal and they pocket 100% of the sale price, so they do not need to sell many copies to break even. ... ‘Where do you think the clerk in an ordinary store would file our CDs?’ asks Wu. ‘Under ‘Miscellaneous Cello.’ But the Web site is like having our own store.” **Source:** [16].

##### 4.2. Record Labels / Production Companies

Record labels and production companies may lose in this new environment of digital music distribution. As artists gain control, traditional producers and intermediaries will lose profits—unless they develop ways to retain profits, emphasizing value that artists cannot provide themselves. These services include promotion and marketing management, production consulting services, and copyright enforcement services [11]. Since digital music is virtually costless to reproduce and transfer, as manufacturing and distribution costs are removed, artists will require less upfront investment to produce their music and record labels will lose power over the value chain. The labels, thus, have an incentive to claim a new stake, as we point out with the following propositions for the record labels.

- **Proposition 2a (Service Alliances).** Record labels will invest in digital distribution services by either (i) forming alliances with existing digital music retailers or (ii) by launching their own services.
- **Proposition 2b (Copyright and Promotion).** Record labels will add value by focusing more on copyright, licensing, marketing, and promotion services.

**Mini-Case 2a (Record Labels/Production Companies): “Bertlesmann Forms Alliance with Napster.”** Bertlesmann, owner of BMG Entertainment (a major record labels), formed an alliance with the P2P file-share service. Napster 2.0 is a (now) legal pay per download and subscription service. BMG’s alliance signaled the power of the digital music format in the eyes of the record labels. **Source:** [5].

**Mini-Case 2b (Record Labels/Production Companies): “Sony Launches Download Service.”** Sony launched its online music service, Connect, on May 4, 2004 to compete with leader, Apple iTunes. Sony produces music through its record label, Sony Music, and manufactures electronic devices that play digital music formats. Connect will provide digital music downloads that are only compatible with Sony devices using flash media technology. **Source:** [21].

#### 4.3. IP Rights Protection Body

Since digital music is easy to reproduce, there is a need for IP rights enforcement to prevent piracy. Several technical advances, such as encryption, watermarking, traffic volume monitors, and time-triggered decay mechanisms, can help prevent illegal copying of digital files. Even so, Clemons, et al. [11] note that the music industry can add value to the digital music value chain by developing a contracting and legal mechanism to stamp out digital music piracy. This will include new and tougher enforcement of existing copyright laws and perhaps the creation of new copyright laws for the digital age. The new IP needs of the music industry will be met by legal, government, and corporate players. In our conceptual model we incorporate a new entity called the “IP Rights Protection Body.”

- **Proposition 3 (IP Rights Enforcement).** Legal bodies will contribute to the value chain by enforcing IP rights and fighting piracy of digital music.

**Mini-Case 3 (IP Rights Protection Body): “RIAA Sues Napster.”** In November of 1999, the RIAA filed a lawsuit against then upstart Napster for the illegal distribution of copyrighted music. This case against the P2P pioneer marks the beginning of legal efforts to protect intellectual property rights in the digital music industry. **Source:** [39].

#### 4.4. Physical Retailers

Brick-and-mortar retailers stand to lose more customers unless they offer new products and services. Physical logistics and infrastructure will be less important as the digital goods grow in popularity [20]. In order to avoid becoming obsolete, brick-and-mortar music stores will need to sell an “experience” to the customer, not a specific digital music product. Combining nightclubs, tattoo parlors, workstations, and live performances with the traditional music store are possible ways to add value to the customer experience.

- **Proposition 4 (Brick-and-Mortar Customer Experience):** Brick-and-mortar music retailers will diversify their product offerings and enhance their customers’ experience to retain them.

**Mini-Case 4 (Physical Retailers): “FYE Stores Use Technology to Attract Customers.”** Trans World Entertainment Corp. installed 1,250 viewing stations at its 600 mall stores. The viewing stations let consumers preview games, movies, and music prior to purchase. FYE sees the stations as a marketing tool that allows sales staff to provide *personalized assistance* to customers. The music retailer is also diversifying, by stocking more video games and DVD titles. **Source:** [40].

#### 4.5. Digital Music Retailers

Digital music retailers are building installed bases of customers. As the number of consumers increases, digital music providers’ control over the costs associated with selling music will increase. Unbundling and rebundling will be easy for digital goods, enabling more fine-grained control over the customer experience and dynamic pricing [20]. Online retailers differentiate themselves through brand, services and trust, as in the online book, CD, and travel industries [9, 12]. Versioning and bundling are ways for online retailers to offer unique products to meet demands with varying levels of willingness-to-pay across customer types.

Thus, digital music providers have profit incentives for differentiating themselves with product versioning, services, and brand. Digital music retailers can offer services such as recommender systems, versions based on audio quality or copyright restrictions, and product extensions such as downloadable lyrics. “Separability” of digital music products provides an opportunity for the sellers to offer unique bundles to consumers.

- **Proposition 5a (Digital Music Retailer Differentiation).** Digital music retailers will differentiate themselves by offering new services, product versions and extensions, and unique bundles of music.

- **Proposition 5b (Digital Music Price Dispersion).** Digital music retailer differentiation will result in price dispersion in the online digital music market.

Two mini-cases on the innovations of Apple iTunes for pricing and customized playlists illustrate.

**Mini-Case 5a (Digital Music Retailers): “Apple iTunes’ Custom Playlists for Download.”** Apple iTunes offers playlists designed by celebrities and staff for download. Playlists have individual tracks from various artists based on a theme. For example, a consumer can download a Barry Manilow Playlist. Or, a consumer can download the Totally 80s Playlist, which includes 1980s pop songs. The separability of digital music into individual songs gives retailers the opportunity to create unique product bundles. **Source:** Apple iTunes, [www.apple.com/itunes](http://www.apple.com/itunes).

**Mini-Case 5b (Digital Music Retailers): “Apple iTunes Tries New Pricing Strategies.”** Apple iTunes has priced single songs at 99¢ and albums at \$9.99. Newer albums have been priced higher. For example, Aerosmith’s newest album was priced at \$11.99, while Joe Satriani’s newest release was \$14.99. Some record executives are eager to test *tiered-price models* in the digital music market. **Source:** [7].

#### 4.6. Consumers

Download services have changed physical CD sales. The consumer now has the option of buying one song for 99¢, rather than buying a whole CD for \$15.99. There is no loss of utility: the consumer purchases only the songs that she wants, creating her own bundles. Rather than relying on a record company or artists to assemble a set of songs into an album, the consumer can now pick songs from various artists and assemble a bundle of \$15 worth of music to her own tastes.

Current MP3 players hold very large amounts of music, making music collections more portable and transferable than ever before. Also, the MP3 format allows the consumer to turn multiple devices into music players. Consumers also can listen to digital music on PDAs, laptop computers, desktop computers, and mobile phones, and MP3s can be converted and burned to CDs for play on standard CD players. The MP3 may be *music’s first universal format*. Downloading and purchasing digital music is easy, only requiring a PC connected to the Internet. The format gives a consumer instant access to thousands of music tracks.

Audiophiles claim there is loss of quality, but most people hear no difference in quality with digital music vs. a physical CD. Unlike other digitized goods, the interface for digital music is the same as for its physical counterpart. Digital music is experienced through speakers and is listened to, the same as a physical CD. Recording or “ripping” digital music at 96 kbs or higher provides similar audio quality as a physical CD. This suggests why digital music has been a success, while digitized text products have not. Digital text products have changed the reading interface, such that a reader no longer reads from a paper copy, but from a luminous screen. Finally, like any successful new technology, there is “hype” associated with digital music downloads. Digital technologies have increased consumers’ bargaining power. Lee [29] shows how the popular P2P systems increased consumer power and Hughes and Lang [24] argue that the Internet has allowed consumers to organize into powerful networks to build their bargaining power. Digital music users are setting trends in technology and music that analysts believe will continue, with many new users attracted whose adoption will persist.

- **Proposition 6 (Consumer Adoption):** Due to the new incentives consumers will continue to adopt and purchase digital music as more services and products are introduced. As a result, digital music will become the dominant format for recorded music products.

**Mini-Case 6a (Consumers): “The 40G iPod.”** Apple sells the most popular digital music player on the market, the iPod. It comes in capacities from 4 to 40 GB. A 40GB iPod can hold 10,000 songs, equivalent to 670 music albums. iPod owners can carry a library of music in their pocket. The portability of the digital music format makes this possible. But at current prices—99¢ per song—it would cost about \$10,000 to legally fill an iPod. **Source:** Apple Computer, [www.apple.com/ipod](http://www.apple.com/ipod).

**Mini-Case 6b (Consumers): “iTunes Popularity Grows Exponentially.”** Apple iTunes increased its downloader base from 861,000 in July 2003 to 4.9 million in March 2004. Because of this success, Sony, Microsoft, Virgin, Yahoo—and even AOL—are all making plans to enter the market. **Source:** [7].

## 5. DISCUSSION

The digital music market structure has implications for strategy and management in the music industry. From our propositions and mini-cases, it should be apparent to the reader that power is shifting. Artists, consumers, and digital music retailers are gaining more control. Table 3 summarizes the shifts in power that are in the works. This leads to several strategic opportunities for the players in the music industry.

Digital music sellers make little profit with song sales. Easy transfer and reproduction leave songs vulnerable to piracy, and P2P file sharing has hurt artists and record labels. It is crucial (as with Recording Industry Assoc. of America lawsuits in 2003) for the key players to enforce IP rights restrictions, and promulgate effective copyrights and licensing for digital music distribution. Similarly, technology firms can impact the music industry through innovation. Microsoft’s Janus technology is a technology company’s effort to enter the music industry and provide tech support for digital property rights protection [18].

Though digital music has advantages over physical formats, the product is incomplete. Digital music does not include some of the important attributes of the physical CD. These include artwork, lyrics, liner notes, and additional content found in enhanced CDs (video games, desktop wallpaper, video clips). But these can be made available in a digital form for distribution. The Beastie Boys represent a good example. They offer downloadable lyrics on their Web site to accompany new singles. The value chain players should differentiate the definitions of digital music products, which will affect the contents and prices of digital music, and how the

**Table 3. Power Shifts Among Recorded Music Market Players**

PLAYER	CONVENTIONAL VALUE FLOWS	DIGITAL MUSIC VALUE FLOWS	POWER CHANGE
<b>Artist</b>	Music composition (creativity) Recording of music Performances and appearances	Composition, performance (creativity) Recordings, performances, appearances Production and distribution arrangements	More control of production, distr. Potential increase in profits Decreased copyright protection
<b>Label and Production Company</b>	Copyright enforcement Produce, mfg. of recorded music Distribution, mktg., promotion	Copyright enforcement Marketing, promotion, advertising	Loss of control over production and distribution Potential decrease in profits
<b>IP Rights Enforcement Body</b>	Limited intellectual property rights enforcement	Intellectual property rights enforcement Piracy prevention Prosecution of music piracy cases	Increase control over the legal distribution of digital music
<b>Traditional Retailer</b>	Distribution to customer Advertising	None	Loss of customers/sales Decrease in profits
<b>Digital Music Retailer</b>	None	Distribution to customer Advertising Services (recommendations, search, etc.)	Growth of digital music market Potential increase in profits Increased competition
<b>Consumer</b>	Purchase music in physical format	Choice: purchase physical format or digital format, or pirate digital format	New supply channel More product choices More power over prices

market is segmented. Bundling is a key strategy for offering unique products to customers. The digital single-song product also allows retailers and consumers to define their own bundles of music.

There are unique new ways to do online marketing with digital music. Digital music’s only distribution channel is the Internet. Players in the music industry should consider opportunities to advertise and attract customers online to this channel, and explore the creation of strategic alliances. Online digital music retailers can form exclusive alliances with artists or record labels to attract a fan base to their store. Dai and Kauffman [15] showed this approach worked for B2B procurement e-markets to acquire installed bases of buyers and sellers.

**6. CONCLUSION**

We offered a high-level assessment of the changing market structure in the online digital music industry. Our contribution is unique. Our theoretical interpretation is based on value chain analysis, market structure characteristics, and the different stakeholder perspectives of each player in the recorded music market. This led us to state a series of propositions that characterize some further changes that are likely to occur. We also identified change drivers and provided real world mini-cases that lend support to our theoretical interpretations. We also suggested strategies the players may use to deal with the changing market as a result of digital music distribution. This work is relevant to IS and Marketing researchers and managerial audiences. It provides perspectives on the emergence of a new market and identifies potential drivers for value creation.

We mostly focused on popular music in this analysis, but this story could well have been told for classical music. eClassical.com ([www.eclassical.com](http://www.eclassical.com)) offers single downloads of classical performances and

compilations of various performances. Prices for singles are slightly lower than our pop music examples—only 49¢, instead of 79¢ per song. Pop music titles are like *bestseller books*, while some classical music titles are more like *steadysellers* (e.g., Jane Austen’s classics). Hence, price differences occur, as we see in bookstores. Future research may consider the two main pricing strategies for digital music: *pay per song download* and *subscription services*. There are many opportunities to explore consumers’ willingness to pay in the context of illegal file sharing and piracy.

Though the conceptual model presented in this paper is intended for the music industry, it is applicable to other industries. In particular, the quickly-growing downloadable movie market has similarities. Digital movie downloads provide the same interface and user experience as traditional DVD and videocassettes. Like digital music, digital movies are easily reproducible and transferable. Movielink.com ([www.movielink.com](http://www.movielink.com)) is one example. It offers downloadable movies via broadband connections. We expect that trends in the movie industry will mimic those in the music industry.

**REFERENCES**

- [1] Altinkemer, K., Bandyopadhyay, S. “Bundling and Distribution of Digitized Music Over the Internet,” *J. Org. Comp. and Elec. Comm.*, 10, 3, 2000, 209-224.
- [2] Benbasat, I., Goldstein, D.K., Mead, M. “The Case Research Strategy in Studies of Information Systems,” *MIS Quarterly*, 11, 3, 1987, 369-386.
- [3] Benjamin, R., Wigand, R. “Electronic Markets and Virtual Value Chains on the Information Superhighway,” *Sloan Mgmt. Rev.*, 36, 2, 1995, 62-72.
- [4] Bhattacharjee, S., Gopal, R., Lertwachara, K., Marsden, J. “Economics of Online Music,” in *Proc. 5<sup>th</sup> Intl. Conf. Elec. Comm.*, Pittsburgh, PA, Sept. 2003.

- [5] Borland, J. "Napster Launches, Minus the Revolution" *CNET News*, October 9, 2003.
- [6] Borland, J. "Microsoft's iPod Killer?" *CNET News*, April 2, 2004.
- [7] Borland, J., and Fried, I. "iTunes Ushers in a Year of Change," *CNET News*, April 26, 2004.
- [8] Boutin, P. "We'd Like to Thank Our PC," *Wired* 12, 3, March 2004, 74.
- [9] Brynjolfsson, E. Smith, M. "Frictionless Commerce? A Comparison of Internet and Conventional Retailers," *Mgmt. Sci.*, 46, 4, 2000, 563-585.
- [10] Clay, K., Krishnan, R., Wolff, E., Fernandes, D., "Retail Strategies on the Web: Price and Non-Price Competition in the Online Book Industry," *J. Ind. Econ.*, 50, 3, 2003, 351-367.
- [11] Clemons, E.K., Gu, B., Lang, K.R. "Newly Vulnerable Markets in an Age of Pure Information Products: An Analysis of Online Music and News," *J. Mgmt. Info. Sys.*, 19, 3, 2002, 17-41.
- [12] Clemons, E.K., Hann, I., Hitt, L. "Price Dispersion and Differentiation in On-Line Travel: An Empirical Investigation," *Mgmt. Sci.*, 48, 4, 2002, 543-549.
- [13] Clemons, E.K. and Lang, K.R. "The Decoupling of Value Creation from Revenue: A Strategic Analysis of the Markets for Pure Information Goods," *Info. Tech. and Mgmt.*, 4, 2003, 259-287.
- [14] Conner, K. and Rumelt, R. "Software Piracy: An Analysis of Protection Strategies," *Mgt. Sci.*, 37, 2, 1991, 125-139.
- [15] Dai, Q. and Kauffman, R.J. "To Be or Not to B2B: Evaluating Managerial Choices for E-Procurement Channel Adoption," *Info. Tech. Mgmt.*, 2005, in press..
- [16] Davidson, J. "Saved By the Net? Classical Musicians—Long Facing Declining Audience—Hope to Find New Life," *Newsday*, February 1, 1998.
- [17] Eisenhardt, K. "Building Theories from Case Study Research," *Acad. Mgmt. Rev.*, 14, 4, 1989, 532-550.
- [18] Foley, M. J. "Microsoft Opens Door on 'Janus,'" *Microsoft Watch*, May 3, 2004.
- [19] Gallaway, T., Kinnear, D. "Unchained Melody: A Price Discrimination-Based Policy Proposal for Addressing the MP3 Revolution," *J. Econ. Iss.*, 35, 2, 2001, 279-287.
- [20] Gosain, S., Lee, Z. "The Internet and the Reshaping of the Music CD Market," *Elec. Mkts.*, 11, 2, 2001, 140-145.
- [21] Graham, J. "Sony Hopes to Strike Chord in Online Music," *USAToday*, May 4, 2004.
- [22] Guterman, J. "Digital Downloads: Profitless Prosperity?" *Business 2.0 Online*, Dec. 10, 2003.
- [23] Halonen-Akatwijuka, M., Regner, T. "Digital Technology and the Allocation of Ownership in the Music Industry," in *Proc. Conf. Royal Econ. Soc.*, Swansea, UK, April 2004.
- [24] Hughes, J. and Lang, K.R. "If I Had a Song: The Culture of Digital Community Networks and Its Impact on the Music Industry," *J. Media Mgmt.*, 5, 3, 2003, 180-189.
- [25] Jiang, Z., Sarkar, S. "Free Software Offer and Software Diffusion: The Monopolist Case," in *Proc. 24<sup>th</sup> Intl. Conf. Info. Sys.*, Seattle, WA, December 2003.
- [26] Kauffman, R., Lee, D. "Should We Expect Less Price Rigidity in the Digital Economy?" in *Proc. 37<sup>th</sup> Hawaii Intl. Conf. Sys. Sci.*, Los Alamitos, CA, IEEE Comp. Soc., 2004.
- [27] Kauffman, R. J., Walden, E. A. "Economics and Electronic Commerce: Survey and Directions for Research," *Intl. J. Elec. Comm.*, 5, 4, 2001, 5-116.
- [28] Keegan, P. "Is the Music Store Over?" *Business 2.0 Online*, March 2004.
- [29] Lee, J. "An End-User Perspective on File-Sharing Systems," *Comm. ACM*, 46, 2, 2003, 49-53.
- [30] Mahadevan, B. "Business Models for Internet-Based E-Commerce: An Anatomy," *Cal. Mgmt. Rev.*, 42, 4, 2000, 55-69.
- [31] Moorthy, K.S., Png, I.P.L. "Market Segmentation, Cannibalization, and the Timing of Product Introductions," *Mgmt. Sci.*, 38, 3, 1992, 345-359.
- [32] Rainie, L., Madden, M. "Preliminary Findings from a Web Survey of Musicians and Songwriters," *Pew Internet and American Life Project*, Washington, DC, May 2004.
- [33] Rayport, J., Sviokla J. "Exploiting the Virtual Value Chain," *Harvard Bus. Rev.*, Nov.-Dec. 1995, 75-85.
- [34] Regner, T. "Innovation of Music" in R. Watt and W. J. (Eds.), Ch. 6, *The Economics of Copyright: Developments and Research*, Edward Elgar Publ., UK, 2003, 104-117.
- [35] Riggins, F.J. "Market Segmentation and Information Development Costs in a Two-Tiered Fee-Based and Sponsorship-Based Web Site," *J. Mgmt. Info. Sys.*, 19, 3, 2002, 69-87.
- [36] Shapiro, C. and Varian, H. R. *Information Rules: A Strategic Guide to the Network Economy*, Harvard Business School Press, Boston, Ma, 1999.
- [37] Spulber, D. F. "Market Microstructure and Intermediation" *J. Econ. Persp.*, 10, 3, 1996, 135-152.
- [38] Stiglitz, J. E. "Toward a General Theory of Wage and Price Rigidities and Economic Fluctuations," *Amer. Econ. Rev.*, 89, 2, 1999, 75-80.
- [39] Sullivan, J. "RIAA Suing Upstart Startup," *Wired News*, November 15, 1999.
- [40] Wood, R. "Music Retailers Seek New and Old Ways to Bring in Customers," *Bus. Rev.*, March 14, 2003.
- [41] Wu, S.-Y., Chen, P.-Y., and Anandalingam, G. "Fighting Information Goods Piracy with Versioning," in *Proc. 24<sup>th</sup> Intl. Conf. Info. Sys.*, Seattle, WA, December 2003.
- [42] Zhu, K. "Internet-Based Distribution of Digital Videos: The Economic Impacts of Digitization on the Motion Picture Industry," *Elec. Mkts.*, 11, 4, 2001, 273-280.