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Mutual Liberation of Consumers and Technology in the Recorded Music Industry
-A Historical Analysis of the Evolution of Experience Economy-

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Mutual Liberation of Consumers and Technology in the Recorded Music Industry -A Historical Analysis of the Evolution of Experience Economy-

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Abstract:

This paper describes how business models in the music recording industry have evolved in accordance with technological developments and a changing societal environment. The research initially started with a historical analysis on how new technologies have been reshaping business models to provide a better, or 'liberating,' experience for consumers while unbundling and rebundling various components of the delivery system to secure revenue from the intangible "experience" good. At the theoretical level, this paper aims to establish a generic model for how technology affects business models in the "experience economy."

Development of such a framework is important as the business models suited to physical goods are not useful for the rapidly developing experience goods that are delivered digitally. The first phase of the research strongly suggested that not only technologies but also major societal events, most notably those that triggered economic recessions, may have played a role in the development of new forms of business models in the industry that sometimes use technologies that were developed decades before. A second phase of research was conducted to verify how social events played a role in the evolution of business models and technology adoptions that came with it. We found instances of both technology-led evolution AND socially-led innovations. Ultimately, we found that the meaning of 'liberation' in consumer experience has changed throughout history, which acted as the driving force in the development of business models for experience goods like music.

Keywords: Business Model, Experience Economy, Music Business, Constraint, Technology, Economic Recession

1. Introduction

Changes in technology are converting the business model of many industries from one of selling physical objects to one of selling access rights to experiences. The music industry is a prime example of a business that migrated from the physical goods economy to the "experience economy" (Pine & Gilmore, 1998). This paper looks at how successive forms of technology have been creating business models around the new user experience.

In analyzing this evolutionary process, the authors adopted three perspectives derived from certain theories. One perspective examines how technologies removed constraints on the delivery mechanisms of music (Goldratt, 1984; Zott & Amit, 2007). The authors knew, prior to their research, that changes in technology had already been liberating consumers from locational, temporal and economic constraints in listening to music. Thus, we thought it would be helpful to portray the evolution of business models in the context of how these changes in technology have been liberating consumers from existing constraints.

Another perspective pays attention to the use of "bundling" in the music industry (Schmalensee, 1984). As music in itself is intangible, business models focusing on the provision of an experience are usually established by bundling music with salable goods or services. Bundling of music with LP records is a classic example of how the music experience was monetized by selling the medium. The appearance of new forms of user experience has often meant the destruction of conventional forms of bundling and associated business models. This causes a decline in revenue for the industry until other types of bundling appear which allow the industry to create successful business models matched to fresh experiences.

The third perspective is the experience economy. In fact, while we chose the music industry as our field of study, our original aspiration was to study the future of the experience economy in the context of technological development. The notion of experience economy was first coined by Pine and Gilmore in 1998, stating that we are proceeding to an ‘experience-focused’ economy supported by the progression of economic value alongside consumer demands which have been changing throughout history (Pine & Gilmore, 1998). The experience economy focuses on the memorable and individualized creation of certain contents. As more consumers today are demanding experience and putting more value on goods that can only be appreciated over a limited period of time, more companies are promoting and selling such quality time for individuals.

We believe that research in the experience economy is important as we observe an increasing number of businesses being converted from those of delivering physical goods to those of delivering experience as a result of advances in network technology. The music industry seems to be a prime example of such trends with past symphonic or operatic productions being accessible in our homes unconstrained by time, location or economic factors. Business models, having to capture the very elements of this experience, were required to adjust to evolving technological frameworks in order to deliver an optimum experience.

In summary, we began our research by observing how changes in technology might have been removing constraints from delivery mechanisms in the music industry. We asked how these changes affected the manner in which delivery media and contents are bundled to secure revenue models (a component of business models) and define the industry’s successive business models. We hoped to arrive at a generalizable model for the analysis of the experience economy.

A structured analysis of the industry revealed that relationships in which technology removes constraints from business models to realize consumer benefits have not been linear but rather interactive. Changing consumer demands brought technologies, some decades old, back to the front scene. We have also observed that such changes in consumer needs are often triggered by economic recessions. In that sense the year 2020 has a special meaning as Covid-19 has pushed society as a whole toward the use of various information technologies. Thus, we conducted a brief additional literature review into how recessions may affect consumer behavior and lead to technological changes.

2. Research Methodology

In seeking to understand how technology affects business models in the experience economy, this paper employs a qualitative approach. Historical analysis will show us how business models evolved with technological advancements. Our literature review on the keyword ‘music business’ identified 31 closely related papers among the 50 extracted from Scopus. Search results were limited to the top 50 journals used by the Financial Times in compiling the FT research rank. A certain gap in coverage was identified. Literature on consumption behavior, value, pricing, sales of music and copyrights was abundant. However, works on business in relation to technology were relatively lacking. Considering that gap, our paper employs an integrative literature review aimed at exploring the way in which

technology impacted the business models of the recording era, when music was recorded in particular physical formats.

We conducted an extensive and historically integrated, archival literature review (Torraco, 2005) of the period 1948 - 2020. Our focus was the music recording era in an interpretivist worldview (Creswell, 2018), limited to music business within the American market. We see primary sources such as newspapers and magazines most instantly reflecting the market with their depictions of concurrent issues. Among primary sources, we focused on news media including the New York Times and LIFE and especially the entertainment media magazine, Billboard, which concentrates on music. We distinguished articles in terms of (1) the introduction of technology to the market (1948, 1964, 1982, 1999, 2008), (2) peak sales (1973, 1984, 1991, 2012, 2016), and (3) a transition in sales dominance corresponding with one in technology (1957, 1984, 1991, 2012, 2016). General databases in secondary sources were used to support the findings from primary sources including Google Scholar, Scopus, EBSCO, IEEE Xplore, ProQuest, JSTOR, Academic Search Premier, Elsevier, and Project MUSE. Additional data sources were utilized in order to compare and analyze the impact on business models for music. These sources include the International Federation of the Phonograph Industry (IFPI) and the Recording Industry Association of America (RIAA), both of which support US music sales databases.

The findings outline the historical stages of business models in the recording music industry. Historical analysis helps us discern a pattern in, and draw a generic model on how technology changes affect business models in the form of bundling, unbundling, and rebundling. The outcome suggests a more complex relationship between models in which social/economic crises may determine the selection of the technology that ultimately gains dominance in sales. Also, while shifting from old to new technology, the removal of constraints on the old business model will lead to new ones. In researching this we will discuss changes in consumer behavior towards experience goods in the entertainment industry, and the relationship between corresponding business models of the experience economy. We will identify the time gap between the initial introduction of technology and its adoption by business.

3. Literature Review

This section examines issues surrounding music business models in terms of the value accrued to consumers in the experience economy and the impact of technology on generating this value. First, we will take a look at current trends in the experience economy and how their accelerating pace connects with the digital economy. Then we will discuss how business models have evolved in relation to changing technology and how we can categorize bundling, unbundling and rebundling in this industry. This will be followed by a review of earlier analyses bearing on this research. Lastly, we will present and articulate this paper's theoretical framework, the theory of constraints.

3.1 Experience Economy

First coined by Joseph Pine and James H. Gilmore, experience economy, as shown in Figure 1 below, refers to one stage in the progression of economic value over time. At each

stage we find a pattern of economy reflecting a lifestyle that ties consumer demand to the existing market (Pine & Gilmore, 1998). Pricing increases to premium, along with rising relevance to customer needs and a more differentiated competitive position. This process turns commodities into goods, and goods into customized services which ultimately become experiences with an output of life-changing transformations. This is an exemplary snapshot of the current trend towards the experience economy with a form of goods that is digitally executed and shared. Progress towards the experience economy had already been anticipated and cited by the 1970 futurist Alvin Toffler. Additionally, Goffman (1959), Holbrook and Hirschman (1982), Ogilvy (1985), Schulze (1992), and Jensen (1999) have joined Toffler in speculating about *The Experience Industry* (Ogilvy, 1985), mentioning ‘experience’ as the driving force in marginal growth in the US economy.

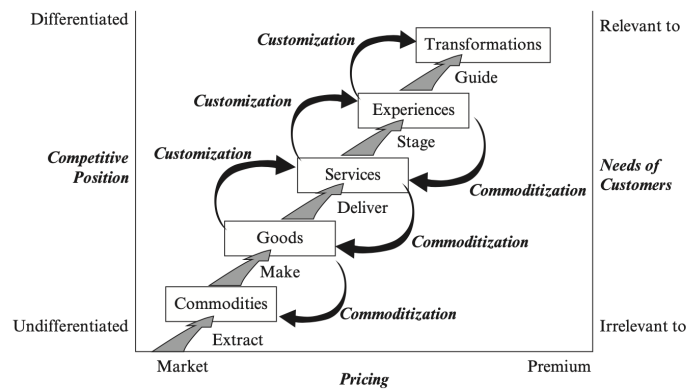


Figure 1: Progression of Economic Value

Source: Pine and Gilmore, 2013

Transition to the digital economy has offered consumers an open platform for different kinds of market transactions and a plethora of diverse experiences. High penetration of smartphones and Social Network Services (SNS) have stimulated humans to seek belonging, recognition and meaning through increased opportunities to connect, share, and communicate with others. The experiential representation of one’s self and consequent affirmation of social media platforms is today’s consumer trend, one which exceeds a mere service. The key to experience marketing is to create an experience that initially catches the attention of the consumer and then raises their interest in taking the time to try it out and then go on to pay for continued consumption of the offerings (Pine & Gilmore, 2013). The advent of the internet triggered marketing experience to become the core of any business. We can say that while experience itself lacks in tangibility, the happiness consumers feel when buying experience exceeds that of purchasing material goods (Carter & Gilovich, 2010; Van Boven & Gilovich, 2003). This is an upward trend associated with improved living standards, ever more advanced technology and the impact of SNS that encourages people to document and communicate experiences, interact with other users, and create new experiences.

3.2 Business Models

The design of businesses, i.e., the way firms ‘do business,’ have been researched throughout history. There are two kinds of discussions centered on business design, those dealing with business models and those concerned with business architecture. While business architecture in academic research (especially within software architecture) tends to be

conducted on design themes such as content, structure, governance and value creation outcomes (Zott & Amit, 2007), business models that gained great attention from the 1990s lean towards more focus on the practical perspective of profitability. The difference between the two approaches is continuously being discussed, noting also the many convergences between them. Our research takes both into account, i.e., profitability in the music business and architecture in terms of the design framework with respect to each music format. We also show that different, successive formats require the consideration of ‘constraints’ that ultimately push one business model towards the next. We will use ‘business model’ in this sense throughout this paper.

3.2.1 Technology and Business Models

Technology development puts new demands on businesses to adapt to the inherent nature of the goods to be sold. The development of steam power facilitating the demand for mass production business models is one critical phenomenon that shows the strong relationship between technology and business model construct. Digital transformation brought innovation in business models especially with regard to the changed delivery methods of the goods themselves. With the internet, the turn from physical goods to digital goods marked a milestone in every industry. Many scholars have conducted research on the digital transformation phenomenon in terms of implications affecting industrial business models and on methodologies to transform them. Technological innovation affects performance (Bierly & Chakrabarti, 1996; Christensen & Bower, 1995; Zaheer & Bell, 2005) as well as the dynamic capabilities of organizations (Teece, 2010).

Disruption is another way of comprehending the flow of technological growth and business evolution. The technology S-curve model illustrates the maturing progress of technology (Rogers, 1962). Rogers regards technology as “a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving a desired outcome,” (Rogers, 2003, p.13) with diffusion as “the process in which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 2003, p.5). Here, the S-curve is used to show how a given technology matures across time, indicating the time and effort expended for the technology before it becomes fully acknowledged and adopted. The transition from an old to a new technology starts slowly, then steepens with accelerating improvement which involves a paradigm shift in underlying assumptions, and finally stabilizes as the new technology reaches full adoption. Christensen (1997) mentions the S-curve by introducing the need for a new value network to measure the performance of the technology that disrupts the preceding one, oftentimes rapidly. We could say technology is more of a process with business evolving alongside it, meeting the newly created values by designing new methodologies in the delivery of the good. Customers engage in the new technology and are willing to pay for these values, converting payments to profit (Teece, 2010).

3.2.2 Technological Innovation and Business Model Innovation

Within the business model construct, technology development and business models interact with each other dynamically and each is discussed extensively. We can, however, make the following distinction between business model innovation and technology innovation at this

point. Teece (1986) defines technological innovation as the point where specific technical knowledge points to new ways in doing business. Thus, technology is the dominating catalyst in business development. On the other hand, business model innovation primarily seeks new revenue streams and defines value propositions for multi-stakeholders (Teece, 2010). In other words, technology development may generate new business models while other business models may be facilitated without technology development (Baden-Fuller & Haefliger, 2013).

It has been observed that business models are ultimately “the logical research that links technical potential to economic value” (Chesbrough, 2010, p.532). This view emphasizes that the model is the structure which introduces new technology to the market. While true, however, market response to business may vary vastly, especially when considering the current atmosphere in business globalization, technology development, and internet penetration. In this paper, we regard both technology and business models as critical factors in market entry and revenue gains, but ultimately one may identify more strongly than the other. This will be discussed further in the second phase of our findings.

3.2.3 Significance of Bundling in Building Business Models in the Experience Economy

Bundling is the act of ‘grouped sales’ or ‘tying,’ i.e., marketing more than one product or service in a single package, usually providing the combination for a cheaper price than the parts, consumed separately (Chiambaretto, Dumez, 2012). Studies on bundling first appeared in the seminal paper of Adams and Yellen (1976), defining bundling as “selling goods in packages.” This was further articulated with a focus on price in bundling (Guiltinan, 1987; Yadav & Monroe, 1993). Bundling marketing has been predominantly used in economics and quantitative marketing, differentiated by product or service. Schmalensee (1984) distinguishes bundling as follows:

- Pure bundling: The firm sells its products solely as a bundle, never separately.
- Unbundling: The firm sells/prices its products solely on an individual basis.
- Mixed Bundling: The firm sells/prices its products both as a bundle and separately.

According to Schmalensee (1984, p.228), [pure] bundling “operates by reducing the effective dispersion in buyer tastes, [which will] enhance profits by permitting more efficient capture of consumer surplus.” Pure bundling benefits by reducing ‘effective consumer heterogeneity.’ In this sense, then, unbundling would free up the restraints placed by pure packaging on the business itself. Mixed bundling benefits from both advantages of pure bundling and unbundling while reducing effective heterogeneity. Bundling is most successful with economies of scale in production, economies of scope in distribution and where there are low marginal costs. Entering the digital economy, bundling marketing has captured additional opportunities in the transition from physical goods to information goods with an exponentially increasing number of digital goods (Bakos & Brynjolfsson, 1999).

In this paper, the concept of bundling refers to an offering of various elements of music within the limitations of available technology at the time. There are also times when bundling is carried out to artificially create ‘scarcity,’ which allows revenue (business) models to be set up around it. Copy protection mechanisms that bundle music to a physical medium is an example of such scarcity creating technology. Unbundling, on the other hand, is the

unpackaging of the various elements of music delivery as occurred with the advent of the digital economy. As for music delivery, we should be aware that there are two types of bundling variations, one involving technology, the other consumer experience. Technical bundling imposes technical constraints so that music deteriorates when it is moved off a given medium of delivery. Bundled consumer experience is defined as music which is “cross-sold” to consumers with/for free goods or services.

3.3 Music Business

Our literature review of business modeling in the music industry was conducted by selecting 31 papers closely related to the keyword ‘music business’ from those extracted from Scopus. In terms of music in the business context, earlier studies are most numerous in the 2000s, which points to the significance of digitization in music. Major past research topics were found to be:

- copyright (Zhang, 2018; Guo & Meng, 2015; Vernik et al., 2011; Jain, 2008; Wilson & Kambil, 2008; Tang, 2005),
- value of music (Datta et al., 2018; Zhang, 2018; Guo & Meng, 2015; Cattani et al., 2013),
- impact on music sales (Zhang, 2018; Chen et al., 2015; Danaher et al., 2014; Liebowitz, 2008; Bhattacharjee et al., 2007; Lee et al., 2003; Moe & Fader, 2002),
- pricing (Danaher, 2014; Parker et al., 2005; Hann & Terwiesch, 2003; Klaes, 1997),
- business design/product design (Geng et al., 2005; Asvanund et al., 2004; Brynjolfsson et al., 2003; M. Klaes, 1997),
- competition in music industry (Huygens et al., 2001; Anand & Peterson, 2000),
- long tail (Zhang, 2018; Dewan & Ramaprasad, 2012; Elberse, 2008),
- shift in music consumption from physical to digital formats (Datta et al., 2018; Dewan et al., 2017; Guo & Meng, 2015; Dewan & Ramaprasad, 2012; Xia et al., 2012; Johar et al., 2011; Chung, 2009; Liebowitz, 2008; Bhattacharjee et al., 2007; Hann & Terwiesch, 2003; Brynjolfsson et al., 2003), and
- consumer experience in digital format (Datta et al., 2018; Zhang, 2018; Payne et al., 2017; Dewan et al., 2017; Teixeira et al., 2014; Dewan & Ramprasad, 2012; Xia et al., 2012; Johar et al., 2011; Chung et al., 2009). (See Appendix A for reference.)

Music in the business context started to be researched actively in academia from the 1990s as it turned to the digital medium. As shown above, most studies have been conducted in areas of consumption pattern change, copyright, sales and pricing. In the past decade, transition from compact discs to downloads and copyrights, and change in consumption patterns in the digital economy have been substantial. Dellyana and Simatupang (2013) conducted a systematic literature review on notable earlier studies of business model innovation in the music industry within a framework proposed by Giesen et al. (2007). The authors categorized business models into three types: industry, revenue and enterprise models. The study was carried out across 104 empirical research papers in the area of music business model innovation. The papers were extracted from ProQuest and EBSCO databases for the years 2000-2013. While Dellyana and Simatupang provide findings in the areas of value chain analysis, cost and distribution of new products, consumption pattern acknowledgement and value capturing, they lack (1) detailed analysis of patterns in the business model innovation process, and (2) analysis of critical factors in innovation success and failure in the music

industry. Despite an increasing attention to digital formats, their paper is deficient in its fundamental understanding of the evolution of business models in music

Our paper aims to close these gaps in identifying patterns in business model evolution by using historical archival methodology. We believe the study is unique in its reconfiguration of past studies in a systematic integrative methodology. It chronicles successive, dominating forms of technology within the entire recording era from 1948 right up to now, analyzing how business models have changed with each new technology while removing constraints from the user experience.

3.4 Theory of Constraints

A key notion employed in a chronological review of technology and business model evolution is the theory of constraints. It shows how technology has been removing constraints in the delivery of musical experience. This theory was developed by E. M. Goldratt in 1980, recognizing the significance of constraints in business management. It states that while constraints are the driving force in improving the performance of business systems by maximizing resources to overcome them, they are also their weakest link until removed (Goldratt, 1984). This theory expects the independent variable, technology, to influence, or explain, the dependent variable, i.e., the business model, due to the driving force of constraints.

The theory of constraints has been discussed and applied extensively in business management with much research covering the subject. In any business, there are constraints that hinder it from achieving its aim in increasing profits, while simultaneously encouraging further development to remove them. The theory has evolved over the years such as with Amit and Zott (2015). The authors discuss antecedents to business model design with ‘constraints’ being part of them. Boland and Collopy (2004) also indicate that while constraints are undesirable in terms of design attitude, identifying constraints is defining a problem and thus a stimulus to creative improvement. Our paper also adopts the perspective of both technological constraints and consumer experience encouraging progress in building business models. Constraints defined in this paper will refer to the categories of time, location, maintenance, storage, selection and sequence. In addition, we will show how previously existing constraints such as accessibility, probability, reproducibility, selectivity, and personalization were removed or relieved as a result of user experience liberation.

4. Interim Research Findings

Considering our extensive literature review, we assume that technology ultimately removes ‘constraints’ in both technical and experiential terms. In this way it liberates individual consumer experience by applying diverse business models to secure revenue. As for music, a commercialized experience good, we can observe a range of bundling, unbundling and rebundling of elements throughout its recorded evolution. Figure 2 shows our proposed model.

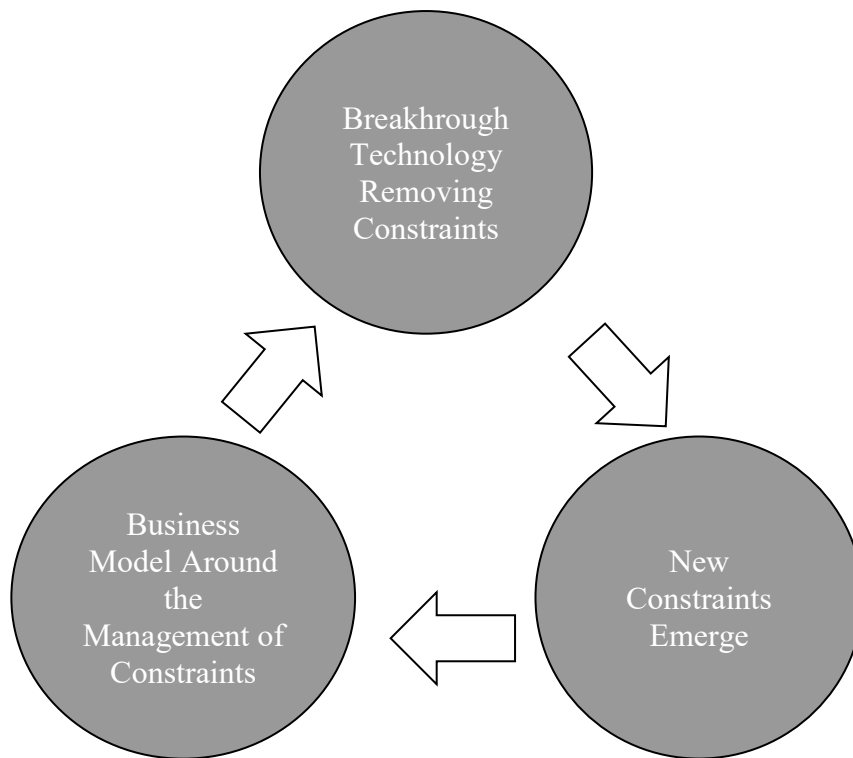


Figure 2. Technology-Business Model Interaction Model

4.1 Overview of Critical Music Format Transitions

The first step our researchers took was the identification of major transitions in the dominant technological/business formats in the music industry. When the target transitions were identified, we could analyze the interaction between technology and business models at each transition and see whether and how effectively our model could explain underlying realities. Technological disruptions will carry forward new types of technology that eliminate the constraints of the existing technology with appropriate bundling and unbundling of constituent elements. This will be discussed further on.

Figure 3 illustrates dominant music formats and transitions over time. As shown in the source of revenue statistics of the Recording Industry Association of America (RIAA), the graph provides us with 5 major phases for analysis, namely, LPs, cassette (compact) tapes, CDs, Digital Downloads, and streaming.

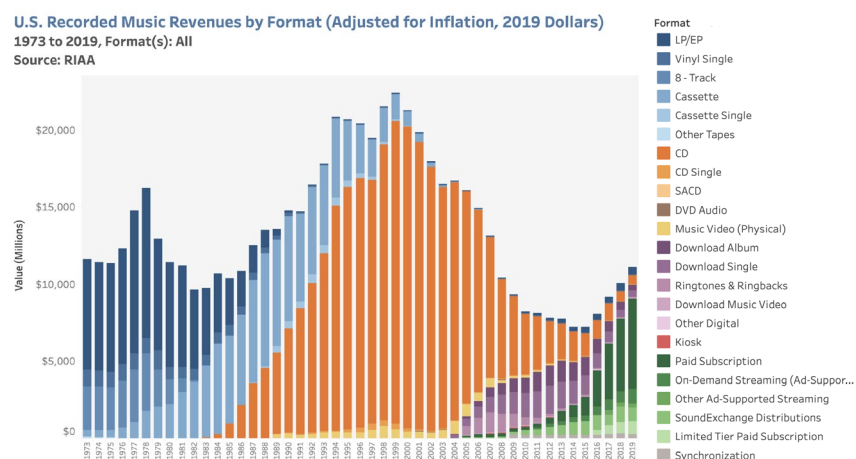


Figure 3: U.S. Recorded Music Revenues by Format

Source: RIAA, 2020

Note: Revenue has been adjusted for inflation in order to compare across board.

Each format made a significant contribution in technological innovation and produced a change in sales revenue. The formats standing out for greatest sales revenue are: (1) long play (LP) and extended play (EP) records, (2) compact tapes, (3) CDs, (4) downloads, and (5) paid subscription. On this basis, we identified transitions between these five formats as our analytical targets.

Three peaks can be identified in the graph: 1978, 1999, and following rapid increase, 2019. The recorded music industry has clearly gone through a number of disruptions from physical to digital goods which accounts for its successes and failures across the decades. At the same time the method of transmission came to more closely approximate the model of a more liberated medium.

The gradients between peaks are also significant. Decreasing revenue and relatively curtailed increases indicate disruption in the prevailing technology. With reference to the S-curve, it takes longer for a new emerging technology to disrupt the existing technology and adjust to society demands than for a successful implementation leading to new highs in revenue. This phenomenon can also be supported by bundling theory: decline in revenue can be attributed to technologies unbundling content from salable media that were used to generate revenue for that content. We see a succession of established business models being destroyed by such unbundling before new forms of bundling emerge to recover the revenue. Such new forms of bundling are realized either by technological solutions or by legal arrangements such as copyright enforcement.

We then observe what value was created for consumers, as well as how technology urged the industry to create new forms of bundling in an unconventional salable medium to recover the lost revenue. Table 1 summarizes our analysis.

	Liberated User Experience Constraints	Business Model (Bundling/Unbundling/Rebundling)
LP (1948)	Accessibility	Bundling Media/Contents bundled by license on physical format
Compact Tape (1964)	Portability, Recordability	Bundling Media/Contents bundled by license on physical format
Compact Disc (CD) (1982)	Digitization, Reproducibility	Bundling, Unbundling License challenged by DAT (Digital Audio Tape) in Home Recording Act of 1992 followed by DRM (Digital Rights Management)
File Download (1999)	Internet - Selectivity	Unbundling, Rebundling P2P unlicensed digital download platforms. Eventually evolved to licensed download platforms (i.e. iTunes).

Streaming (2008)	Personalization	Rebundling Streaming service platforms of licensed digital music locking in consumers by subscription with wider array of artists, albums, genres (Koh, Hann & Raghunathan, 2019)
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Table 1: Bundling of Music Business Models by User Experience Constraint

The formats of LPs, compact tapes and compact discs, unlike the recent formats of music file download and streaming, identify with music bundled in physical formats subject to greater licensed copyright protection. These formats also contrast in terms of digitization and dispersion on the internet, which shows how a physical good changes into an information good. Compact Discs (CDs) revolutionized the music industry by digitizing data, enabling much more playing time for music on one disc. With the dispersion of the internet and personal computers, online download platforms enabled sharing of files by download. This ultimately freed consumers from the constraint of internet selectivity.

4.2 Rise of Critical Music Formats

4.2.1 LPs

In 1948 Columbia Records set the ground for a steady commercial format with its long play LP, the 12 inch, 33 $\frac{1}{3}$ rpm format that ran 45 minutes in total. At the time, Columbia Records and RCA Victor were competing in a climate of market failure including the lack of affordable record players and a low level of consumerism during the Great Depression. Nevertheless, Columbia Records debuted in 1948 and the LP became the standard format for the following decades. (See Appendix B). Periodically this was marked by a boom in consumerism such as from the time baby boomers entered their teenage years in the 1960s and 70s. FM radios particularly suited for music started to spread from the 40s with commercial radio starting in the 20s and dominating up to the 50s. Television became popular from the 50s with growing contents like music programs that eased access to music, ultimately liberating consumers from music entertainment tied to a particular location and naturally increasing demand for records (Welch & Lamphier, 2019).

Although the Berliner Gramophone label had revolutionized records with its flat discs having two sides and enabling the production of copies unlike the recording containers of Edison's cylinder phonographs, their main limitations were poor sound quality, short playing time, and the need for frequent replacement. LPs, on the other hand, allowed a 'standardized' live performance to be recorded to a disc with long storage characteristics. Such a 'long play' record had the potential for mass-distribution, enabling repetitive playbacks of both sides. This was recognized as an effective long-term investment for consumers that ultimately opened up increased 'accessibility.' The aim with vinyls was mostly the expansion of broadcasting possibilities with a focus on advertising, given the growing influence of radios and televisions (Osborne, 2012). Advertising was the main purpose with regard to phonographs and gramophones as manufacturers offered 'collectable items' of record lists, posters, talking machine brochures, greeting cards, etc. (See Appendices C, D).

	Liberated User Experience Constraints	Constraints left/created	Business Model
LP (1948)	<ul style="list-style-type: none"> - Affordability - Quantity (easy storage) - Sound quality - Maintenance (easy; shellac to plastic) - Commercial location - Temporal - Capacity -Liberated from prestigious hierarchy access platforms 	<p>Left:</p> <ul style="list-style-type: none"> - Weak maintenance - High cost (production, distribution) - Home location - Distribution: limited goods in stock <p>—</p> <p>Created:</p> <ul style="list-style-type: none"> - Physical (big, cumbersome) - Sequence (fixed) - Powerful record companies 	<p>Bundling</p> <p>Copyright Act of 1911: media bundled with license on physical LPs that became standard of music records. With enhanced capacity up to 45 minutes a side; multiple songs were bundled to form a ‘concept album.’</p>

Table 2: LP Constraint Analysis

One of the major constraints that LP vinyls removed together with the earlier recording devices was very limited content capacity and the relative inaccessibility of music when it had not been an everyday enjoyment. Liberation of constraints came hand in hand with ‘bundling’ music to suit and attract long-term consumer investment in LP albums. Sales revenue is reflected in the gradual increase in consumers adjusting to the newly established ‘album’ concept. In the past, consumers could only relish very limited accessibility to recorded music either on cylinders or discs, so LPs ultimately provided more business opportunities given their sturdy quality, cheaper production cost, higher maintenance potential, and unlimited quantity. Bundling singles into an ‘album’ raised both profit margins in terms of investment and value from the perspective of consumers, hence the ‘the rise of the album’ (Rojek, 2011) which became the dominant vinyl commodity. Driven by technology improvements in mass production and dominating in sales, this bundled LP format set the dominating business model for capitalization in the music industry. Production and distribution of albums was often tested by premiering with a single before actually going LP. Given an entirely different context we still find this idea of testing the market to apply today.

4.2.2 Compact (Cassette) Tapes

Tape traces back to magnetic recordings from 1928 which revolutionized recording with audio and video, relieving the constraint of constant live broadcasting in radios. Producers were liberated from the burden of live transmission of data and instead had the option to record and playback repeatedly any time. Commercialization and distribution became a definite reality when Philips introduced the Compact Cassette tape for audio storage in 1963 (Chandler, 1967). Philips did not attach proprietary rights to this technology and was open to cooperate with other companies, licensing its use and encouraging them to follow their standards. Allied with Japanese companies including Sony, the compact tape format set the world standard for music tapes.

Compact tapes gradually gained popularity with more than 2.4 million cassette players sold worldwide by 1968. Before the end of the 60s the cassette business approached a value of \$150 million (St. James Encyclopedia of Popular Culture, 2000). At that time, LPs

still dominated along with the relatively new 8-track¹ format, with both occupying approximately a third of total music revenue. Sales of 8-track loop cartridges mainly intended for car tape players were made available in cars manufactured by Ford from 1966. This was the first instance of liberating consumers from partial location constraints. Music was now experienced together with mobility. However, 8-track had its limitations including inferiority compared with cassettes in terms of being too bulky, non-rewindable and with a playing time not exceeding that of LPs, while also expensive and worn out quickly. Compact tapes had longer playing times than the 8-track and were compact but had limited fidelity compared to 8-track or LPs.

Nevertheless, compact tapes quickly gained popularity, freeing consumers from the bulky equipment needed to listen to LPs at home and enriching consumers with portability (Byun, 2016). Music becoming recordable on ever smaller cassette tape units freed up another consumer constraint. With further technological improvements in magnetic tapes, batteries and shrinking transistorized circuits, cassettes opened up a new era for music experience in various indoor and outdoor environments. Cassette players were incorporated into “radios, alarm clocks, automobile stereos, and even shower units” (St. James Encyclopedia of Popular Culture, 2000, p.451). The location constraint was finally lifted, a fact which popularized Sony’s Walkman in 1979. The walkman established magnetic audio tape as mainstream in the consumption of music. Pluggable headphones allowed consumers to immerse themselves completely in music that provided true ‘personal stereo’ with ‘individualized music experiences.’

Recordability came with the unbundling of the previous ‘album’ business model and freed consumers from the sequential constraint. The bundled format of LP albums was the dominating format accounting to over 60% of revenue of the entire music industry at its peak in 1977 which had naturally established the custom of listening to an entire album regardless of preferences. The limited functionality of playbacks was part of the medium. In the past, the idea of having any access to music at all had been much stronger than any ‘consumer preference.’ Now, consumers could record themselves using blank tapes and adjust playback to their own taste, or mix tapes. While personalizing their own experience seemed to have liberated consumers from every kind of constraint, tapes were still left with the constraint of limited fidelity and the burden of rewinding as well as those loose tape situations.

	Liberated User Experience Constraints	Consumer Experience Constraints left/created	Business Model
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¹ 8-Track appeared in 1963, originating from reel-to-reel magnetic tape technology from the 1940s. 8-track cartridges had 4 programs that held no more than the equivalent of an LP, with severe playback constraints.

Tape (1964)	<ul style="list-style-type: none"> - Affordability (distribution, production) - Recordability - Portability - Customizability - Quantity - mix/coordinate various singles into one (customization) - Temporal (radio) 	<p>Left:</p> <ul style="list-style-type: none"> - Excessive size of edited files - Quality Maintenance - Physical Stock Constraint <p>Created:</p> <ul style="list-style-type: none"> - Copyright issue in recordability: 1989 DAT (Digital Audio Tape) bill restricts amount of tapes consumers can buy & prevents making copies of copies (SCMS) - Sequence: Difficulty in skipping songs - Limited selectivity (physical/structural - Payola) 	<p>Bundling</p> <p>Music became the mainstream entertainment and the bundled model of media tied to physical (portable) format prevailed.</p>
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Table 3: Compact Tape Constraint Analysis

From the 1980s revenue from compact tape started to peak, recording a total of \$450.1 million in 1988. This amounts to approximately 60% of total music sales volume at the time. Towards the late 1980s and through the 1990s, compact tape singles, like LP singles, were introduced as a form of change to see how individual hit songs or entry songs from new artists could sell on their own. There was also an evident need for such a form of liberation from albums especially among teen and preteen consumers with a slight pricing benefit as tape singles had only a 1~2 song size with a maximum 10 minutes play per side. While sales did hit a peak in 1990, recording 10.1% of total sales volume, they soon died out.

Recordability and reproducibility on the side of consumers opened up opportunities for creativity in DIY mix audio tapes and videos. Manipulating sound and making new creations endowed the public with more power in terms of making their own music. With cheaper access compared to other entertainment sources, possibilities in music rapidly developed during this time. MTV (Music Television) was launched in 1981 with an initiative in DIY video approaches, offering rather affordable video recordings that were later supported with substantial production budgets and becoming the biggest market in the music industry. The previous media marketing tactic via radio platforms soon migrated to television. TV encouraged the market for videos and rather ‘killed the radio star.’ This coincided with TV ownership by 90% of households in the US. No wonder that music videos finally went mainstream by the 1980s.

4.2.3 Compact Discs (CDs)

Compact Discs were introduced in 1982. They originated from Laserdisc technology, a video recording technology. Contrary to previous analogue recordings, binary numbers were input into the storage form of the disc data format. The CD player laser light would read such data and convert it into electric signals, amplifying the sound for the user. Sound quality did not degrade over time as a laser beam did not distort sound through repeated use, unlike the stylus of a record player. Also, CDs produced no surface noise, had greater storage potential and the advantage of customization of track sequence. The recorded tracks could be reordered, omitted, or skipped easily within the one CD. (See Appendix E).

Despite the initially high cost, CDs, thanks to their quality, quickly gained popularity amongst audiophiles. Their popularity then gradually spread into the mainstream as costs of CD players declined with prices going down to \$199 in 1985. Market demand grew along with Sony’s portable CD-player Discman from 1984 (Rasen, 1985). While initially marketed for fine audio purposes, applications became available to enable erasable CDs and video

formats (Immink & Braat, 1984). Entering the digital world, industries benefited by decreasing reproduction costs, which led to a profitable market in the music business, especially pop. By the late 80s and early 90s, CDs dominated the at-home music market, exceeding cassette sales in 1991 with a revenue of \$4.3 billion (55.4% of entire music revenue). For the first time, CD sales were also larger than the all-time sales of vinyl records. CDs hit the highest in revenue in 2000 reaching \$13.2 billion and accounting for approximately 93% of total music industry revenue. 2000 became the year of peak music industry revenue with an overall total of \$14.6 billion. Moreover, the CD format occupied up to almost 96% out of the entire music industry formats in the early 2000s. In the cultural context, people including older audiences were changing every music format of past years to CDs. This can be understood as rekindled demand for recordings of past artists, thereby raising the market opportunity of the medium.

	Liberated User Experience Constraints	Consumer Experience Constraints left/created	Business Model
CD (1982)	<ul style="list-style-type: none"> - Quality - Storage - Maintenance - Customizability - Reproducibility - Uninterrupted album 	<p>Left:</p> <ul style="list-style-type: none"> - Maintenance of Physical goods (scratch/dust) - Weak in heat (better than tape) - Distribution: goods that are in stock - Carry around albums <p>—</p> <p>Created:</p> <ul style="list-style-type: none"> - Tough barrier entering top record companies 	<p>Bundling, Unbundling</p> <p>Unbundling with rise in singles and consumers reproducing their own mix CDs.</p> <p>Bundling with themed CD albums with different artists & billboard top 100</p> <p>*High Demand in CDs (ownership & collectables).</p>

Table 4: Compact Disc Constraint Analysis

The liberated constraint that draws particular attention is reproducibility. An affordable, wide variety of music with decent sound quality became available in a format flexible enough for adaptation in the hands of consumers. While compact tapes also had this feature, the quality of reproduction on CDs was impeccable (Demetris, 1990).

4.2.4 Digital Downloads

Digital downloads ultimately freed consumers from a rather narrow, constrained list of selections to enjoy a vast variety of choices. While formats from LPs up to CDs used ‘controlled delivery,’ digital music on the net grew massively in magnitude precisely because “freedom of choice was the engine powering internet music revolution” (Coleman, 2009, Introduction). With LPs, cassette tapes, and CDs, consumers were confined to the given physical format the music was delivered in, including also live-transmitting devices such as radio and television. Despite record shops, routes to discover new music were limited, especially in view of high competition in billboard top lists that would be dominated by the big record labels. Digital music freed up these controlled boundaries of music. With the spread of the internet, increasing numbers of people gained access to an immense variety of information, including music, which also allowed for ‘peer-to-peer (P2P) file sharing.’

Napster is notable in gaining popularity by establishing the business model of P2P technology based on many other pirating platforms. Established in 1999, it grew to 80 million users. This platform was an instant music discovery that was needless of the power of the ‘record industry’ inserting itself between consumers and artists and commercializing any kind of business. Piracy was already being tackled with the previous CD-Rs, but the digital revolution pushed for more liberation of constraints in favor of consumers. Additionally, digital transactions were pushing for more transparency, which, in the music industry, had always been a murky area in terms of profit sharing or transaction numbers. The music industry typically comes across as a monopolizing structure of record labels, and digital downloading finally opened alternative options for artists, with contracts and law being reviewed alongside internet development.

	Consumer Experience Constraints Resolved	Consumer Experience Constraints left/created	Business Model
Digital (1992) Napster (1999)	<ul style="list-style-type: none"> - Discovery channel platform - Broad selection of music - Longevity (longer battery and larger digital files) - Easy access in few clicks (search-purchase-play) - Demise of physical bundling: Digital Revolution - Distribution: goods can be unlimited available online 	<p>Left:</p> <ul style="list-style-type: none"> - Easy blindsighted illegal download <p>Created:</p> <ul style="list-style-type: none"> - Consumers’ unwillingness to pay for music - Loss in quality of music file - Copyright regulations reinforced Less freedom to reproduce - Burden for storage restraints by downloads 	<p>Unbundling, Rebundling</p> <p>Unbundling by P2P unlicensed digital file sharing platforms. As contents contained within physical formats were unbundled, concepts of albums deteriorated along with rise in MP3s that detached songs from the physical format.</p> <p>Rebundling with rise in licensed downloading platforms (iTunes). Instead of physical devices, music bundled with a ‘service’ platform.</p>

Table 5: Digital Download Constraint Analysis

Digital file downloads revealed the unbundling of the business model both in terms of technical and consumer experience aspects. Technically, album concepts were completely unbundled as songs were detached from any physical music format or predetermined sequence. With the progression from digital file formats of CDs and the acceleration of the internet, the dominant business model was that of P2P unlicensed digital download platforms that freed consumers from any physical constraint or album concept, and solely encouraged freedom in music selectivity. One was not tied to any physical device, nor to a set list of songs. Therefore, unbundling of songs and encouraging accessibility of diversity in music was foremost in appealing to consumers who ultimately freed themselves from physical core components in preference of consumer experience constraints that determined consumption. Eventually this trend evolved into licensed download platforms tied to iTunes, Apple, that once again rebundled music into a set platform and a physical mp3 player, though the notion of sharing music files remained predominant.

In terms of piracy, most songs were not licensed for distribution on many P2P platforms. However, contrary to some outlooks on the demise of the music industry by digital formats and piracy, this free access to music and broader discovery had a positive impact in encouraging music industry revenue. People were buying more CD albums than ever, recording a peak in 1999 with a total music revenue of \$14.6 billion and CD format sales

only increasing the following years. The major factor here is free access to music prior to consumption, which then led to a strong desire for ownership of music. Also, alternative revenue sources of music from concerts to small goods were boosted. Music will always be an experience good that needs to be experienced prior to becoming a monetary transaction.

4.2.5 Streaming

The next revolution in the music industry was streaming. It ultimately provided consumers with a legal bundle of personalizable features that can be applied to many pieces of music in one platform and without concerns for storage. Previous tactics in digital download formats were partially attached to physical devices of MP3s with marketing points of design, price and storage capacity. Streaming, however, unshackled the physical technical constraint, opening up on-demand services of streaming applications installed in any device. With the raw file remaining on the server, streaming takes the compressed raw file and transmits it over the internet to the user via an app or plugin.

While the liberated technical constraints of storage capacity and convenience are notable, the biggest element that freed consumer experience is personalizability. Improvement in applications brought consumers an individualized experience with diversity in discovery as well as the ability to curate created playlists. Sharing and gaining more discovery options with recommendations and personalizing and sharing that very channel of music added a new element of experience for consumers. The biggest gain was the turn in consumer behavior from usage of illegal free downloads to legally licensed services people were willing to pay for. It is often highly challenging to recapture the value of consumer acceptance in payments for goods that once were available for free. However, thanks to high network connectivity, streaming platforms offer the luxury of convenience and personalizability on top of liberation from every element of past constraints in the recorded era. This has led consumers to compromise for a fixed cost on change in ownership, thereby enabling access to preferred consumer behavior.

Personalizability within the streaming format does not come from just a one-way delivery of music like in the past, but rather from an interaction between the platform and the consumer. It allows you to create your own digital DJ by analyzing your attitude in listening to music, which accordingly gives you the freedom to curate your music playlist in high fidelity or with additional discovery features.

	Consumer Experience Constraints Resolved	Consumer Experience Constraints left/created	Business Model
Streaming (2008)	<ul style="list-style-type: none"> - Storage (on-demand) - Smart discovery music - Unlimited access - Recommendation service - DIY studios - Direct, closer relationship with artists (SNS - promotion) - Demand for 'legal,' 'convenient' access to music 	<p>Left:</p> <ul style="list-style-type: none"> - Data corruption (server issue) <p>—</p> <p>Created:</p> <ul style="list-style-type: none"> - Demand for discovering indie bands - Deteriorated quality - Fragmentation (not all songs in one service) - Data usage 	<p>Bundling</p> <p>Streaming platforms of licensed digital music locking in consumers by subscription with a wider array of artists, albums, and genres. Variation in platforms targeting different audiences, often either high fidelity or different genres. Thus, bundling to platforms for music preference.</p>

Table 6: Streaming Constraint Analysis

Streaming started to overtake download sales in 2016 with exponential increases in revenue. According to RIAA, streaming music has already been fully established among millennials who are twice as likely to be paid subscribers than members of earlier generations (RIAA, 2019, Music Consumer Profile). The market share for paid streaming subscribers is also increasing rapidly. The year 2018 saw subscribers mark a 9.7 percent growth rate, the highest since 1997. It was also the fourth consecutive year in global growth, with numbers since then only increasing (IFPI, 2019; Purnell, 2020). Streaming significantly contributes to this with 24.1% growth in paid streaming revenues in 2019 that account for 56.1% of total global industry revenue (IFPI, 2019). This coincides with total digital revenue accounting for 58.9% of the global market share of music in 2019 (Purnell, 2020). These figures are expected to increase with consumer behavior transitioning from non-paid to paid subscribers and an opening up of as yet untapped markets in developing countries with low internet penetration.

5. Emergent New Perspective and Further Research

This chronological analysis confirms that, within the recorded music industry, technology keeps constantly evolving, sequentially liberating components of consumer experience constraints and resulting in the reconfiguration of the hitherto existing format's business model. We have identified a certain pattern in the removal of the following components of constraints: access to music with LP formats, portability from tapes, reproducibility from CDs, selectivity from online downloads, and personalizability from streaming. Additionally, we could see a continuous bundling of experience goods with salable goods or services apart from the unbundling and rebundling of other components in the music business. Thus, we argue that our analytical framework is useful in portraying the technology-business model evolution.

Moreover, this analysis reveals that technology was not the only factor that impacted the evolution of business models in this industry. We came to this realization when we noticed the time lag between the development of technologies and their adoption into the dominant format. If the mechanism of technological development was a linear one, in which technology liberates the consumers from constraints, then the adoption of any new technology should have been much faster.

Particularly significant in our eyes was the impact of social/economic events on consumer behavior that affected the selection of the technologies (Table7) referred to above. This suggests that while technology development has been a stimulus for change in business models, social aspects also seem to be a significant indicator of change in business models, capturing new constraints with changed consumer behavior at each point in time. Thus, this paper suggests that social/economic downturns often affect the selection of the technology that later gains dominance in sales with the removal of existing constraints leading to new business models.

To be a little bolder in our assertion, this also seems to suggest that the meaning of 'liberation,' or freedom, changes over time and affects the choice of that technology which meets the needs of the time. Thus, technology that is newly introduced to the music medium

may take some time to enter mainstream, but when it does it receives a positive consumer reaction which seems to coincide with renewed economic activity following a given crisis, thus ultimately impacting the business model.

Based on this perception, we conducted a brief literature review on economic recessions and their impact on consumer behavior. We carried out additional data analyses to see how the state of the economy after a downturn or a recession has affected the social consequences of consumerism and thereby verifies our modified version of the previously proposed model.

5.1 Implications: Recessions and Consumer Behavior

The concept of consumer behavior originated in the early mass production era of the 1850s to late 1920s, and eventually assumed a strong presence in the history of marketing in the 1940s and 50s (Sheth, 1985; Jain et al., 2019). The early 1930s to 1950s aimed at large-scale manufacturing but a mismatch of demand and supply became apparent which raised the need to consider the needs and preferences of customers in the market, which in turn led to the study of consumer behavior (Jain et al., 2019). Technology has always responded to consumer needs, pushing business ahead and allowing new market opportunities. In this process it becomes critical to acknowledge consumer behavior and consumer constraints affecting the purchasing experience. Reconfigured business models are the ultimate response to changes in these areas.

The macroeconomic trends of the impact of recessions have been extensively studied. Consumption is understood to rely very much on consumers having disposable incomes and feeling confident about their economy. High consumer confidence facilitates the adoption of a better life-style and provides people with the opportunity to fulfill their desires (Quelch & Jocz, 2008). As for consumer behavior patterns during economic recessions there is still a lack of studies that deal with experience or entertainment goods. However, the literature suggests that economic crises degrade consumer confidence due to the uncertainty of the economy. People will have reduced disposable income and will look out for cheaper goods rather than leisure or luxury items (Zurawicki & Braidot, 2005; McKenzie & Schargrodsky, 2005). Consumer behavior changes considerably at such times with a greater tendency to compare pricing, emphasize functionality and durability, express a preference for DIY, reduce consumption of expensive items such as cars and houses, and become less impulsive consumers with less wasteful behaviors (Shama, 1981; Shipchandler, 1982).

In times of such uncertainties, psychological and emotional factors become critical in influencing consumer behavior (Duțu, 2014). Recessions that lead to worries concerning employment, wages, prices and products aggravate mental health and produce a low level of happiness resulting in a feeling of powerlessness (Ruhm, 2016). Contrary to these observations in cases of decreased overall expenditure, other studies refer to consumption in the culture economy² which seems to manifest a stable if not increasing trend in

² Culture Economy is “a conception and fabrication of outputs whose function is to entertain, instruct, embellish and reinforce identity” (Scott, 2007, p.1474), as found in experiences including music, film, and cuisine (Grodach & Seman, 2013). Experience economy being a relatively recently established concept, we reviewed studies in ‘culture economy’ as they contained more relevant observations than could be found for music as such.

consumption that can be seen at work in the ‘lipstick effect’ (Tajtakova et al., 2019; Hill et al., 2012). The lipstick effect occurred in observing an unexpected increase in sales of lipsticks during the economic downturn following the 9/11 terrorist attack in 2001 and other recessions. It caused a willingness to enjoy a small indulgence, a tendency that was also observed during the Great Depression in the 1930s (Nelson, 2001). The lipstick effect in consumer psychology is another characteristic of consumer spending during recessions. It joined two previously established features established by many economists: spending on inferior goods induced by budgetary constraints and spending on ‘morale boosters,’ with the latter referring to activities such as watching a Charlie Chaplin film in times such as the Great Depression (Hill et al., 2012).

Perhaps it is natural for humans to yearn for cultural consumption in the form of social hedonism and emotional comfort during economic crises. During uncertainties, people also tend to seek less worrisome sources of experience like music (Zullo, 1991). Music has always existed in the history of humanity. Music has been the source of all expressions of emotions during highs and lows and especially during social and economic downfalls. Just as jazz emancipated people from hard times and gave comfort during WW1 and WW2, music has been a medium that shows greater significance during social/economic recessions. If so, it is evident that the selection of the underlying technology (format) would be highly influenced by contextual consumer behavior. The implications of this relationship between social/economic events and music business models in relation to changed consumer behavior quotations will be discussed, based on the revised model analysis seen in Table 7. There are a number of views suggesting that the music industry is recession-proof since music is an affordable, relatively ‘inexpensive good which is long on value’ (Tucker, 2008) and therefore a cultural fixture people would not give up on. This may be partly true. However, revenue fluctuations in the music industry evidently show that major social/economic events may have an impact and, in this way, coincide with market dominance of new technology.

This paper recognizes social/economic events to have a critical influence in changing the behavior of consumers. Such changes affect market demand. A certain technology may have been developed before any particular event, yet may have been challenged in meeting demand upon its introduction on the market. While compact tapes were introduced to the market in 1962, it was only in 1984 that needs met with the market and compact tape sales dominated LP sales. The 1970 oil shocks (1973, 1979) happened in advance of change in the recorded music market which implies a turn in consumer demand. Likewise, the graph in Figure 5 implies that economic downturns often change the social/economic context and create demand for a new lifestyle and experience in consumer behavior.

Format (year of tech development)	Revenue*(RIAA)	Post-Social/Economic Event & Consumerism Change	Business Model	Time Lag
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LP (1948)	Dominant from 1957 (Shelton, 1958) Peak in 1973	High Mass Consumption Era Economy started to recover from WW2 and the following Korean War with increased employment and wages in the 1950s with rise in consumerism amongst the working-class => Easier access to entertainment business from televisions to automobiles.	Stability in income and rise in middle-income households, marketed accessibility to music with at-home devices: specifically market household lifestyle especially housewives. - Integration of the music industry and consumer electronics.	9 years
Compact Tape (1962)	Dominant from 1984 Peak in 1984	At-home Private Recording Social status upgraded, coinciding with Hippie culture from 1967 induced by the Vietnam War, promoting 'freedom.' The 1979 Oil shock decreased consumerism, declining vinyl sales (lacking material), yet encouraged affordable tapes that allowed private recording/copying/editing at home.	Target market shift from adults in past to untapped teenagers (in light of hippie culture movement amongst younger generation) with boomboxes (1966) and the walkman (1979), producing more blank tapes for copying. + Market cassettes in automobiles	22 years
CD (1982)	Dominant from 1991 Peak in 2000	Prosperous Music Industry Developed media and digital recordings provided Gen X DIY media from music to videos, encouraging more sales of CDs for 'close-to-perfect' reproduction. Prosperous record industry responding quickly to high demands in music pushed for millions of sales.	Target more production of CDs, favoring higher margin profit than tapes. Shift from hardware companies to labels actively using marketing media (ads, TVs) for promoting songs as goods. - Dilemma with cassette players that are used in 80% of automobiles in 1997 (Stearns, 2006).	9 years
Digital Download (1999) iPod (2003)	Dominant from 2012 Peak 2012	Penetrating Technology Becomes Norm Period of adjusting to technology with entry to the digital era. Growing penetration of smartphones, WIFI, and mobile data service popularity. High demand in flexibility and selectivity in music with development in technology.	Focus from record quality improvement to maintenance of digital format. (P2P model with piracy issues// Subscription-based platforms // SNS platforms) * Significance in consumer electronics to generate profit (Legal music software, iTunes, tied to iPods contribute to rise in legal download	13 years

			revenues)	
Streaming (2008)	Dominant from 2016	Experience Discovery Consumers Consumerism changed to willingly paying for convenience, thus reducing burden to download and store, especially for experience in entertainment aspects with high demand in interaction with artists.	Discovery-focused, personalizable, convenient access-based streaming platform in subscription model (Main revenue source: Advertisement).	8 years

*Note: Year of revenue peak and new technology takeover from the previous format are shown. Time lag refers to the period from new technology entry to market dominance. 'Dominant' refers to leading revenue among all formats of the music industry revenue.

Table 7: Post-Social/Economic Event and Music Business Model Analysis

5.1.1 LPs

The music industry instantly expanded in the post-war years between 1945 and 1946 with record sales doubling from \$109 million to \$218 million as shown in Figure 5 below (Schmuck, 2006). Stagnation followed in the late 1940s. Military expenditure for the Korean war from 1950-1953 was largely financed by taxation, which naturally led to the excise tax policies of the Revenue Act effective from 1951 until 1954 while also supporting anti-inflationary policy. During that time, taxation, costs and debt ranked at an all-time high in US history. Consumer spending stagnated. The period following the Korean War marks the start of a hike in consumption following eased regulations with tax cuts for both corporates and individuals from 1954 during the Eisenhower era (Clark, 1953).

Until that time, affordable radios had been the norm with the broadcasting industry enjoying dominance. From the 1950s, the phonographic record industry went on to boom with a boost in luxury at-home appliances which later in that decade also included electronics. The post-recession recovery was populated with prosperous middle-class Americans supporting development in the record industry (production and distribution). Records were a natural product aimed at affluence and consumerism in the western industrial society during the later 1950s and 60s. Living standards increased enormously, pushing people to consume more goods, especially the younger generation then enjoying steady employment and high wages. It was a time of accelerating consumption with 75% household car ownership and 87% household television ownership by 1960. (Automotive Repair Industry, 1969). An emphasis on consumption in household gadgets was highly encouraged along with definite gender roles for women as housewives. This explains why many LP marketing posters were targeted at women, especially housewives.



Figure 4: Mother's Day LP Advertisement

Source: Philips, 1954

Following their introduction in 1948, the LP recording format dominated that of the older 45s and 78s by 1957 and occupied 61% of the industry (Shelton, 1958). That was four years after the Korean War had ended in 1953. Sales in LPs were gradually increasing at first but rising exponentially by 1956. All in all, during the 1950s, America was the biggest consumer society with mass production part of the culture. This naturally contributed to an increase in music industry sales overall with more access to music amongst the majority, compared to the earlier belief in music as a luxury for the few. Soon, the music industry was integrated with consumer electronics for a more profitable market, noting core sales in the live and recorded sectors. By the 60s, LPs covered almost 80 percent of total record expenditure (Keightley, 2004).

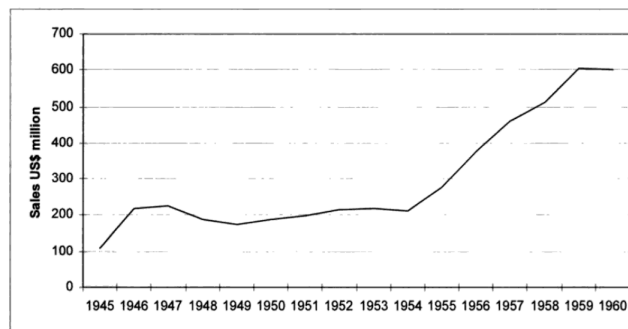


Figure 5: US Record Sales (US\$ million) 1945-1960

Source: P.Tschmuck, 2006

5.1.2 Compact Tapes

Initially invented for portable dictation marketed to journalists, tapes were afterwards commercialized with portable music players. Additional recordable features appeared with transistor radios in the 1970s (Shuker, 2017). Following the consumerism that defines the 1950s and 60s, the economic crises caused by the 1973 and 1979 oil shocks and the Vietnam War (1955-1975) also impacted consumer behavior during that time. These events led to a desire for personal freedom, to which tapes responded by liberating consumers, especially the young generation, with recordability and portability. Tapes enabled consumer participation and brought the first positive change in cost compared with records along with a flood of counterfeits (Traiman, 1979).

The Vietnam War helped to give rise to the hippies, a subset of the Baby Boomers, from the late 1960s. They opposed consumerism and, contrary to their parents' generation,

were living for authenticity, stressing peace, love, and freedom. But they also enjoyed music and travel, exempting these two categories from anti-consumerism. While generally going against materialism, the hippies intensified a “commitment to style, music, [and] leisure” (Clarke et al. 1976, p.21). The hippies identified with the Beatles, one of the best representative bands of that time in record history. Their songs mirrored social change while boosting consumer demand for music and its enjoyment.

In response to the cultural movement of the time, the compact tape era was slowly replacing that of the record era with consumer demand for more simplicity as well as “increased social contents in lyrics” (Tiegel, 1979). With the active pop hippie band movement in San Francisco from 1967, many creative controls were shed, with much DIY music production accessible as the new norm threatening record label corporations by forming indie bands and independent labels. In this way, a gradual transition occurred from a simply pacifist stance to an activist one that yearned for consumer participation in ‘democratic- participant media’ (Mcquail, 1987). Many hippies also enjoyed the nomadic life with Volkswagen Beetles³, a lifestyle which required the forward push of ‘portability’ of music with cheaper recordable tapes. Prior to that time, the era of pronounced consumerism had already primed young car owners to seek portability of music in mobility, a demand many hippies then also identified with.

While hippie culture was dealing with the fallout from the Vietnam War, the 1973 and 1979 oil shocks caused economic recessions to negatively affect overall consumerism. Recorded music sales between 1978-1979 declined by 10.8% (RIAA, 2019), but surprisingly, compact tapes continued to increase sales throughout. Despite the recession, sales showed a 30% increase between 1978-1979 and further rises beyond. The immediate impact of the oil shocks of the 1970s was a shortage in materials including that of vinyl materials needed for the production of LPs (Wasko et al., 2011). Tapes at the time were only used as a recording medium for copying LPs and were never thought of as a major music format (Traiman, 1979). Some saw tapes to be recession-proof as sales continued to prosper. Perhaps, this can be explained with high oil prices encouraging people to spend more time at home and explore their music experience with the new technology. Copying blank tapes and using affordable, high-quality Japanese tape players such as the Sony Walkman gained great popularity. Despite the material shortage the price of tape was relatively stable due to governmental regulations in freezing prices, which contributed to consumer appeal (Fujita, 1980). In fact, the price of music in general only further decreased despite a substantial increase in quality through a series of technological developments. In fact, household ownership of tape recorders came to 87.4% by 1979.

³ As part of the hippie subculture, its protagonists enjoyed road tripping that stressed the value of ‘experience’ in contrast to material goods (Fennell, 2003). The oil/energy crisis gave rise to an awareness of conserving energy and refraining from unnecessary travel. This also led to increased sales in compact vehicles with better fuel economy.

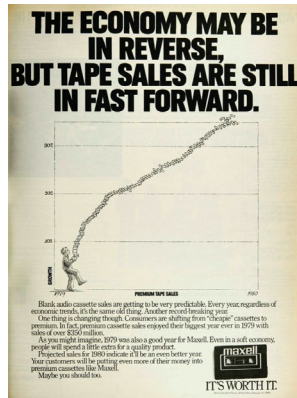


Figure 6: 1980 Economic Recession and Tape Sales Advertisement

Source: Advertisement, Billboard, 1980 Sep.6

Compact tapes ultimately maintained their dominance over 50% of the total music industry from 1984 to 1988 while the 1979 oil crisis affected every industry with skyrocketing costs. After short-lived recovery the recession of 1980-82 was by far the biggest since the Great Depression and the brief recession of 1958. The music industry was struggling with sluggish results as a whole and with decreasing revenue from vinyls ever since the peak record of \$4.1 billion revenue in 1978 (RIAA, 2019). Recreational travel including live music events suffered as traveling became more expensive and ultimately reduced outdoor activity. Contrary to past experiences with a boost in post-recession consumerism, the economy was still suffering even after the oil shocks had passed. Record companies had overestimated themselves looking back at their glorious sales in the past. Compact tapes, however, were a peculiar opportunity given portability and decent quality in recordability, especially for young people seeking an affordable source for leisure. Businesses responded to this demand also with offering rentals by phone and mail delivery. While general consumerism had declined, consumers were actively seeking an alternative source of entertainment, and this may have pushed them in the direction of private at-home copying, producing mix tapes, and even tapping into a market supplying them with cheap counterfeit copies. At that point analysts predicted that the demise of the record era was likely (Gronow, 1983).

5.1.3 Compact Discs

The next music revolution came with CDs, a medium used for entertainment that almost entirely replaced LPs and cassette tapes and dominated the industry by the end of the 90s. After the short recession of the early 1980s and the 1987 stock market crash, the economy had again become strong and competitive with consumers enjoying the peak of cassette tape sales, which in turn accelerated competition in the record industry and led to many mergers and acquisitions like the acquisition of the CBS record label by Sony, in 1988. Indie record labels that had especially formed during the tape era also merged, resulting in a stronger, consolidated market. There was also much integration in music and consumer electronics as well as mergers of cassette tape and CD companies (See Appendices F, G). When industries are down, intensity increases between existing rivals (Porter, 1980). The stronger presence of the newly amalgamated record companies made for an aggressive stance in the CD market which dramatically pushed up overall revenue. As a result, in 1999 the music industry was able to reach its historic peak of \$14.6 billion of total revenue with \$12.8

billion of it accounting for CD revenue. Vast amounts of investment were made in marketing, particularly to cement close ties with broadcasting stations. Quick production speed and higher profit margins compared well with past formats and contributed to a strong and profitable market. In the 90s the structure of the three big labels, Sony, Universal and Warner converged to something approximating a monopoly.

Revenue sales of CDs overtook vinyls by 1988 and tapes by 1991. People were looking for long-life and affordable recordings such as CD-recordables that improved on cassettes by adopting the digital format. Thanks to efficiency in production speed and low marginal production costs, CDs could be mass-produced. As can be gathered from Figure 7, CDs met with explosive demand, boosting a very profitable market. The figure indicates that regardless of the stock market crash in 1987, retail stores were actively promoting their hardware sales by cross merchandising cassettes and CDs in mixed bundles. See Figure 8 for the marked rise in CD album sales. Along with digital formats of CDs, the video medium was also making its way into at-home entertainment. It allowed further perfection of DIY media home creations along with the help of CD players that, by 1991, could be found in 28% of households (US Industrial Outlook, 1992). While there was a slight halt in pre-recorded music sales in 1989, it was the only year that experienced a slight decline in CD sales, which accounted for 64.5% of total recorded music sales. With the boom of consumerism from the mid 1990s, CDs finally got off to an exponential expansion up to the 2000s.



Figure 7: Hardware Bundle Sales

Source: McCormick, 1987; Mayfield, 1987

5.1.4 Digital Downloads

The dot-com bubble most likely built up with the rise of diverse startups such as in music download software and ultimately caused the collapse of by then overvalued e-commerce companies. The proliferation of the internet and its adoption by the mainstream had led to an overinflated market. Along with rapid technological development, digital music formats of MP3 files and Napster questioned the need for CDs in obtaining a great music experience. Falling prices of radio, CDs and satellite transmission all have had implications for radical change in the business structure of music delivery itself. Following the 2001 stock market crash, the entire record industry started to decline and prices of technology plummeted. This led to an accelerating migration of consumers to the internet taking advantage of continuous development in smartphones, WIFI, and mobile data services. During this period of adjusting to technology with its growing penetration of internet use, illegal downloads spiked with Napster, the P2P music file sharing software, pushing down

overall album sales (see Figure 8). MP3s were on an upward swing with the Apple iPod release in January 2001 and the opening of the iTunes music marketplace in 2003. Perhaps technology-driven innovation was seen stronger here with a revolution taking place in accessibility. The network effect in music sharing became obvious with a fast-growing number of users joining connectivity.



**Figure 8: Per Capita Sale of Full-Length Album Sales (1973-2005)
(Including CDs and Digitally Distributed Albums in addition to LPs)**

Source: Liebowitz (2006)

In the early 2000s, ‘ringtones’ was one tactic with which the music industry diversified its business model. Customers were inspired by the feature of being able to customize their incoming ringtone⁴ for music downloads with business thriving in the process. 20-30 second ‘snippets’ of the songs were usually more expensive than the whole song with an average price tag of \$2.50 compared to the average price of \$.99 for a complete mp3 file song (Halloran, 2017). This was one of the first entertainment and audio products users had access to on their phones. File sharing software had already accelerated CD-R piracy issues with the spread of “music for free” mentality ever since the internet bubble had burst (Ferguson, 2002). This has been shaking the entire industry with an all-time plummeting rate in music revenues from the mid-late 2000s, causing a shift to focusing on other industries like ringtones, MTV⁵ music videos and music audition⁶ TV shows. Online distribution channels rapidly developed with information on new album releases or increasing interaction with artists via platforms like YouTube.

One event to take note of is the 9/11 terrorist attack in 2001. While all media became news outlets, people soon turned to music for emotional comfort (Garofalo, 2007). Despite instant cancellations of live concerts and tours, beneficiary concerts were planned in memory of 9/11. In terms of consumer behavior, while overall outside activities decreased and time spent at home increased, the psychology of mortality salience and wanting comfort and security induced increased consumption. Businesses were taking advantage of this climate

⁴Ringtones was introduced in Japan in 2004 (Gopinath, 2013). It grew exponentially but then also lost profit within less than a decade, mainly due to entry of mobile music with iPhones (Gopinath, 2013).

⁵Officially launched in 1981 in America, MTV established a concrete base for previous concepts of music videos from the 1960s. High dispersion of TVs from the 1960s centralized this broadcasting medium as the main marketing platform that from the late 80s onwards also broadcasted interviews with artists and offered dial-requested VJs. MTV’s popularity decreased sharply from the late 90s to the early 2000s due to rise in social media/online video platforms.

⁶For example, ‘Pop Idol’ was initiated in the UK in 2001, originally inspired by the international television franchise, ‘Popstars,’ in New Zealand, in 1999. Pop Idol succeeded in America with greatest popularity in the 2000s, largely due to personal engagement with the audience/viewers and contestants that ultimately democratized the hierarchical structure of the record industry.

with patriotic advertising campaigns centered on music, considering the uniqueness of music in human psychology (Choi, Kwon, & Lee, 2007). This also naturally gave rise to live performances with 9/11 beneficiaries.

The effect of the increase in live performances was at once positive and negative: increased internet broadband penetration and piracy issues in downloads. This resulted in a welcome but massive exposure of live performances and pirated music. Still, the upside is that music is a good which consumers must experience before they will purchase it. Realizing this, online video platforms like YouTube began to democratize the structure of the media. Video recordings and phone technology made people themselves producers. The ability to upload live concerts completely revolutionized the industry, removing the location constraint of live performances.

The 2008 financial crisis also provides a meaningful indicator of linking sales of digital downloads with MP3s. There is viable evidence of revenue growth in downloads on iPods, which corresponds to changed consumer behavior amidst much lower consumer confidence when compared to the dot-com bubble and 9/11. Consumption in both durables and nondurables significantly decreased compared to past recessions that had only affected the former (Gennaioli & Shleifer, 2018). The 2008 financial crisis also took longer to recover from (Gennaioli & Shleifer, 2018). However, despite the economy struggling with substantially decreased consumer confidence, the music medium of MP3 and iPods was relatively stable with iPod sales as shown in Figure 9. Given the tendency to purchase only basics, consumers of especially between the ages 18-34 were looking for a small indulgence of comfort in the music and gaming industry. However, as for technology goods preferences, consumers opted for the more promising investment of ‘No.1 trusted brand names,’ which resulted in a greater number of purchases of Nintendo Wiis and Apple Ipods (Mintel International, 2008). There was an additional impact on younger consumers who preferred a trendy design in iPods together with iTunes software which gave them comparative flexibility and selectivity. A fresh transformation of the self was taking place at a dark time with high unemployment and uncertainty. Consumers of iPods “simultaneously became users of new software that organized, sorted, and presented their music collections” (Morris, 2015, p. 146). This awareness naturally led to an increase in sales but also raised a barrier to piracy.

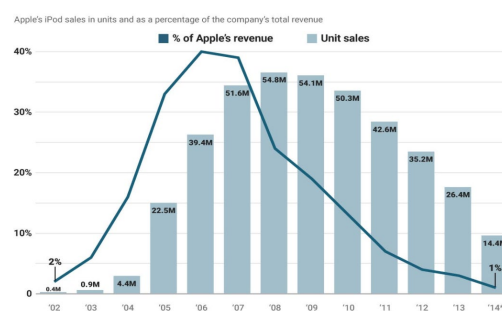


Figure 9: Apple's iPod Sales in Units

Source: Statista, 2019

The data on iPod sales is highly correlated to digital downloads due to device integration with iTunes. The combination offered a legitimate service for decently priced music available on a one-piece basis. With the peak for iPods in 2008, and the ensuing domination of downloads from 2012, the ongoing spread of smartphones contributed to providing cheaper access to

music on these devices. The great time lag between the point when digital downloads were introduced and when sales started to dominate within the music industry may be explained by the drastic cut in cost of information goods due to eased reproducibility and low transmission costs. Developments in music distribution were converging in the direction of ‘public goods’ compared to physical goods such as LPs, tapes and CDs that resonate more with ‘private goods.’ This has challenged businesses to refrain from solely cost-based pricing strategies and move to more value-based strategies.

5.1.5 Streaming

Even with legal downloading platforms, piracy issues continued in the music industry. Revenues were constantly plunging due to the devaluation of music. Perhaps the persistent exclusivity of Apple products, such as with iTunes, got in the way. Similar download platforms were formed continuously and expanded their music library with extra features. They included paid-for movies and TV shows as well as an increased use of video platforms such as YouTube and internet radio also seeping into the market. Internet radio provided more personalizable functions and gradually implemented smarter algorithms in streaming recommendable music stations. The challenge in revamping the music industry to regain profits seemed to be slowly changing.

The financial crisis in 2008 affected the world’s economy slightly differently from past crises. As mentioned previously, shared effects were in terms of job stability, wage and productivity, but consumer post-recession behavior was different from previous strong consumerism rebound. According to Mansoor (2011), after the 2008 financial crisis, consumer behavior had changed to desire simplicity, smart consumption, temperance, and green, ethical consumerism. Particularly, consumers were now past the introductory stage of internet on PCs and had rather adjusted to the digital economy with high internet penetration on hand-held devices and a preference for trusted service brand names that encouraged the sale of iPods. Additionally, consumer spending now revolved around social media with a greater flow of information and formations of more interactive platforms in communities of similar interests (Kozinets, 2010; Perner, 2008). Introductory platforms like Myspace Music or Pandora Radio and the ad-supported social media of Imeem or Last.fm eventually evolved into today’s dominant music streaming business, Spotify.

In the midst of plummeting sales revenue (see Figure 10), the 2008 crisis not only boosted the sales of trusted iPods but also opened a new opportunity for the younger generation to overcome declining revenue in physical media. Streaming services defined the culture of peer-to-peer and captured the needs of consumers wanting to interact on social media. Spotify was launched as a freemium model in European countries in 2008 and in the US in 2011. Spotify soon implemented a premium option for ad-free transmission and additional features for personalizability at a set monthly fee. Responding to an atmosphere of high mobile data penetration and a change in consumer behavior toward acceptance of a quality experience in exchange for a fee, streaming resolved the piracy issue of the long recession and gained dominance in total revenue over physically recorded music revenue in 2017, incrementally increasing since (IFPI, 2019).

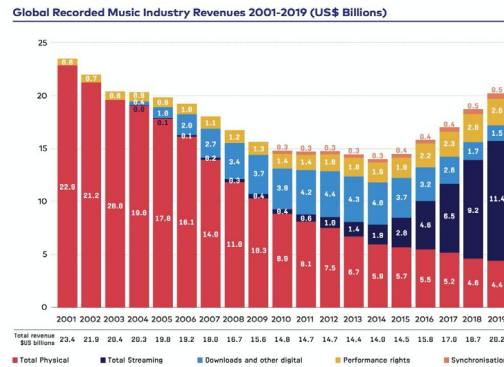


Figure 10: Global Recorded Music Industry Revenues 2001-2019

Source: IFPI, 2019

While Spotify was introduced during the 2008 recession, expansion of the business seems to have only recently taken a big leap due to enhanced connectivity. Streaming represented the greatest proportion of music sales for the first time in 2015 with control of 34.3% of the entire revenue (RIAA, 2019). Rather than being based on durable goods, the revenue count has changed to account for sales per stream of nondurable experience goods online. This change has much impacted the meaning of ‘albums.’ Previously, albums bundled from singles of varying quality made a larger profit. A bundle of singles, even if including fewer desirable tracks, could be promoted to consumers as a great investment, though relatively costly. Streaming, however, with the structure of pay-per-stream, has changed the consumer behavior immensely by way of selectivity, a feature that trickled down to major shifts in business (revenue) models.

The current COVID-19 pandemic has completely changed the lifestyle of people confined in lockdowns and practicing social distancing. Such an ‘untact’ economy has been boosting business innovations especially in the music/entertainment industry as more time is being spent at home. So far, fewer streaming hours on music have been consumed due to less commuting hours, but the number of paid users wishing to unsubscribe has stayed low. Rather, with Spotify expanding business from music into audio following its recent merger with podcasts, people have been exploring the latest selectivity features in audio that appeal to new potential consumers. Streaming in visuals has been soaring with more time spent at home and has led to more demand in streamed live concerts and interaction with artists in the music industry. Ongoing observation is needed to see how business models, revenue and the streaming industry, which shows great potential for other industries as well, will fare.

5.2 Findings: The Impact of Past Social Events on Human Behavior and Technology

What does historical evidence tell us about the interaction between technology and business models in the music industry? In the first half of our exploration we arrived at an awareness of the critical role of social events affecting the choice of technologies which became incorporated into the music business model. In the second half, while we found evidence that supports this perception, we also noted that the process was not simply a case of social needs leading to the development (or rediscovery) of technology.

Although social/economic events have not always had direct impact on format transitions and associated business models, we can infer, in most cases, a close relationship between the end of economic recessions and the time the new technology starts to dominate

the market. ‘Music’ is an experience and a cultural activity. Music has historically almost always been embedded in our social interactions which intensify the feeling of a particular experience. It refers to a core human experience that encourages human well-being by establishing “human contact, meaning and imagination of possibilities, [while] tying to our social instincts” (Schulkin & Raglan, 2014, p.1). Music, while a source of entertainment, also helps people endure pain, which explains why it leads to particular forms of consumerism in given social/economic contexts. We know that consumers tend to depend on music for emotional psychological support in hard times.

Despite the strong relationship shown between social/economic events and the technology that is being transitioned to in a number of cases, there is still room to argue that entering the digital era of downloads and streaming seems to identify more strongly with technology-led innovation. The entry point to digital music research in the past focused heavily on behavioral economic theory (from the value of illegal, free downloads to that of paid-for albums) and the consumer theory of compensation (pirating compensates for decreased physical sales and income derived from tours, thus directly and negatively impacting musicians). The impact of the internet on the music industry has often led to research which uses internet penetration data as a proxy for pirated data. The internet, especially the very extent of penetration of mobile data, ultimately enabled users to access and share information goods freely. The benefits of network usage are evident to consumers. Leaving aside the internet, the introduction of iTunes and the increase in iPod sales during the financial crisis of 2008 were exceptional for resolving copyright issues. The added value of interoperability of music files among Apple devices drastically changed the experience of music. Younger generations accept a high level of technology with the digital native’s natural posture and are willing to pay for streaming services.

In the near future, especially with the current pandemic of COVID-19 affecting every industry due to lockdowns, there seems to be more market opportunity attached to phones. Acceleration of smartphones with 5G will lead to more demand in entertainment in the form of virtual performances or video ringtone. ‘Personalization’ and ‘recognition being the keywords in consumer behavior today within an ‘untact’ culture that is slowly becoming the norm, extra features related to music seem to be in demand on communication mediums.

This raises many questions on how business models are re-established, what consumer constraints are removed, kept or added, what can be expected in terms of sales revenue and how quickly, and whether the pace of progress is related to economic downturns. Tapes had a relatively long, yet stable dominance in revenue. In fact, among the dominating formats, tapes and digital download had the lowest increase in total recorded music revenue. They are similar in that both had severe challenges with copyright, being the first mediums with a ‘complete’ form of recordability and reproducibility. Tapes enabled consumers to physically reproduce content on a physical medium. File downloads were reproducible and exchangeable with others completely virtually. CDs, on the other hand, were still limited by the constraint of necessitating a physical format for reproduction and delivery of music while digital files were exchanged completely online. It seems that the introduction of a format that promises complete liberation from existing constraints is likely to raise another type of constraint in turn. Nevertheless, digital formats have provided consumers with more agency

and more flexibility in forming their own experience, all of which would identify music as a ‘prosumer’⁷ good.

This historical analysis has sought to identify constraints that are affecting streaming during the ongoing pandemic, COVID-19. However, ever since the advent of the COVID-19 in February, 2020, with this research on streaming in the experience economy still ongoing, there have been diverging opinions on its future prospects. While sales in technology devices dropped in relation to manufacturing struggles, those of streaming services have been on the rise, especially in video streaming. The media and the entertainment industry have always been sensitive to technology development as IT disruptions are tied to declining revenue. With social distancing, TV/film productions as well as physical entertainment venues were forced to cancel their services, including tickets to concerts, theme parks, etc. At the same time ‘at-home’ entertainment gained demand with downloads in streaming services shooting up. Analysts are expecting more consumption of items and experiences that will bring friends and families closer including devices used for video chatting, game consoles and streaming subscription. While the peak of the pandemic seems to have passed, we are trying to settle into the new normal while wondering how business models in the experience economy will evolve from here on. We will need to add to our findings against a backdrop of changes in technology, consumer behavior and social/economic phenomena, including COVID-19. Briskly advancing experimentation and diversification in delivery methods needs to be re-examined.

Comparisons of both current and past recessions and crises as well as the relationship between economic recessions and change in consumer behavior and spending on experience goods will require more research in the future. Another study may need to examine the liberation of constraints on artists and producers, considering that the focus of this research was on consumers. This paper also suggests other experience goods such as podcasts or online reading to be studied along the lines used in this paper, highlighting the distinct characteristics of experience goods in contrast to physical goods, especially in view of today’s growing experience economy.

6. Conclusion

We started off this research assuming that consumer preferences would move in the direction of a complete liberation of constraints, i.e., toward a static model in which customers can enjoy the ultimate state of freedom in their preferences. We anticipated that technological development in music delivery would gradually bring consumers closer to freedom while correspondingly revised business models would ensure revenue in return. Our hope was that such a model would be the model to explain the role of technology in enriching the experience economy.

However, our research revealed that the process is a much more dynamic one, in which the meaning of freedom, at least as expressed in consumer behavior, changes over time. In such a context, we observe phenomena in which technologies that were obscure for

⁷ A prosumer is one who provides and consumes. Toffler (1980) argues while producers and consumers were certainly distinct in the industrial age, the difference is becoming more obscure in the prosumer movement induced by general higher education, preference for customization, self-actualization, and the development of technology (Toffler, 1980).

an extended period of time after their emergence suddenly find their way into the limelight. Our findings show that each of the five technology formats discussed signified different liberated constraints in terms of accessibility, portability, reproducibility, selectivity, and personalizability, implying an augmenting change in the meaning of freedom. Each stage of technology development liberated consumers from different kinds of constraints. Simultaneously, in accordance with consumer behavior at each stage, bundled or unbundled elements of technical or consumer experience would occasionally recreate certain constraints that were previously relieved, only to successfully meet the ends of changed consumer behavior. Considering our findings of divergent consumer liberation and a continuous trend in the cycle of bundling and unbundling, an ultimate state of freedom is perhaps not achievable. However, the meaning of freedom continues to alternate with social impacts of changes in consumer behavior. Business models are therefore reconfigured as technology adjusts to consumer needs.

Additionally, we realize that major social/economic upheaval influences gains in market dominance resulting from new technology, thus also affecting consumer behavior. While technology itself may have been introduced to the market before any gains were noted, social/economic events ultimately helped reconfigure business models based on new technology by removing constraints which stood in the way of revenue domination. It seems technology and society have shaped each other by impacting one another in diverse spectrums that collectively push for business innovation. Music is an experience good that is significantly dependent on adoption by consumers. ‘Culture’ is created where technological change in delivery ultimately changes the consumer experience. Considering this, major social events have oftentimes changed consumer desires leading to the liberation of current constraints and thus to business model innovation. We have observed several different factors working in this process and found that consumerism has always influenced business innovation, so that for some it is the dominant factor. Technology penetration has also always affected business innovation, not only often being dominant for the needs of consumers but also frequently being a critical factor responding to the needs of the industry as well. We found that efficiency gains in the industry during the CD era ultimately boosted the CD market. We intend to further explore our current pool of evidence to verify our current thinking.

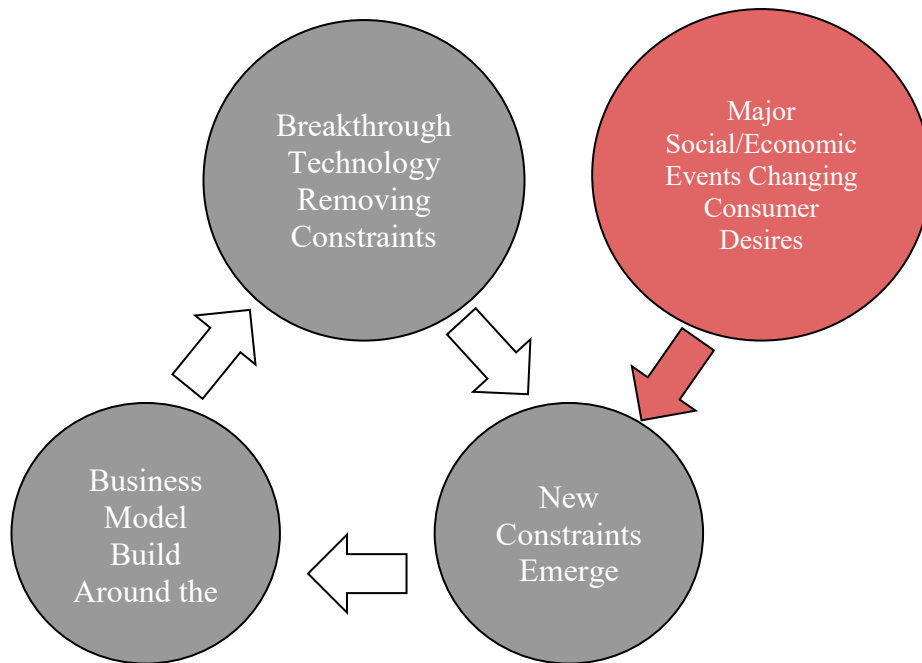


Figure 11: Technology-Business Model Interaction Model Incorporating Social Impact

Clearly, social/economic events have implications for business innovation which are crucial as they are often vital indicators of business model innovation. Therefore, we need to carefully assess in any business whether we have technology-led or socially-led innovation. Entering the digital era, digital downloads and streaming have been relatively more strongly identified with technology-led innovations compared to the past physical formats of LPs and tapes or even CDs that have shown stronger traits of socially-led innovation. Differentiating between the two will better prepare us for further improvement in business model innovation as well as for unexpected risks.

Although the latter part of our qualitative archival research focused on the role of technology and economic crises in evolving business models, there is evidently room for more discussion, especially when considering digital download and streaming formats. Our research into the music industry contributes to literature what has been lacking so far: a systematic analysis of the evolution of both the experience economy and business models emerging within it.

We should caution readers that this paper has limitations in being a historical archival analysis and therefore, despite careful planning in methodology and checking for accuracy, it still has the potential for deficiencies. While we tried to collect ample data for a systematic chronological compilation and strive for an objective analysis, the possibility of bias cannot be ruled out. Also, we faced a time limitation in observing how a social/economic event, COVID-19, impacts streaming. This will be explored further.

This paper focuses exclusively on the emergence of the experience economy in the world of music and therefore does not easily allow generalizations on value derived from alternative or complementary areas of experience consumption. Such areas would include reading books, watching movies and documentaries, listening to podcasts, engaging in different processes of discovery and study, and exploring complementary ways in music consumption like live concerts and performances (Mortimer et al. 2010). What value do users

attach to these individual activities? To find the answer we need to test them - the first step toward consumption (Pine & Gilmore, 1998).

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8. Appendices

Appendix A Review of Literature in Music Business Data extracted from Scopus (May 31, 2020)

	Title	Authors	Year	Source	Theme	Data
1	Changing their tune: How Consumers' Adoption of Online Streaming Affects Music Consumption and Discovery	Hannes Datta, George Knox, Bart J. Bronnenberg	2018	Marketing Science 37(1), pp. 5-21	How streaming changes consumers' consumption behavior. Streaming increases total consumption, leads to more variety, and facilitates discovery of more highly valued music.	Comparison of Spotify and another anonymous music platform
2	Intellectual property strategy and the long tail: Evidence from the recorded music industry	Zhang, L.	2018	Management Science 64(1), pp. 24-42	Removing DRM(Digital Rights Management) increases digital music sales by 10%, but relaxing sharing restrictions does not impact all albums equally. Increases low-selling albums (long tail) significantly (40%) but does not benefit top-selling albums. *Dropping DRM increases value of music as consumers can use music to the fullest. *Discovery in less popular music especially more jazz and classic than hip hop and r&b	DRM removal/time correlation in Sony, Universal, EMI, Warner sales
3	Hearing music in service interactions: A theoretical and empirical analysis	Payne, J., Korczynski, M., Cluley, R.	2017	Human Relations 70(12), pp. 1417-1441	Impact of music on interaction with customers and service workers-> music is important in supporting positive interactions with customers but is not in itself a sufficient condition.	60 retail and cafe workers in UK chains and independents, and free text comments collected through a survey of workers in a large service retailer
4	Popularity or proximity: Characterizing the nature of social influence in an online music community	Dewan S., Ho Y.-J., Ramaprasad J.	2017	Information Systems Research	Study on two types of social influence (popularity influence & proximity influence) in an online music community where a user can like/follow songs or other users' likes. In conclusion, both have strong impact, also substituting each other in influence, but proximity dominates popularity. -> Implications for design and marketing strategies with online communities	Quasi Experimental Research Design on empirical method of highly granular data from online music community
5	IT-enabled broadcasting in social media: An empirical study of artists' activities and music sales	Chen H., De P., Hu Y.J.	2015	Information Systems Research	Quantify effect of artists' broadcasting activities on a well-known social media site for music, Myspace, on music sales. Result: significant effect. Effect mainly comes from personal messages rather than automated messages.. Timing and content of personal message also have influence. => important to conduct captivating conversations with customers in social media marketing	Myspace (personal/automated msg)=> music sales, media channels, album prices, new music releases, user-generated content, and artist popularity
6	Digital content provision and optimal copyright protection	Guo L., Meng X.	2015	Management Science	Influence of copyright protection on firm profitability. 1. More Copyright protection impacts Consumers' willingness to search (price/quality etc.) negatively. 2. Optimum of incomplete and even zero copyright protection policies in markets where consumer prepurchase search is important (information goods, digital products) 3. Firm may provide lower quality as copyright enforcement increases.	Utilize parsimonious model to reexamine if unauthorized copying hurts sales. Set condition under which imperfect or zero restriction on copyright protection is optimal. (Extract different result from previous studies: negative impact on sales by copyright protection)
7	Why, When, And how much to entertain consumers in advertisements? A web-based facial tracking field study	Teixeira T., Picard R., el Kaliouby R.	2014	Marketing Science	In terms of TV ads, entertainment (visual imagery, upbeat music, humor) has an inverted U-shape relationship to purchase intent. Entertainment coming after brand is positively associated with purchase intent while entertainment coming before brand is not.	Large scale field study using 82 ads with various levels of entertainment shown to 178 consumers in their homes and workplaces. (Used novel web-based face tracking system, measuring consumers' smile responses, viewing interest and purchase intent with Bayesian hierarchical model.)
8	An empirical analysis of digital music bundling strategies	Danaher B., Huang Y., Smith M.D., Telang R.	2014	Management Science	Tiered pricing coupled with reduced album pricing increases revenue to the labels by 18% relative to uniform pricing policies traditionally preferred by digital marketplaces while also increasing consumer surplus by 23%. => Even without tiered pricing, unbundling of albums outperforms "album-only" pricing policies that dominates the era of physical CD/cassette sales.	Panel data on digital song and album sales coupled with Quai-random experiment to determine own- and cross-price elasticities for songs and albums. Then Develop structural model of consumer demand to see welfare under various policy relevant counterfactual scenarios.
9	Value creation and knowledge loss: The case of cremonese stringed instruments	Cattani G., Dunbar R.L.M., Shapira Z.	2013	Organization Science	How is the value of cultural products determined? How the dynamics of value determination over time have implications for knowledge management processes.	Value attributed to Cremonese stringed instruments. Value wasn't realized until 19th century when, in evaluating musical performance, performers, critics and public audiences took over from royal courts, and selected Cremonese instruments as the best for performing the emerging Romantic music.
10	Music blogging, online sampling, and the long tail	Dewan S., Ramaprasad J.	2012	Information Systems Research	Online social media like blogs are transforming how consumers make consumption decisions. Intensity of music sampling is positively associated with popularity of a blog among previous consumers and that this association is stronger in the tail in the body of music sales distribution. Music popularity on sampling is also stronger in tail.	How social media are reshaping music sharing and consumption. (data from Leading music blog aggregator -> relationship between music blogging and full-track sampling, drawing on theories of online social interaction)

11	To continue sharing or not to continue sharing? An empirical analysis of user decision in peer-to-peer sharing networks	Xia M., Huang Y., Duan W., Whinston A.B.	2012	Information Systems Research	1. The more benefit users "get from" the network, in the form of downloads, browser and search, the more likely they are to continue sharing. 2. the more value users "give to" the network, in the form of downloads by other users and recognition by the network, the more likely they are to continue sharing. 3. "Getting from" is a stronger force for the continued-sharing decision than "giving-to."	Large scale data set of individual activities in a peer-to-peer music-sharing network, understand users' continued-sharing behavior as a private contribution to a public good.
12	Music downloads and the flip side of digital rights management	Vernik D.A., Purohit D., Desai P.S.	2011	Marketing Science	Download piracy might decrease when the firm allows legal DRM-free downloads. 2. A decrease in piracy doesn't guarantee an increase in firm profits and copyright owners do not always benefit from making it harder to copy music illegally.	Model consumers' utilities and their incentives to purchase legal products versus pirate illegal ones. Analyze competition among traditional retailers, digital retailers, and pirated sources of info goods, get better understanding of competitive forces in the market and insights of the role of digital rights management.
13	Analyzing sharing in peer-to-peer networks under various congestion measures	Johar M., Menon S., Mookerjee V.	2011	Information Systems Research	When delivering general-purpose content, congestion and its relationship to sharing is a critical factor that influences end-user performance. => looks at P2P networks from this new perspective by explicitly considering the effects of congestion on user incentives for sharing. Also propose a simple incentive mechanism that induces socially optimal sharing.	P2P community in delivering general-purpose content of the web, even in real time instead of user-initiated exchanges (mostly music). Analyze sharing in p2p community with three different congestion measures: delay, jitter and packet loss.
14	The music industry's unbundling blues	[No author name available]	2010	Harvard Business Review	\$0.99 music downloads are disrupting music industry. 1% increase in music downloads are leading to 6% decrease in album sales. (Bundled or mixed bundle strategy in Cable TV or Microsoft Office sales increases adoption and revenue)	Sales comparison between consumption of bundled single songs instead of bundled package of an album
15	My mobile music: An adaptive personalization system for digital audio players	Chung T.S., Rust R.T., Wedel M.	2009	Marketing Science	Propose an "Adaptive Personalization System" and illustrate its implementation for digital audio players, a product category with rapidly expanding sales. This automatically downloads personalized playlists of MP3 songs into a consumer's mobile digital audio device and requires little proactive user effort. (e.g., no explicit indication of preferences or ratings for songs).	Simulation study shows adaptive personalization system to outperform benchmark approaches. Implement adaptive personalization system on palm PDAs and test its performance with digital audio users. (Active users: adaptive personalization system provides substantial improvements over benchmark approaches both in terms of number of songs listened to and listening duration)
16	Should you invest in the Long Tail?	Elberse A.	2008	Harvard Business Review	Conclusion: Blockbusters are capturing even more of the market than they used to and consumers in the tail don't really like niche products much. Digitization is changing storage. "The Long Tail: Why the future of business is selling less for more, Chris Anderson, 2006" sudden availability of niche offerings more closely tailored to their tastes will lure consumers away from homogenized hits. "Tail" of sales distribution curve will become longer, fatter and more profitable. Elberse, HBS professor, investigated if this long tail theory is actually playing out in today's markets. (Elberse outlines the implications of her research for producers and retailers and offers strategic advice to both groups.)	Music and home-video industries, the two markets that Anderson and others frequently hold up as examples of the long tail in action- reviewing sales data from Nielsen SoundScan, Nielsen VideoScan, online music service Rhapsody, and the Australian DVD-by-mail service Quickflix.
17	Digital piracy: A competitive analysis	Jain S.	2008	Marketing Science	Contrary to claims of manufacturers, there are conditions under which copying can increase firms' profits, lead to better quality products, and increase social welfare. This is because weaker copyright protection enables firms to reduce price competition by allowing price-sensitive consumers to copy. <i>THUS, weaker copyright protection can serve as a coordination device to reduce price competition.</i> Also, examining how equilibrium copyright enforcement is affected by network externalities. In contrast to previous research, showing strong network effects can sometimes lead to a firm choosing higher levels of copyright protection. => <i>In presence of strong network effects, stronger copyright by one firm can serve as a coordinating device to reduce price competition.</i>	Examine impact of illegal copying of software and other similar intellectual properties on firms' prices, profits and quality choices even when there are no network effects and the market is saturated.
18	Testing file sharing impact on music album sales in cities	Liebowitz S.J.	2008	Management Science	1. File sharing impact to US decline in sound-recording sales (1998-2003). 2. Impact of internet on entertainment activities to help cleanse internet penetration coefficient of that impact. => file sharing appears to have caused entire decline in record sales and appears to have vitiated what otherwise would have been growth in the industry.	Data set including album sales, internet penetration, and various demographic measures for 99 American cities over period of 1998-2003.
19	Open source salvation or suicide?	Wilson S., Kambil A.	2008	Harvard Business Review	Context of KMS's brainchild, Arms up, popular electronic-music game being ripped off the idea by start-ups by OPEN SOURCE. 1. How can company make money without its IP? 2. And why should it try?	Fictional case study joined by 4 experts.: 1. Jonathon Schwartz, CEO of Sun Microsystems: If KMS confident with what customers will want next, and if it's content with small corner of the market, stay proprietary, but with reputational price. 2. Eric Levin, executive vice president of Techno Source: KMS should take middle path: license its software to third party companies and add features to promote community building. 3. Gary P. Pisano, HBS: Open-source strategy could increase

						Amp up's rate of improvement, enhance users' satisfaction with the game, reduce KMS's development costs. Michael J. Bevilacqua, law firm WilmerHale: Warns that KMS risks greater liability for intellectual-property infringement if it joins the open-source community, where code carries no guarantee that it doesn't infringe on someone's IP rights and providers offer no indemnification.
20	The effect of digital sharing technologies on music markets: A survival analysis of albums on ranking charts	Bhattacharjee S., Gopal R.D., Lertwachara K., Marsden J.R., Telang R.	2007	Management Science	Impact of recent developments related to music industry on the survival of music albums on the charts and evaluation of specific impacts. Post P2P era: find significantly reduced chart survival except for those albums that debut high on charts. Also see narrowing of advantage held by major labels. Also, sharing does not hurt survival of top-ranked albums but does negatively impact low-ranked albums. => increased risk from rapid information sharing for all but the "cream of the crop."	Music albums on Billboard charts with file sharing data from popular networks.
21	Two-sided network effects: A theory of information product design	Parker G.G., Van Alstyne M.W.	2005	Management Science	How can firms profitably give away free products? -> findings: 1. even in absence of competition, a firm can rationally invest in a product it intends to give away in perpetuity. 2. identify distinct markets for content providers and end consumers and show that either can be a candidate for a free good. 3. product coupling across markets can increase consumer welfare even as it increases firm profits. => model also generates testable hypotheses on the size and direction of network effects while offering insights to regulators seeking to apply antitrust law to network markets.	Introduce a formal model of two-sided network externalities based in textbook economics- Mix of Katz and Shapiro network effects, price discrimination, and product differentiation.
22	Bundling information goods of decreasing value	Geng X., Stinchcombe M.B., Whinston A.B.	2005	Management Science	Consumers' average value for information goods, websites, weather forecasts, music, and news declines with the number consumed. This paper provides simple guidelines to optimal bundling marketing strategies in this case. If consumers' values do not decrease too quickly, we show that bundling is approximately optimal. If consumers' values to subsequent goods decrease quickly, we show by example that one should expect bundling to be suboptimal.	Optimality of pure bundling
23	Digital copyright and the "new" controversy: Is the law moulding technology and innovation?	Tang P.	2005	Research Policy	If and how the new digital copyright laws in the US and Europe are affecting innovation on the internet. (argues these laws are having a positive effect on internet innovation, despite strident argument that these laws will inhibit innovation (as in p2p file sharing tech and new business models for music retailing that p2p has spawned). Conclusion: digital copyright laws could create perverse incentives for innovation and wonders if legislators may not require a better understanding of the innovation process when crafting IP laws.	Exploratory article examining US and Europe's digital copyright laws
24	An empirical analysis of network externalities in peer-to-peer music-sharing networks	Asvanund A., Clay K., Krishnan R., Smith M.D.	2004	Information Systems Research	Early speculation focused on behavior of p2p networks' positive network externalities play in improving performance as the network grows. BUT, negative network externalities also arise in P2P networks because of the consumption of scarce network resources or an increased propensity of users to free ride in larger networks and the impact of these negative network externalities has received far less attention. -> Research addresses this gap in understanding by measuring impact of both positive and negative externalities on the optimal size of p2p networks. Conclusion: 1. users contribute additional value to the network at a decreasing rate and impose costs on the network at an increasing rate, while network increases in size. => at one point, the costs that a marginal user imposes on the network will exceed the value they provide to the network. 2. these results also highlight the importance of considering user incentives in network design.	Empirical study on optimal design of these networks (p2p) under real-world conditions. Uses unique dataset collected from the 6 most popular OpenNap P2P networks between Dec 19 2000 and April 22, 2001.

25	A Bayesian model for pre launch sales forecasting of recorded music	Lee J., Boatwright P., Kamakura W.A.	2003	Management Science	Purpose of this study is to obtain sales forecasts for a new album before it is introduced. It develops a hierarchical Bayesian model based on a logistic diffusion process. It allows for the generalization of various adoption patterns out of discrete data and can be applied in a situation where the eventual number of adopters is unknown.	Use weekly sales data of albums that appeared in Billboard's Top 200 albums chart from Jan 1994-Dec. 1995. (Use sales of previous albums along with information known prior to the launch of a new album, the model constructs informed priors, yielding pre launch sales forecasts, which are out-of-sample predictions. (meta-analytic approach on dynamics of duration, the effects of marketing variables, and the unknown market potential). As new data becomes available, weekly sales forecasts and market size (number of eventual adopters) are revised and updated.
26	Consumer surplus in the digital economy: Estimating the value of increased product variety at online booksellers	Brynjolfsson E., Hu Y.J., Smith M.D.	2003	Management Science	Present a framework and empirical estimates that quantify the economic impact of increased product variety made available through electronics markets. While efficiency gains from increased competition significantly enhance consumer surplus, for instance, by leading to lower average selling prices, our present research shows that increased product variety made available through electronic markets can be a significantly larger source of consumer surplus gains. One reason for increased product variety on the internet is the ability of online retailers to catalog, recommend, and provide a large number of products for sales.	Ex: number of book titles available at Amazon.com is more than 23 times larger than Barnes and Nobles bookstore. 57 times greater than the number of books stocked in a typical large independent bookstore. Our analysis indicates that increased product variety of online bookstores enhanced consumer welfare by \$731 million to \$1.03 billion in the year 2000, which is between 7 and 10 times as large as the consumer welfare gain from increased competition and lower prices in this market. (Also may be large welfare gains in other SKU-intensive consumer goods like music, movies, consumer electronics, hardware, software)
27	Measuring the frictional costs of online transactions: The case of a name-your-price channel	Hann I.-H., Terwiesch C.	2003	Management Science	Study offers submitted by consumers to a large Name-Your-Own-Price (NYOP) online retailer. In our setting of allowing repeated offers, consumers trade off a direct financial value (lower price) for frictional costs. Based on a consumer choice model capturing this trade-off, we use the observed consumer behavior to reconstruct the frictional cost parameters for the consumers in our sample. We show that, perhaps contrary to general wisdom, frictional costs in electronic markets are substantial, with median values ranging from EUR 3.54 for a portable digital music player (MP3) to EUR 6.08 for a personal digital assistant (PDA). We find that consumers who have gathered experience with the NYOP channel in previous transactions exhibit lower frictional costs than consumers who use the channel for the first time.	NYOP (Name-Your-Own-Price) online retailer that allows consumers to repeatedly submit offers on one and the same product. While consumers could identify the threshold price (the minimum price for which the retailer is willing to sell) by incrementing their offer in small steps in each consecutive round, such a strategy would require them to go through many additional online transactions. (Frictional cost is defined as the disutility that the consumer experiences when conducting an online transaction, such as submitting an offer)
28	Using advance purchase orders to forecast new product sales	Moe W.W., Fader P.S.	2002	Marketing Science	Marketers have long struggled with developing forecasts for new products before their launch. This focus on one data source-advance purchase orders- that has been available to retailers for many years but has rarely been tied together with post launch sales data. Conclusion: mixed Weibull model fits well for experiential product category given its flexibility. Hierarchical Bayes methods fit a variety of sales patterns far better than do a pair of benchmark models. We demonstrate ability to forecast new album sales before the actual launch of the album, based only on the pattern of advance orders.	Duration model that incorporates the basic concepts of new product diffusion, using a mixture of two distributions: one representing the behavior of innovators and one representing the behavior of followers. (This mixed Weibull model gives flexibility that makes the model well-suited for experiential product category (e.g., movies, music, etc.) in which we frequently observe very different sales diffusion patterns, ranging from a rapid exponential decline to a gradual buildup characteristic of "sleeper" products. Incorporates product-specific covariates and uses hierarchical Bayes methods to link the two customer segments together while accommodating heterogeneity across products.
29	Co-evolution of firm capabilities and industry competition: Investigating the music industry, 1877-1997	Huygens M., Baden-Fuller C., Van Den Bosch F.A.J., Volberda H.W.	2001	Organization Studies	This paper proposes that rival firms not only search for new capabilities within their organization, but also for those that rest in their competitive environment. Longitudinal study of 120 years of music industry. 1. historical study (1877-1990) 2. multiple-case study (1990-1997) Concluding that search behavior drives co-evolution through competitive dynamics among new entrants and incumbent firms and manifests itself in the simultaneous emergence of new business models and new organizational forms.	Integrated analysis of new capability search processes at both firm and industry levels shows how their interaction makes industries and firms co-evolve over time. Focus on music industry
30	When Market Information Constitutes Fields: Sensemaking of Markets in the Commercial Music Industry	Anand N., Peterson R.A.	2000	Organization Science	This paper outlines a key mechanism through which organizational fields are constituted. We suggest that in competitive fields the market serves as a magnet around which groups of actors consolidate, and that cognition of markets occurs through the creation, distribution, and interpretation of a web of information about the "market."	Case study of Billboard music chart from the commercial music industry to show that changes in either scope, methodology, or political tone with which market information is presented can provide a major jolt to the participants' understanding of their field.

31	Sociotechnical constituencies, game theory, and the diffusion of compact discs. An inter-disciplinary investigation into the market for recorded music	Klaes M.	1997	Research Policy	Comprehensive case study of technological innovation in the market for recorded music in Britain. General thrust is to foster the dialogue between sociological approaches to the study of innovation and microeconomic theory. Innovation of compact discs enabled the major record companies to redefine the overall price level to their advantage, after the industry had undergone a period of profit-squeezing price-competition. This has the important policy implication that radical product innovation may call for regulative changes in the techno-institutional structure of the market.	The material is analyzed with the aid of the 'sociotechnical constituencies' approach recently proposed in this journal by Alfonso Molina, followed by a game theoretical analysis of competitive alignment between the dominant constituents. Using this interdisciplinary approach, the article argues that technological innovation may induce price rigidities by allowing the establishment of focal points for tacit collusion.
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Note: A total of 50 journals were initially found on Scopus with the keyword 'Music Business.' 31 were extracted and analyzed for this paper.

Appendix B

LIFE Magazine, Nov.15, 1948, p.2

45 MINUTES OF MUSIC FROM A SINGLE RECORD

... ANOTHER "FIRST" BY COLUMBIA RECORDS



COLUMBIA
LONG PLAYING
MICROGROOVE
RECORD

THIS COLUMBIA  PLAYER ATTACHMENT
plays LP records through your present radio or phonograph

Finer tone quality! In listening you'll hardly believe you're hearing a single disc record. High tones are heard before the bass, and gradually the entire melody is heard before the accompaniment. This new sound is the result of the new microgroove design of the Columbia LP Record.

More than twice as much music for your money! Columbia LP Records are only 10¢ more than the standard 78's. You get more music for your money. You get more music for your money. You get more music for your money.

Uninterrupted music! Your music is never interrupted by a change of sides or a change of records. The new microgroove design of the Columbia LP Record allows you to play for 45 minutes of music without a change of sides.

Save space! Every inch of shelf space holds 2 LP Records.

Over 600 selections already in catalog! Over 600 selections already in catalog! Over 600 selections already in catalog! Over 600 selections already in catalog!

See your dealer today!

Appendix C

Billboard, Jan.22, 1972, Poster Market Joining Record Business

Retail Stores Growing As Poster Hitmakers

By IAN DOVE

NEW YORK—The poster business is moving more into music-record outlets, according to Steve Werner, who heads Gemini Rising, a three-year-old poster producing company.

Werner considers that 70 percent of his business—which this year he reckons will top the \$1 million sales mark—is done through these outlets.

"The business has moved out of the head shops, which were perhaps essential at the beginning. But now head shops account for less than 5 percent of my volume currently. They can't take the large amounts that a major store or record shop chain can," he stated.

Werner claimed his product goes into around 7,500 stores at present and considers that the poster business is "getting more like the record business."

He said: "I now take back returns, re-service accounts with posters that break out, merchandise the product, taking care that it is displayed properly. I give away free posters with certain orders and send out display rack free of charge.

"I'm really a record company, except I don't make plastic—I make paper. I have my hit posters—I also have my losers."

Werner cited a Jesus poster, "Superstar," as one of his current hits, selling, he said, 55,000 in the first three weeks.

Apple, Capitol Deal to End; Klein Label Set

NEW YORK—Allen Klein, head

Appendix D

Billboard, Nov.3, 1962, Disk Deals for Dealers

'Extras' Mean Disk Sales, Says Chicago's 'Little Al'

By NICK BIRO

CHICAGO—The record dealer's future lies in diversification, according to "Little Al" Te-maner and he's planning a program that he hopes will ultimately account for some 40 per cent of the total sales volume in his 10 stores throughout the area.

Al is planning to add adult games, greeting cards and books as an adjunct to his record stock in each store. He's been experimenting with such a program for the past couple of years.

Seven of his 10 stores already carry books and cards and the two items account for some 15 per cent of his total volume. The adult games will be a new venture, but in Al's opinion, no less successful and a "natural" for his type operation.

Al sees the whole thing as a "calculated form of diversification." He feels the record buyer is essentially a "leisure buyer—not conscious of saving every nickel."

Al also feels he's staying within the same buying reference with all his products. Or in his own words—"records, books and games are all a leisure time device. If my customer's mind is tuned to leisure, why shouldn't we have the stuff to offer him."

Gift Guides

The games will be such items as Chess, Checkers and Monopoly—all suitable for gift-giving.

All four items — records, books, games and cards — will be in separate departments and each is to be merchandised and advertised separately. The main window-display theme however

will still be centered around record product.

A typical example of what's coming can already be seen in Al's main store on West Lawrence Avenue. The store is literally divided in half—records and accessories on one side, books and greeting cards on the other.

The books are housed in wall-
(Continued on page 35)

Stereo Sound On TV Looms

SYRACUSE — Stereo sound on TV may be the next electronic marvel to hit the home entertainment field. Field tests recently conducted here by General Electric have proved the feasibility of dual-channel sound in television. Psychological tests conducted among viewers also indicated that separation and directional sound can give added depth to the visual impression.

(Continued on page 35)

Rack Jobbers' Operations Force Wholesaler to Wall

• Continued from page 4

line of credit with these fellows. That's the way it would be done in any other business but records.

"In this way, the strong firms last and the under-capitalized ones disappear. Then we have a healthier business all around. Another very logical way of looking at it, is to realize the facts of life about the business today. With discounting procedures as we have them now, there is simply not enough profit level to support the various middlemen.

"Distributors are going to have to get wise and move into the rack and one-stop fields themselves. I know some of them are already. But more will have to.

One Big Center

"I think all of the various distributing functions are going to have to somehow combine in the same shop. Maybe the answer is to have a big central headquarters for record distribution, like the Merchandise Mart in Chicago, from which all distribution and servicing would originate."

Wilkins, who was with Columbia during the introduction of the LP, recalls that eventful period.

"Selling was no problem then, it was a matter of production and control. In 1945 we had completely revamped the company's interior accounting procedures. When the LP came along we had to do it all over again. In fact, it was then we first introduced an IBM 650 computer to the operations. Now Columbia is using a model 7070 computer, a really fantastic instrument. I feel that the firm has the most modern accounting system in the business, with this data processing set-up."

Returning to matters of more immediate concern, Wilkins said: "We have plenty of wheelers and dealers in this business, fellows who can sell hard and run with a record."

"What we could really use is a few more good, sound businessmen who realize that volume movement doesn't necessarily mean profits."

BEST SELLING PHONOGRAPHS, RADIOS & TAPE RECORDERS

These are the nation's best sellers by manufacturers based on results of a month-long study using personal interviews with a representative national cross-section of record-selling outlets (only) that also sell phonographs, radios and/or tape recorders. A different price group is published in the space each week. Each category appears approximately every 14 weeks.

The percentage figure shown for each brand is its share of the total number of weighted points derived from all dealer responses. Point tabulations are based on the rank order of manufacturers' sales at each dealer, and weighted by size of outlet. Only manufacturers earning 3% or more of the total dealer points are listed below.

PHONOS LISTING BETWEEN \$61 and \$80

POSITION				BRAND	% OF TOTAL POINTS
This Issue	8/4/62 Issue	8/5/62 Issue			
1	1	1		Decca	24.0
2	2	3		Magnavox	20.0
3	—	—		Masterwork	13.3
4	3	4		Voice of Music (V-M)	12.8
5	4	7		RCA Victor	3.8
5	—	6		Motorola	3.8
5	—	—		Phonola	3.8
8	5	2		Webcor	3.0
				Others	15.5

Since this chart is based on the previous month's sales, it is conceivable that certain brands will appear at one time and not at another because of many influencing factors. Thus it does not indicate that the above ranking applies for any period other than the previous month. Those brands that appeared in previous issues for this category and do not happen to merit a listing above are shown below with their rank order in the issue indicated in parenthesis.

8/4/62 Issue: General Electric (6); Admiral (7).

5/5/62 Issue: Capitol (5); Arvin (8); Philharmonic (8); Zenith (8).

DISK DEALS FOR DEALERS

A summary of promotional opportunities for dealers by manufacturers and distributors currently offering records at special terms. Shown where available are starting and expiration dates for each deal as well as the date of issue and page number of the original news story and/or advertisement providing details of each promotion. Please consult these for full information.

MANITAB—Sylvester Fleisher 21 1067

Appendix E

1984 Commercial of Sony CD Player

Now Sony turns your living room, car, and backpack into a concert hall.

Since the invention of the phonograph player back in 1877, there have been a myriad of technical refinements, but the basic concept hasn't changed a bit.

Sony has created a revolution in sound reproduction for home, car and even the most compact Disc Player. The new Compact Disc Player is the first to combine the transparency of the photograph with the precision of the laser beam.

Independent record grooves with mathematically perfect circular tracks. Virtually perfect with durable discs.

A system that High Fidelity magazine called "the most fundamental change in audio technology in over 100 years."

Thirty years over 30 compact disc players have been sold. Sony is starting new ideas.

The Compact Disc Player. And the Portable Compact Disc Player.

No people who want true sound had better even know to be without it.

No one doubts these matters. Sony is engineering at what Sony always has done.

Now Sony can take to wherever it wants to go. Sony is always there.

SONY

THE ONLY WAY TO THE SOUND OF THE FUTURE.

Appendix F
Billboard, Aug 11, 1990, p.41

CD One Stop Incorporates Cassettes Format Is 'Here To Stay,' Says Firm's Prez

■ BY DEBBIE HOLLEY

NASHVILLE—After operating for four years as a CD-only distributor, CD One Stop introduced cassette distribution in May to ice the company's profit cake.

Although the Bethel, Conn.-based company services some 3,000 retailers nationally and has enjoyed steady sales increases each year, industry observers say the competitive advantage for an exclusively CD one-stop has faded as the configuration became readily available at most other one-stops.

But Alan Meltzer, president of CD One Stop, disagrees with this view. "That is not the case," he says. "If availability were the criteria, then our sales would have flattened out or gone down."

Instead, the 4 1/2-year-old company has enjoyed a consistent 40%-50% growth pattern, jumping from first-year sales of \$4 million to \$35 million last year. Company officials predict sales will stretch to \$60 million this year, with \$15 million realized from cassette sales.

Meltzer claims the one-stop maintained its competitive edge by carrying an extensive inventory. "We're sitting here with \$8 million worth of CD inventory," which he claims is twice the size of the next-largest CD inventory in the U.S.

But although the company's CD sales were booming, officials decided to add cassettes to the product mix because the configuration is "here to stay," says Meltzer.

When the company first opened its doors, the potential was great for the market to become exclusively CD, he says. However, that never happened, partially because of the high cost of CD software, he says. "Cassettes are cheaper... and a large segment of the market out there is going to continue to buy software that is in the \$5-\$8 range."

Nearly 85% of CD One Stop's accounts stock cassettes, Meltzer estimates. The remaining 15% are CD specialty stores.

Though CD One Stop was slow in jumping on the cassette bandwagon, Meltzer says clients often inquired as to when the company would add the configuration. One reason cassettes were not added sooner is that the company has moved three times since opening its doors.

"We're now in a new facility that is currently 40,000 square feet," Meltzer says. Additionally, 70,000 square feet will be built, bringing the total area to 110,000 square feet.

"We have the merchandise in place, the client base, and the facility in place to do [cassette] business," Meltzer says.

Although artist releases in the cassette configuration often have sales patterns drastically different from CDs, Meltzer says he sees no need to hire anyone with expertise in the tape format. Cassette orders were determined through in-house marketing research, he says.

"We had a really good picture of whom we were serving, what their needs were, and how they were about to respond to our entry into cassette distribution," he says.

The company fills nearly 1,000 orders daily, with cassettes representing 15%-20% of total sales volume.

"It's rare," reports Meltzer, "when our fill is not 85% or better—even on the hardest-to-get title. We stock titles on our shelves that we sell as few as two of a year."

Independent product takes up approximately 10% of the shelves that hold product from more than 400 labels.

The company has spent nearly \$1 million on upgrades and refinements in its computer ordering system, with plans to pump another \$500,000 into the system this year.

The one-stop customers are also getting more sophisticated, Meltzer says. "The non-and-pop shops aren't so non-and-pop anymore," he explains. "These skilled professional people are often market makers."

"In light of the fact that radio is so stagnant and refuses to play new music, these are the people who are ex-

posing and breaking new artists. It's the indie retailer who can turn the [consumer] on to what's new and what's exciting. This guy is the one helping develop new music. It sure as hell ain't radio."

CD One Stop also does its part to help new acts, working records by phone and running contests within the company.

(Continued on page 44)

Classical Fans Get CD-ROM Packages

■ BY RUSSELL SHAW

ATLANTA—Two competing vendors are attempting to appeal to both computer buffs and classical music aficionados by capitalizing on the ability of the CD to store written text as well as prerecorded music.

In March, Warner New Media's Audio Notes released a \$66-list, CD-ROM-based version of Mozart's opera "The Magic Flute," while last October the Santa Monica, Calif.-based Voyager Co. rolled out "The CD Companion For Beethoven Symphony No. 9," a \$89.95-list recording with an accompanying interpretation of the piece.

In addition, Voyager offers "Voyager CD AudioStack," a \$99.95-list product that allows users to create their own companion text for music not yet available in the format.

Both suppliers plan additional releases. Audio Notes will release Beethoven's "The String Quartet" later this month, and it intends to release Brahms' "A German Requiem" by the end of the year. In 1991, Stravinsky's "The Rite Of Spring," Berlioz's "Symphonie Fantastique," and other titles will be released. Voyager is also planning a "Rite Of Spring" release, as well as a Bach's "Brandenburg Concertos Nos. 1-3" package.

The format enables a listener, having hooked up a CD player to a computer equipped with the proper software, to simultaneously hear

music and read notes on the piece and its composer from the computer screen.

Currently, only a small proportion of the personal computer market is represented by about 40,000 users, has the technology—an Apple Macintosh-compatible CD-ROM—required to support the two packages. Moreover, the two vendors point out that only a small percent-

'CD-ROM is a neat little novelty. The customers like it'

age of the 40,000 may be interested enough in classical music or opera to buy the interactive titles.

The two labels currently distributing their packages mainly through software distributors to computer stores. Warner New Media, via WEA, is also selling "The Magic Flute" to music outlets, while Voyager is relying on mail-order distribution, with no current plans to penetrate the music retailer.

The source recording for Warner New Media's 220-minute "Magic Flute" package is a Teldec Records issue by Chor des Opernhauses Zurich. Meanwhile, Voyager, an interactive videodisk publishing house, uses a commercially available recording of Hans Schmidt-Isserstedt conducting the Vienna State Opera and the Vienna State Philharmonic.

Despite the overall technological similarities of the two packages, Audio Notes and Voyager have several notable differences in their set-up and presentation.

The three-disk Audio Notes package is driven by an 800K HyperCard diskette, which stores more than 7,000 screens of commentary about the musical passages, including narration, a glossary, and an interpretive analysis. Keyboard commands aid in navigating the specific audio sections.

Voyager's release of Beethoven's Symphony No. 9 has as its base a two-megabyte HyperCard stack. The recording and the text are divided into five parts—"The Pocket Guide," "Beethoven's World," "The Art Of Listening," "A Close Reading," and "The Ninth Game"—allowing the user to direct the audio to specific passages in the work, which are then described onscreen.

Warner New Media and Voyager both decline to offer specific or general sales figures to date, nor will they provide the number of computer or music-oriented outlets currently carrying the multimedia titles.

"It's just the beginning, so in terms of pure numbers, it is not that commercial right now," says Warner New Media president Stan Cornyn.

But each label is betting that the packages will gain in popularity among audiophiles and computer buffs as prices for the necessary

(Continued on page 45)

Appendix G
New York Times, March 16, 1958

HAPPY TUNES ON CASH REGISTERS

By ROBERT SHELTON

THE advent of the micro-groove ten years ago slowed the speed of turntables throughout the nation, but amply accelerated the tempo of sales of records and phonograph equipment.

A study of business statistics since the coming of LP and 45 r. p. m. disks reveals a trend that has been heartening to nearly everyone in the field, from manufacturer to retailer to music fan.

For 1947 the total volume of retail sales of phonograph records in the United States is estimated at \$203,700,000, the highest point since the industry began in 1877. By 1957 that figure had grown, according to one "educated guess," to \$360,000,000. Industry spokesmen talk now of \$400,000,000 as a goal for 1958 total disk sales, and some believe that figure was attained in 1957.

Accompanying the growth of disk volume has been the resounding boom in the sale of high-fidelity components. Figures from the Institute of High Fidelity Manufacturers, a trade group, indicate the following retail sales of components:

Year	Components Gross (in millions)
1950	\$12
1951	\$27.5
1952	\$47
1953	\$73
1954	\$86
1955	\$121
1956	\$168
1957	\$200

Nor is this the end of the sanguine picture of this billion-dollar industry. According to the Electronic Industries Association in Washington, in 1955 (the first year for which industry-wide figures were available) the sale of packaged phonographs of all kinds reached 3,122,077 units. By 1957 the sale of noncomponent phonographs had risen to 4,978,520 units. While the E. I. A. does not release dollar volume figures, Electrical Merchandising, a trade publication, has offered some estimated average prices that would bring the retail dollar volume of all phonographs sold in 1955 to approximately \$269,225,000 and the figure for 1957 to \$479,500,000.

How can one account for this tremendous rise in the whole industry? George R. Marek,

Record Industry Sees Tape and Stereo Adding New Dimension to Its Sales

RCA Victor Records vice president and general manager, attributes it to the reduced cost of music since the end of the 78 r. p. m. era, to the growth of a "national appetite" for music, particularly among youth, and to better skill in recording coupled with cheaper and better reproduction equipment. To Goddard Lieberson, president of Columbia Records, it is the long-playing record his company introduced in 1948 from which the blessings flow. Said Mr. Lieberson in his year-end statement last December:

"... the long playing record today accounts for 61 per cent of total industry volume, 97 per cent of classical volume and 82 per cent of popular album sales."

Sales Figures

The figures on disk sales are worth looking at in detail. In a highly competitive field, where sales statistics are guarded jealously, the most accurate count seems to be that offered by the Record Industry Association of America, a group representing more than fifty disk manufacturers, including the largest, The R. I. A. A. Figures are based on members' confidential audits. United States excise tax reports and the tallies of the American Federation of Musicians Music Performance Trust Funds. Here is the story as reported by the R. I. A. A.:

Total Industry Sales of Phonograph Records in the United States Only

Year	Retail Price (in millions)
1921	\$105.6
1933	5.5
1940	48.4
1945	99.0
1946	188.0
1947	203.7
1948	172.2
1949	157.5
1950	172.2
1951	178.5
1952	189.0
1953	191.1
1954	182.7
1955	235.2
1956	314.0
1957	360.0

The pattern here reads like a chart of a climber partly up a

mountain, who slides nearly all the way down to the valley and then makes a spectacular comeback and goes on to new heights. In 1921 the industry marked its greatest peak of what since 1912 had been called the business' first golden age. Then radio entered, competing for listeners' money and attention, and the sales dropped off until, during the Depression, the nadir was reached in 1933. From this low point a slow but steady rise continued during World War II and the A. P. M. recording ban. There was an immediate spurt in post-war sales and another climb in 1947.

The introduction of LP in 1948 and the subsequent issue of 45 r. p. m. records led to a "battle of the speeds" and a certain confusion and reticence on the part of the buying public that is reflected in the figures for 1948 and 1949. By 1950 the upward trend of sales had started again, and except for 1954, has continued to date.

The rise in dollar volume is even more dramatic than the list indicates, when one considers that 33 1/3 and 45 r. p. m. disks brought about a tremendous drop in the price of a minute of recorded sound for the buyer. A minute of music on a record today costs less than one-third of what it did before 1948, certainly a key factor in giving record and phonograph sales their great impetus in a period when prices for nearly every other product in the economy rose.

Independent Survey

An independent survey of annual industry dollar volume has been made for Columbia Records and reaches approximately the same figures as the R. I. A. A. estimates above, with the exception of 1954 and 1957. The Columbia report finds that the increase continued steadily and reached \$201,000,000 in 1954 and the all-time peak of \$400,000,000 in 1957. Columbia's findings are that LP accounted for 12 per cent of industry dollar volume in 1949, rose to 30 per cent by 1953 and attained 61 per cent last year.

The actual number of 33 1/3

records sold each year has not been determined by any of the statistical studies used. There is, however, a partial indication of LP's growth in the proceedings of the annual conventions of the American Federation of Musicians. The following figures, it must be noted, include only those LP's made under a licensing arrangement with the A. P. M. and only those made in the United States:

Year	Retail LP Sales
1949	5,332,793
1950	5,808,858
1952	9,171,173
1954	11,103,559
1956	33,472,033

With the growth of LP and 45 r. p. m. the 78's are gradually being pushed out, but are still sold for some children's records, according to the R. I. A. A., in 1956 approximately 255,000,000 records were sold in the United States. Of that number 108,000,000 were 45's, 50,000,000 were LP's and 67,000,000 were 78's.

That ratio has changed sharply since 1956. As reported by the Billboard for the week ending Feb. 15, 1958, the share of unit sales was as follows: 45 r. p. m.—68.3 per cent; 12-inch LP's—24.4 per cent; 45 extended-play—5.1 per cent, and 78's only 2.1 per cent, with other unit sales for .1 per cent. In that same period the share of dollar market pie-chart shows that of every \$100 spent in retail stores \$58 was spent for 33 1/3 r. p. m. 12-inch records and \$36.20 for 45 r. p. m. The 45's

LP CHECK LIST

Symphony
 Brahms: Symphony No. 1. Klempner (Angel)
 Bruckner: Symphonies Nos. 4 and 7. Loebum (Decca)
 Haydn: Symphonies Nos. 92 and 104. Buschum (Decca)
 Kachalavsky: Symphony No. 4. Kachalavsky (Mentor)
 Mahler: Symphony No. 4. Klempner (Angel)
 Schumann: Symphonies Nos. 1 and 4. Krips (London)
 Vaughan-Williams: Symphony No. 8. Boult (London)

r. p. m. extended-play records account for \$4.20 and 78's only \$1.20, with other speeds accounting for the remaining fraction.

In still another area of the home sound field, tape recorders have been enjoying a growing popularity. According to the Magnetic Recording Industry Association, in 1957 stereo tape sales reached \$50 million, accounting for 50 per cent of national sales; stereo recorded tape sales reached a record \$5,000,000, accounting for 75 per cent of all recorded tape sold to consumers.

The happy tunes that have been playing on the nation's cash registers during the age of vinylite are by no means ended. The industry is at the brink of a new era, the age of speeds accounting for 1 per cent. In that same period the new dimension in music reproduction on disks and tape will add another dimension to the cash sales of a flourishing industry.

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