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AIMS AND SCOPE

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International Journal of Music Business Research

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Editorial

Peter Tschmuck[1]

The first article of the October 2018 issue of the International Journal of Music Business Research (IJMBR), *"The secondary market for concert tickets: theory and evidence"* by Marie Connolly & Alan B. Krueger model the secondary ticketing market by considering that *"performers do not want to be perceived as gouging fans, they choose to underprice tickets and provide consumer surplus to customers"* (p. 6) In their empirical research, the authors highlight the constant underpricing of tickets that foster the secondary ticket market. However, as the concert industry moves from a provider of social events to a commodity market, Connolly & Krueger expect the social constraints faced by the artists and promoters to lose their power, enabling them to extract more of the high-value consumer surplus by raising the price of the good seats.

The second article is *"The development of the artist-fan engagement model"* by Sarita M Stewart, which develops a model to explain the relationship between musicians and their fans. It is based on hedonic consumption and parasocial interaction theory and explores how the effects of music and artist drive fan engagement through access or ownership of recorded music.

The third and concluding article of this issue is *"Blockchain for Music Business: Preventing the Threat of Disruption"* by Wolfgang Senges. This article considers the blockchain as a disruptive power for the music industry that needs a useful framework to prevent damage. Therefore, he recommends a *"collaborative approach, agile methods, and transition*

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management … as a toolset to allow for successfully shaping the impact of disrupted processes" (p. 82).

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The secondary market for concert tickets: theory and evidence[2]

Marie Connolly & Alan B. Krueger[3]

Abstract
Tickets for many live entertainment events are distributed in a primary market and then resold on a secondary market. How big is the secondary market? Why does it exist? We propose a model based on fairness considerations: because performers do not want to be perceived as gouging fans, they choose to underprice tickets and provide consumer surplus to customers. We then analyse data from surveys we conducted at randomly selected American concerts. We find that resale accounts for 10 percent of all concert tickets purchased. We present additional findings, including the timing of sales and the presence of an endowment effect.

Keywords: Concert tickets; primary market; secondary market; fairness; social constraint; endowment effect

1 Introduction

The resale market for live entertainment events has long intrigued economists. Some high-profile events like the Super Bowl or concerts by

[2] We gratefully thank Craig Deshenski and Ed Freeland for help conducting the surveys used in the paper. We also thank discussants and participants at the CEA Meetings, the Economics of Culture Days in Paris, the Journées du Cirpée, the SEA Annual Meetings, and the 2017 Music Industry Research Association Annual Conference for helpful comments.

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superstar performers regularly sell out, with tickets resold for multiples of their initial price on a secondary market. Why are the initial prices for these events not set to clear the market, a strategy that would seem to increase artist revenues? Even tickets for lower-profile events are often resold above their list price, especially for good seats. Happel & Jennings (2010: 120—121) summarize the conundrum: *"The puzzling economic question that springs from this longstanding practice is: Why would a primary seller knowingly underprice high-demand goods? Underpricing in the primary market is the driver for the allocation methods of the secondary market, i.e., higher prices, and is actually a deliberate strategy on the part of event sponsors because of any one or a combination of several factors that have emerged over the centuries as we have developed a clearer understanding of ticket markets."*

We address two questions in this paper: How big is the secondary market for concert tickets in the U.S.? Why tickets are apparently not priced to clear the market originally? The first question is relatively straightforward to answer, but one needs appropriate data. Such data have not been available up until now, and we use data from a unique survey we conducted in order to estimate the size of the market. The answer to the second question is not as straightforward. There is no shortage of theories to explain the existence of the secondary ticket market. One hypothesis is that ticket prices are set below the market clearing level to attract a larger crowd and create a "buzz" that increases demand. Another explanation is that fans are an input into the quality of the event, and promoters distribute tickets in a way to select the most enthusiastic fans. Some cite uncertainty of demand as a cause of underpricing. Yet another explanation is that tickets are resold simply because people's plans or interest change unexpectedly. Happel & Jennings (2010) review the existing literature and industry insiders' wisdom and propose a list of eight possible reasons for the primary-market underpricing, some of which we just mentioned. Two (related) listed reasons have actually not been formally introduced in models of the primary and secondary markets for entertainment tickets: fairness and goodwill constraints. Fairness considerations and the feedback between con-

sumers' perceptions and a firm's pricing strategy have been pointed out before (Rotemberg 2011; Courty & Pagliero 2008 and 2010; Anderson & Simester 2010; Sonnabend 2016). To our knowledge, however, no paper has used fairness or social constraints to explain primary market underpricing and subsequent secondary market dynamics.

In the first part of this paper we propose a simple theoretical model of the primary and secondary markets for tickets that introduces two new components: a fairness concern that constrains initial pricing, and an endowment effect that pushes the secondary market price higher by limiting supply. Both lead to a wedge between primary and secondary market prices. According to the fairness concern, performers do not want to be viewed as gouging their fans. They set their price below what the market will bear because doing so leads to greater demand in the long run. As noted by Happel & Jennings (2010: 125): *"… these price constraints create a perception of fairness, a very real, but binding constraint that public attitudes exert on markets."* Our second innovation is to introduce an endowment effect, a phenomenon often reported in laboratory experiments but rarely used in pricing models. This endowment effect increases the value people attach to their concert ticket once they have bought it on the primary market, reducing supply to the secondary market.

In the second part of this paper we bring evidence to bear on the secondary ticket market. Specifically, we have designed and conducted surveys at 30 concerts in the U.S. We began with two large-scale surveys of fans in attendance at a *Bruce Springsteen and the E Street Band* concert in 2002 and a *U2* concert in 2005. We then designed a survey of a smaller number of fans at a larger number of nationally representative concerts in 2006. These surveys provide the first available information on the size of the secondary ticket market, the price and source of resold tickets, the tickets most likely to be resold, and the reasons why customers purchase in the secondary market.

We use the data we collected to expose facts about the business and assess various existing theories of the secondary ticket market. We first estimate the size of the secondary market for concert tickets in

2006 in the United States at $600 million. The average mark-up in the secondary market is about one third over the primary market, implying that promoters and artists leave about $200 million on the table, money that is captured by resellers. We then document various phenomena, including the resale and mark-up rates, the timing of the sales, the price differentials by reseller and the price dispersion on the primary and secondary markets. Interesting findings emerge when we split our sample by price tier, which is strongly linked to seat quality. We find that the best seats are most likely to be resold and that the price mark-up in the secondary market is highest for the best seats. In addition, most fans who bought a ticket on the secondary market said they did so because they wanted to obtain a better seat, not because tickets were unavailable.

The remainder of this paper is organized as follows. Section 2 summarizes some of the various economic models that have been proposed to explain the secondary market. Section 3 presents our simple theoretical model of the primary and secondary market for concert tickets, which introduces a fairness constraint and an endowment effect. Section 4 describes our survey data and section 5 presents our main empirical findings. Section 6 offers concluding remarks.

2 Models in the literature

Several models of the primary and secondary markets for concert tickets have been proposed. We do not attempt here to provide an exhaustive review, but rather present some of the most relevant models and their main features as they relate to primary market underpricing and social interactions.[4] Rosen & Rosenfield (1997) apply price discrimination to ticket pricing, where a promoter optimally sets the price of high- and low-quality seats depending on the various types of buyers and their willingness to spend for each type of seat. While insightful, this model

[4] See Courty (2000) and Depken (2007) for more exhaustive reviews of the literature. See also Connolly & Krueger (2006) and Leslie & Soresen (2014) for a description of the industry and its main players.

focuses on the primary market, and does not raise the issue that is a puzzle for many economists, as we noted in Connolly & Krueger (2006: 676): that this *"pricing results in excess demand for many concert performances, which leads to scalping."* In his study of the secondary market for concert tickets, Swofford (1999) compares the promoter's profit maximization problem with that of the reseller, and suggests that the underpricing of tickets on the primary market may exist due to the promoter facing uncertainty over sales and being more risk averse, to the scalper having a lower cost function, or to the promoter having a long-term revenue function in mind, whereas the reseller is maximizing a one-period revenue function. It is not clear why primary ticket sellers are risk averse, however, especially because they often promote several concerts in a year and can therefore diversify risk. It also seems unlikely that a scalper would have a lower cost function than a large primary market seller like Ticketmaster. Courty (2003) also studies the resale market and rejects the conventional underpricing explanation. He introduces two types of customers with time-varying preferences: the "diehard fans," who secure their tickets early, and the "busy professionals," who have higher valuations but cannot commit in advance. The resellers cater to the latter type, optimally reallocating tickets to the busy professionals with higher valuations as the shows approaches. In the Courty model, prices should be increasing as the concert date approaches and uncertainty is resolved.

Depken (2007) starts from a Rosen & Rosenfield-type model with different types of customers as in Courty (2003), but adds a third category: the speculator. He focuses on the theoretical implications of scalping on the primary-market prices and finds that scalping can raise, lower, or have no effect on prices, depending on the reservation prices for the seats of the different types of buyers. Since the effect is ambiguous, he provides some empirical evidence using data from professional baseball and football ticket prices in the United States. He finds that anti-scalping legislation is associated with higher ticket prices. This fits with a model where the possibility of resale allows speculators to buy on the primary market to later resell to "executive fans" who, like Courty's busy profes-

sionals, only decide at the last minute and are catered by speculators (not directly by promoters). Depken's results would indicate that team owners find it revenue-enhancing to sell to both the high-value fan and the lower-value scalper, moving from an exclusive (high-value) pricing to an inclusive pricing, thus lowering prices.

Depken (2007) asks what happens to prices when laws against scalping are introduced or repealed, but his model does not inform us on the laws' effect on social welfare. For a thorough welfare analysis, one can turn to Leslie & Sorensen (2014). Leslie & Sorensen take primary market prices as given and focus on the mechanics of ticket resale. The strength of their study is in their use of a unique transaction-level dataset of rock concerts in their structural econometric analysis and their attention to several key aspects: the presence of brokers and non-brokers as resellers, costly and endogenous rent-seeking behaviour on the primary market, and the ticket reallocation mechanism on the secondary market, among others. Their study is however limited in terms of answering our two main questions. Firstly, their secondary-market data come from only two, albeit large, resale platforms: eBay and StubHub. They could only provide a partial estimate of the size of the secondary market. Secondly, they do not model the pricing behaviour of promoters and artists on the primary market, so their model, however rich, cannot address the issue of the source of the primary-market underpricing.

An interesting paper by Cheung (1977) features a model with two seat qualities. He proposes that the better seats are underpriced due to an enforcement constraint: the profit-maximising way to keep low-price-ticket holders from moving to a better seat during the performance is actually to make sure none of the good seats are free, which can be achieved by underpricing the good seats. Cheung's model implies that underpricing should be higher for shows that do not sell out, since people cannot easily find an empty seat at a sold-out show.

Becker (1991) introduces the notion of "social influence" on price in the context of restaurant pricing, a notion later exploited by DeSerpa & Faith (1996) as the "mob effect" and by Busch & Curry (2010) who intro-

duce the use of queues as a screening mechanism, making sure that more of the desired customers (the better "input") get tickets to the performance. Becker's (1991) model for eating at a restaurant can be applied to entertainment or sporting events. His key insight is that an individual's demand is a function of the price, but also of the aggregate demand: the more popular a restaurant or a play, the stronger the individual's demand. The consequence is that there are two possible equilibria: one with excess capacity and the other with excess demand. But because demand is discontinuous at the equilibrium price with excess demand, the seller cannot increase prices to clear the market: even a small increase could send demand plummeting. DeSerpa & Faith's (1996) model borrows on Becker's by making an individual's reservation price depend on the crowd's "noise" or reaction. As in Becker, there is excess demand at equilibrium, which DeSerpa & Faith argue is not a miscalculation on the part of the promoters but rather a consequence of the "mob good" phenomenon.

Busch & Curry's (2010) model is closely linked to Becker's and DeSerpa & Faith's but relaxes the necessity to have capacity constraints. They allow the explicit use of line-ups as an extra pricing dimension that the artist uses to screen fans. Consumers vary according to their willingness to pay and to line-up to get tickets. On the primary market, *"there exist consumers willing to pay the posted price—but not to line up."* (Busch & Curry 2010: 42) This situation creates an impression of excess demand. A secondary market thus arises because high-valuation consumers screened out of the primary market because of the line-up costs, that is "low-quality" (in terms of concert input) individuals, may be able to pay ticketholders enough for them to agree to sell their tickets. A problem with models that rely on time or effort as an extra dimension of pricing is that they do not reflect today's reality that most ticket sales are done over the internet and not in person. The need to line up and camp by the ticket booth to obtain the best tickets to a concert has been superseded by the need for a high-speed internet connection. The time-rich/dollar-poor fans that were ready to line up may not have the resources to secure tickets in a digital world. In other words, the artists

may have lost the possibility to use time or effort as an additional, discriminating dimension of pricing.

3 A model of social constraints

Becker (1991), DeSerpa & Faith (1996) and Busch & Curry (2010) all introduce a social aspect in their model: individual demand depends on aggregate demand or on crowd noise, or concertgoers influence the concert experience of others. Yet none invokes the presence of fairness considerations. Happel & Jennings (2010: 126) are emphatic when it comes to this issue: *"The notion of unfairness is writ large in the primary and secondary ticket markets."* In this section we lay out a simple model which accommodates such considerations. We avoid features that would make the model more realistic but detract attention from our main innovation. In particular, we do not introduce seat quality, different types of consumers or professional resellers, capacity constraints, or heterogeneity in artists/promoters' pricing methods, but we do not think that our basic findings would be invalidated by their inclusion in a richer model.

3.1 Description of the model

Our model uses the concept of social constraints stemming from fairness perceptions from the customer, as documented in Kahneman, Knetsch & Thaler (1986) and Roth (2007). Consumers may regard a price as unfair if it deviates from a reference price or if it is based on supply/demand ratios rather than set by a cost-based rule. For example, survey responders find a price increase of shovels after a blizzard to be unfair, but consider it fair if due to an increase in the production costs (Kahneman, Knetsch & Thaler 1986; Gielissen *et al*. 2008). Rotemberg (2011) provides a fine example of how consumers' perceptions of a firm's altruism influences their demand, and hence the firm's pricing. In Rotemberg's model (2011: 952), *"fear of angry reactions leads firms to act as if they were altruistic. They do so because consumers react negatively if firms demonstrate that they are insufficiently benevolent towards them. As a*

result, firms are forced to internalize consumer emotions." In Sonnabend's (2016) model ticket pricing at German club concerts, fans have a concept of what a fair price is, resulting in promoters facing a demand for concert tickets that is kinked at that fair price level. A real-life example along those lines happened when Apple decided to drop the price of its popular iPhone by $200 just three months after it initially went on sale for $599. Loyal Apple fans and early adopters felt like they had been defrauded and expressed their outrage. As a result, Apple quickly reacted by offering a $100 store credit to the early adopters. Highlighting the strong influence of consumers on Apple, in a public letter to customers Steve Jobs wrote *"our early customers trusted us, and we must live up to that trust with our actions in moments like these."* (as cited in Hafner & Stone 2007) Fairness considerations can be strong and may give rise to situations otherwise considered as irrational. For example, Zizzo & Oswald (2001) documented a lab experiment where people were willing to spend their own money to reduce others' incomes, especially if the other was considered wealthy.

In our model, as in Rotemberg's or Sonnabend's, the concept of fairness perceptions is central to the promoter's/artist's pricing problem. In order to build loyalty from a large fan base (who will attend concerts in the future and buy recorded music), the artist wishes to avoid being seen as gouging his fans for money and will thus set prices below the profit-maximizing level. The artist thus internalizes his fans' gouging aversion. To build long-run popularity, the artist has the intention of providing fans with a larger share of consumer surplus than would be the case if the artist were simply maximizing short-run profit. In the presence of scalping, however, the middleman acts as an intermediary between the promoter and the fan, capturing some of the surplus meant for the fan.

Billy Joel explains it this way: *"The brokers that drive the prices up are ripping me off because I'm not getting the money... and they're ripping off the customer because the customer wants the ticket and they know that the market will bear a certain price."* (cited in Spitzer 1999: 2) If Billy Joel knows that *"the market will bear a certain price,"* why would

he still underprice his tickets? The answer, we argue, is that he wants to maintain an image of being fair to his fans and therefore labours to prevent them from being "ripped off." This social constraint leads to underpricing on the primary market, which in turn drives the secondary market. Note that the artist's true consideration for his fans is irrelevant: what matter are the fans' perceptions, whether based on real or pretend concern. This emphasis on perception explains why some artists may desire to capture some of the secondary-market profits by reselling tickets to their own show but need to do so without the public being aware of their involvement. That way, they get to maintain their image and make up for the losses by engaging in resale. This practice is not new and appears widespread, but customers become outraged if they discover artists profiting from the secondary market, as was the case in noteworthy Michael Jackson and Bruce Springsteen concerts (Happel & Jennings 2010).

3.2 Market demand

As a benchmark, we first introduce the conventional market demand. We call conventional market demand the demand for tickets that would prevail if consumers did not penalize artists due to fairness constraints. We start with a very simple setup where each consumer either buys 1 ticket or no ticket, and the size of the market is normalized to 1. Each consumer's willingness to pay (WTP) for a ticket is α_i, where α_i is uniformly distributed between 0 and 1 ($\alpha_i \sim U(0,1)$). A consumer will desire to buy a ticket if his WTP exceeds the primary market price p^p. Formally, individual i's demand is $q_i(p^p) = 1(\alpha_i > p^p)$ and market demand is $Q^M(p^p) = 1 - p^p$. Note that Appendix A contains a more detailed description and resolution of the model.

3.3 Primary market: band demand

Next, we define the consumers' behaviour on the primary market when buying a ticket from the band at the initial offering. We call this the band demand. Compared with the conventional market demand, con-

sumers' demand is reduced because they dislike being gouged by the artist. The WTP of an individual consumer now has the uniformly distributed component α_i *less* a gouging penalty or a gouging aversion term γ which depends on p^p. Here we suppose that $\gamma(p^p) = \gamma_i \times p^p$, where γ_i is independent of α_i and uniformly distributed between 0 and 1 ($\gamma_i \sim U(0,1)$). The gouging aversion thus increases with the price. Note that more complicated functional forms of gouging aversion could be introduced, but with a similar effect of reducing demand. An individual's demand for the band is now $q^B_i(p^p) = 1(\alpha_i - \gamma_i\, p^p > p^p)$: the stronger the aversion, the less likely an individual will be willing to buy for a given price and ticket value α_i. Total demand for the band, $Q^B(p^p)$, will have two components that depend on the primary price p^p. For simplicity, we present graphically the market and band demand in Figure 1, along with the corresponding market and band marginal revenue curves. Formulas can be found in Appendix A.

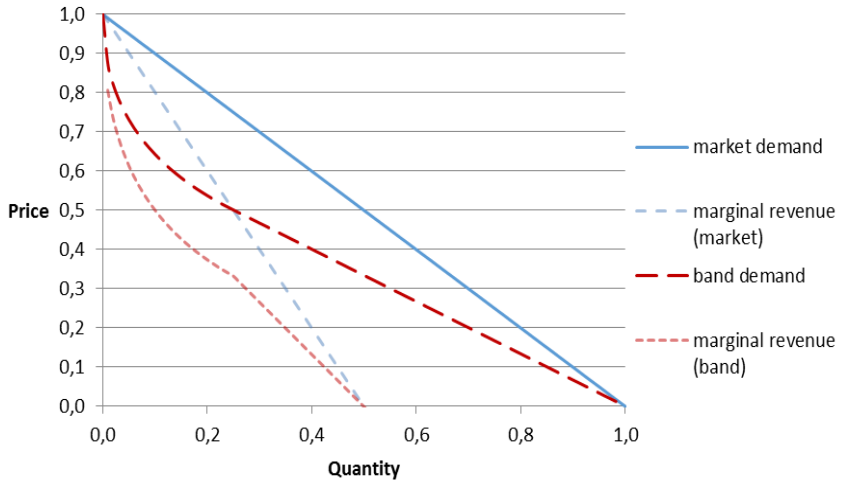

Figure 1: Primary market demand and band demand

It is clear from looking at Figure 1 that the demand for the band appears to be bowed in compared with the benchmark, no-aversion market demand. To illustrate the primary market differently, we present in Figure 2 the market in the (α_i, γ_i) space. Consumers who buy a ticket on the primary market are represented by the area B+C+D. Most models of ticket pricing treat the artist as having some monopoly power, setting a price that equates marginal cost to marginal revenue. As we can see on Figure 1, for any non-decreasing marginal cost function the artist faces, primary market price will be below the price that would have prevailed in the absence of gouging aversion. This is the basis of our explanation for primary market underpricing.

3.4 Secondary market

In our simple model, a secondary market arises because consumers do not impose the gouging penalty on a (re)seller when they buy a resold ticket. In effect, this means that resellers can attain the full potential of the market demand; they are not restricted to the depressed band demand due to fairness considerations. Penalizing the artist with the gouging penalty but not the reseller may seem like a self-inflicted punishment since it prevents high-valuation individuals from purchasing on the primary market and pushes those individuals to pay an increased price for their ticket on the secondary market. This apparently time-inconsistent behaviour from the part of the consumers may be explained by the fairness constraint they wish to impose on the resellers and is consistent with Zizzo & Oswald's (2001) findings that people are willing to pay from their own pockets to punish wealthier individuals, as mentioned previously.

3.4.1 Who sells? (supply to secondary market)

The supply of tickets to the secondary market comes from the resale of tickets by individual customers. Here we make abstraction of professional resellers to highlight the main feature of interest of our model, the gouging aversion. Including them would be akin to allowing a fraction of consumers to have $\gamma_i = 0$ and would perhaps change the magni-

tude of the effects but not the qualitative conclusion. Moreover, a significant portion of the resellers are not professionals but rather individuals with extra tickets who realize they could be better off by selling on the secondary market (as evidenced by Leslie & Sorensen (2014) who estimate that 46% of resellers are not professionals). Our data do not allow us to distinguish professional resellers from consumer-resellers, but just above 3% of concertgoers surveyed said they had sold a ticket for the event—bearing in mind that this is not a representative sample of resellers but of people in the attendance. Of those, 15% sold above face value. An individual will want to resell his ticket if his benefit from selling the ticket is greater than his benefit from holding it. The benefit from selling a ticket is $p^s - p^p$, where p^p is the price on the primary market and p^s the price on the secondary market. The benefit from holding a ticket is the consumer surplus from the primary market, $\alpha_i - \gamma_i p^p - p^p$. Thus a customer will want to sell his ticket (acquired on primary market) if $p^s - p^p > \alpha_i - \gamma_i p^p - p^p$ or $p^s > \alpha_i - \gamma_i p^p$. Note that in order to sell a ticket, an individual must first have acquired one on the primary market, which means that $\alpha_i - \gamma_i p^p > p^p$ must hold. We can thus write these conditions as $(1 + \gamma_i) p^p < \alpha_i < p^s + \gamma_i p^p$. On Figure 2, consumers who want to sell a ticket on the secondary market are represented by area B+C: of the B+C+D who have a ticket from the primary market, those with low enough ticket valuation (B) or those with high enough gouging aversion (C) will be happy to sell their ticket.

3.4.2 Who buys? (demand on secondary market)

An individual will want to buy on the secondary market if he did not get a ticket on the primary market ($\alpha_i - \gamma_i p^p < p^p$) and if his WTP on the secondary market is greater than the resale price ($\alpha_i > p^s$). These conditions can be written as $p^s < \alpha_i < (1 + \gamma_i) p^p$ and correspond to area A on Figure 2: secondary-market buyers have both a high valuation and a high gouging aversion.

3.4.3 Secondary market equilibrium

The secondary market equilibrium will be at the point where the number of tickets on offer is equal to the number of tickets desired. This corresponds to the secondary price p^s such that the fraction selling is equal to the fraction buying, i.e. such that A=B+C on Figure 2. The difference between the primary price p^p and the secondary price p^s is the resale market mark-up.

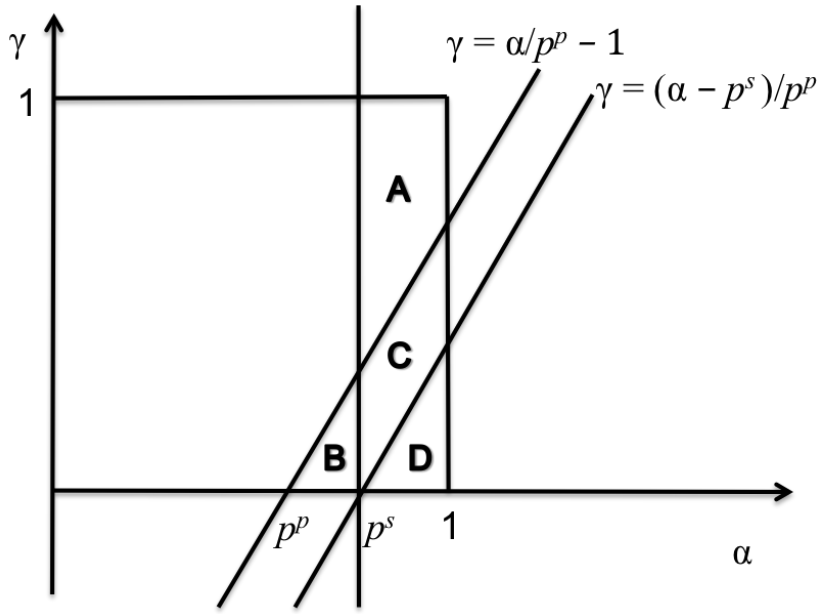

Figure 2: Primary and secondary market buyers and sellers

Note: This figure is for the case where $p^p > ½$.

3.5 Endowment effect

We tweak our simple model with gouging aversion to introduce another parameter that will push the secondary market price up: an endowment effect. In the presence of an endowment effect, the willingness to pay

that ticket holders exhibited in the primary market is not equal to their willingness to sell (WTS) on the secondary market. Once endowed with a ticket, individuals will attach *more* value to the ticket than they did previously, and so will be *less* willing to sell. We can model this as a shift in the distribution of α_i, or as an added component to the WTS: $WTS_i = \alpha_i - \gamma_i p^p + \varepsilon$, where ε is a common and constant endowment effect, which does not depend on α_i or γ_i. In terms of Figure 2, we can visualize this as an increase in the area of triangle D (at the expense of B+C), which represents the primary-market ticket buyers who do not sell on the secondary market. This thus reduces the combined area of B+C, but does not change A. As a result, the secondary market price p^s is pushed up higher than in the no-endowment case in order to clear the secondary market: the price p^s that equalizes the unchanged area A to the reduced B+C is higher.

4 Data

Having laid out a model that uses fairness considerations to explain primary-market underpricing, we now turn to the empirical part of the paper, starting with a description of our data. We conducted two kinds of surveys to study the secondary ticket market. The first type consisted of interviewing large samples of fans in randomly selected seats at two major concerts. The second consisted of interviewing a smaller number of randomly selected attendants at 28 concerts that were selected to be nationally representative. We describe each survey below.

4.1 Superstar concerts surveys

The first survey, which is discussed in Connolly & Krueger (2006), was conducted at a *Bruce Springsteen and the E Street Band* concert that was part of "The Rising" tour at the First Union Center (now Wachovia Center) in Philadelphia on October 6, 2002. The second survey was conducted at a *U2* concert part of the "Vertigo" tour at the Madison Square Garden in New York City on November 22, 2005. For both surveys, the samples consisted of a stratified random cluster sample of seats (a seating section), and people were interviewed shortly before the start of the

show. Lower-tier sections were over sampled for the Springsteen concert, and weights were developed to adjust for the over sampling. For *U2*, sections were selected in proportion to representation in the venue, so the sample is self-weighting. 858 fans were interviewed at the Springsteen concert and 903 at the *U2* concert. Although it was not possible to compute a response rate, compliance with interview requests was very high.

4.2 National Concerts Survey

For the national survey, data were collected during late summer and early fall of 2006. A large concert promoter provided us with a complete listing of all the shows under contract between August 6, 2006, and October 27, 2006. This universe represented a total of 1,068 shows and almost 300,000 tickets. For each week, three shows were selected at random with probability proportional to venue capacity, giving the shows in larger venues a higher probability of selection. Weights were developed to make the sample representative of all concert attendees over the sampled months (see Appendix B). At each selected show, concertgoers in random sections of the venue and the concession stands were surveyed. The venues supplied four fan ambassadors or ushers to conduct the interviews. The Princeton Survey Research Center trained the interviewers and selected random sections of the venue. A total of 3,281 attendants at 28 shows were interviewed. (Two concerts were dropped for administrative reasons.) The sample size varied from 16 to 211 fans per show, with a mean of 141 and a standard deviation of 46.

Questions were asked about how the person obtained his or her ticket, the specific website if purchased over the internet, the price of the ticket, the reason for buying on the secondary market (if applicable), when the ticket was bought and the seat location. Additional questions regarding ancillary spending, how much the respondent liked the lead band and a specific question about the endowment effect (more on this in subsection 5.3) were also asked. Basic demographics were covered (age, gender, occupation). The questionnaires for the superstars' concerts surveys were similar, albeit with less detail on ancillary spending.

The questionnaires for the national and the superstar surveys are reproduced in Appendices C and D.[5] As long as seat location was specified, we were able to match the respondent with the face value and associated fees of his or her ticket, thus providing us with a list price on top of the actual price paid.

5 Findings

5.1 Summary statistics and size of secondary market

We start by addressing our first question: how big is the secondary market for concert tickets in the United States? Table 1 shows summary statistics for the *Bruce Springsteen* concert, the *U2* concert and the national survey. Firstly, we computed the resale rates, i.e. the percentage of tickets sold on the secondary market. Due to a low response rate to the source of ticket question, the resale rate was calculated using the price paid for a ticket for the superstars' survey. A ticket was deemed resold if the price paid was at least 20% above face value. This was not necessary for the nationwide survey, for which the resale rate was computed based on the source of the ticket. Over all concerts, we find that 10% of tickets were bought on the secondary market in our nationwide survey, which is significantly less than the rates hovering around 30% in the superstars' surveys. Next, we look at the prices paid. In the nationwide survey, the average (median) ticket was listed at $81 ($74), and the overall average (median) price paid for a ticket was $88 ($86).[6] Tickets bought from resellers were paid on average $122, and had an average list price of $91, consistent with the hypothesis that more of the better, pricier seats were resold. The secondary market mark-up, computed as the percentage above list price at which a ticket was purchased, is also significantly lower in the nationwide survey than in the superstar survey,

[5] The version included here is Version A. Two versions were printed and randomly assigned. The difference between the two is question 6 (national) or 5 (superstar), which relates to the endowment effect. More on this in subsection 5.3.

[6] There might have been some confusion with respect to the inclusion of the various fees in the price reported. All averages exclude prices of 0, considered as gifts or comped tickets.

with an average mark-up of 36% nationwide vs. 240% at the *Bruce Springsteen* concert and 145% at the *U2* concert. All these summary statistics are consistent with the findings of Leslie and Sorensen (2014), who use data from Ticketmaster, StubHub and eBay regarding 56 concerts during the summer of 2004. They find a resale rate of 4.96%, which is half what we find but their data only cover two outlets for resold tickets. Their price figures line up surprisingly well with ours: they find an average price paid on the primary market of $81, an average resale price of $113 for an average mark-up of 41%, and an average list price of resold tickets of $90.

We now have all the data necessary to estimate the size of the secondary market for concert tickets. With 10% of the tickets being resold, and an average resale price 51% higher than the average list price ($122/$81), we estimate the size of the secondary market to be about 15% that of the primary market. Pollstar, a trade publication of the performance industry, estimates that North American concert ticket sales were $3.6 billion in 2006. Including fees raises the market to about $4 billion, which would suggest that the secondary market was about $600 million. This also suggests that in 2006 artists were leaving around $200 million on the table in extra revenues, a considerable sum that was captured by resellers on the market. According to our model of section 3, these $200 million correspond to the amount of loyalty penalty that the fans impose on the bands, or the value of the gouging aversion that is internalized by the promoters when pricing their tickets on the primary market. We note that these are averages and that they mask considerable heterogeneity across artists and events. Resale rates for individual concerts in our national survey range from 0% to 24%, and average mark-ups from -37% to 155%. Figures from our superstars' surveys suggest that a small number of very popular artists might be "paying" a lot more to "buy" the loyalty of their fans and that a glut of less popular artists are less affected.

	Bruce Springsteen **(Oct. 2002)**	***U2*** **(Nov. 2005)**	**Nationwide Survey (Aug.–Oct. 2006)**
Resale Rate[1]	28.1 %	36.9 %	9.9 %
Source of Tickets			
Primary Market[2]	55.5 %	25.8 %	78.1 %
Ticketmaster, Promoter and Box Office	*55.5 %*	*25.1 %*	*73.9 %*
Fan Club	—	*0.7 %*	*4.2 %*
Secondary Market	25.2 %	30.7 %	9.4 %
Ticket Broker	*15.1 %*	*2.0 %*	*3.4 %*
Internet	*8.5 %*	*28.0 %*	*4.4 %*
Scalper	*1.6 %*	*0.7 %*	*1.7 %*
Unknown/Comped	19.3 %	43.5 %[6]	12.5 %
Average List Price	$75	$114	$81
Average Price Paid[3]	$137	$169	$88
Average Resale Price[4]	$255	$235	$122
Average List Price of Resold Tickets	$75	$97	$91
Average Mark-up[5]	240 %	145 %	36 %
Median Mark-up[5]	220 %	93 %	4 %
N	858	903	3,281

Table 1: Summary statistics, superstar events and nationwide survey

Note: Data from the *Bruce Springsteen* column were collected at the First Union Centre in Philadelphia on October 6, 2002 at a *Bruce Springsteen and the E Street Band* concert part of "The Rising" tour. Data from the *U2* column were collected at Madison Square Garden in New York City on November 22, 2005 during a *U2* concert part of the "Vertigo" tour. *Bruce Springsteen* results are weighted using sample weights. Data for *U2* are self-weighted. See Data section for details on the nationwide survey. Weighted by sample weights.

[1] For the *Bruce Springsteen* and *U2* data, a ticket is deemed resold if the price paid is 20% or more above the list price. For the nationwide survey, the source of the ticket was used.

[2] Respondents who said they obtained their ticket through a friend were assigned friend's method.

[3] Average of price paid for all tickets, excluding zero prices.

[4] Average of price paid for tickets bought on the secondary market, excluding zero prices.

[5] Mark-up is computed as the ratio of the price paid for a ticket in the secondary market relative to its list price, minus one, times 100.

[6] For the *U2* data, 37.9% are missing for the source of ticket. There are however less than 6% missing for the price paid data.

5.2 Additional statistics on the secondary market

Next, we delve deeper into our national survey results and report a series of highlights from our findings. Table 2 presents information on the source of tickets for respondents to our nationwide survey, and table 3 focuses on the secondary-market sources. The market share of scalpers (usually selling at the venue the day of the show) is half that of ticket brokers (online and over the phone/in person combined), who often advertise their tickets on the internet and sell through their websites. Of the tickets bought on the secondary market, eBay and online ticket brokers each account for about 20% of the market. The Herfindahl-Hirschman index (a measure of industry competition and market concentration) for the secondary market is 1,568, indicating moderate concentration.[7] The market is quickly changing however, and those market shares have probably changed since 2006. Since then, TicketsNow has been acquired by Ticketmaster (but for now continues to operate as an independent subsidiary), eBay bought StubHub (they also still operate separately but cross-list their tickets), and Ticketmaster has launched its own TicketExchange program, providing an exchange platform for customers to buy or sell tickets.

Source of tickets	Percentage
Ticketmaster	56.5 %
Promoter	10.0 %
Box office	7.4 %
Fan club	4.2 %
Comped/won	6.5 %
Secondary market	9.4 %
Unknown	6.0 %

Table 2: Source of tickets, nationwide survey

Note: Sample size is 3,281. The 28% of respondents who said they obtained their ticket through a friend were assigned friend's method. Weighted by sample weights.

[7] The Herfindahl-Hirschman index is computed as $H = \sum_{i=1}^{n} s_i^2 = 1568$, where s denotes the market share (in percentage) of a given seller.

Source of tickets (secondary market)	Percentage
Ticket broker (online)	19.7 %
eBay	19.5 %
Scalper	17.5 %
Ticket broker (phone/person)	16.4 %
StubHub	11.8 %
TicketsNow	7.1 %
Craigslist	4.7 %
Razorgator	3.5 %

Table 3: Source of tickets on secondary market, nationwide survey

Note: Sample size is 303. The 28% of respondents who said they obtained their ticket through a friend were assigned friend's method. Weighted by sample weights.

Reason	Percentage
Could get better seats from reseller	50.6 %
Ticketmaster had sold out	14.1 %
Was unsure of ability to attend	11.7 %
Tickets were cheaper than Ticketmaster	8.2 %
Other	15.4 %

Table 4: Reported reason for secondary market purchase, nationwide survey

Note: Answer to the question "If purchased from a secondary seller (e.g. StubHub, eBay, Scalper …), why?" Sample size is 183. Weighted by sample weights.

Table 4 reports the reasons for buying a ticket on the secondary market cited by concertgoers who bought from a reseller. Only 11.7% report being unsure of their ability to attend, providing little direct support for Courty's (2003) model, where the high-value "executive" fans wait until the last minute to buy their seats. The main reason is by far that the respondent could get better seats from the reseller, cited by 51% of the respondents. This is consistent with the findings illustrated in Figure 3, that the resale rate is higher for higher-priced seats. Only 3.3% of the lower-tier tickets are resold, compared with 12.3% of the top-tier seats. Second, but with only 14% of the responses, comes "Ticketmaster had sold out," leading us to believe that even when a

show is not sold out, some fans might want to turn to the secondary market to find good seats.[8] Figure 4 shows that the resale rate increases with the capacity utilization, sold-out or nearly sold-out shows having a higher resale rate. This finding is inconsistent with Cheung's (1977) model which predicts that sold-out shows should feature less underpricing—hence less resale

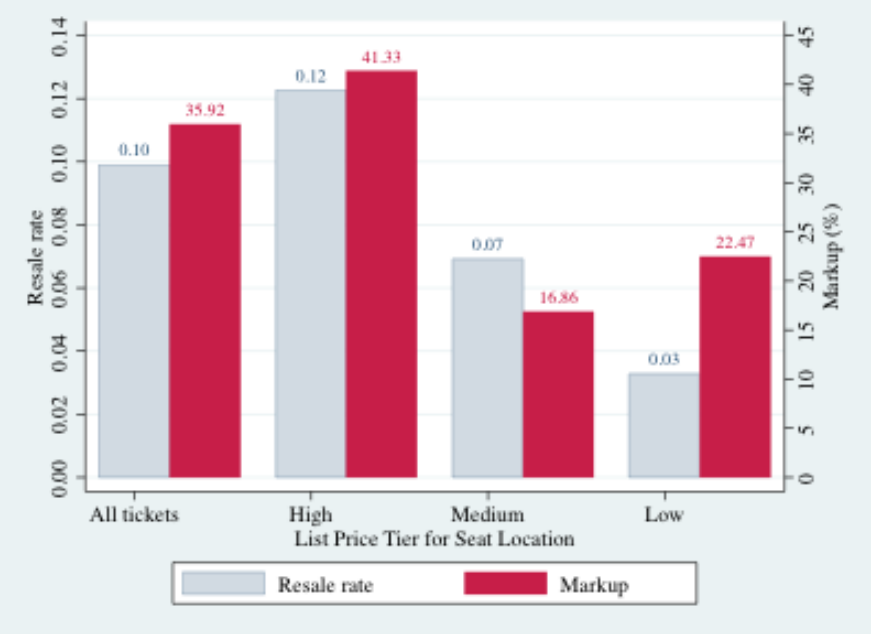

Figure 3: Resale rate and mark-up by list price tier, nationwide survey

Note: Mark-up is computed as the ratio of the price paid for a ticket in the secondary market relative to its list price, minus one, times 100. Weighted by sample weights.

[8] We acknowledge that these answers may not be mutually exclusive. For example, someone may have answered that they could get better seats from reseller, but this could be linked to their uncertainty about their ability to attend: deciding at the last minute may have lead them to only getting good seats through a reseller. Thus, the empirical support to theoretical models should be taken with a grain of salt.

Figure 3 also shows the average mark-up by list price tier. Not only are the best seats more resold, but their premiums over list price are twice that of medium- or low-quality seats. Note that most concerts feature only a limited number of primary-market prices. In our sample, 5 concerts (out of 28) have a unique price, 3 have two list prices, 11 (or 39%) have three, 7 have four and 2 have five distinct prices. A lot of these concerts are in amphitheatres where there is a lawn section, accounting for one of the price levels. We define the first price tier as being tickets in the most expensive category. The second price tier corresponds to tickets in the second most expensive category, and the third tier to the rest of the tickets. While not corresponding exactly to seat quality, we use price tier as a proxy for seat quality, but we acknowledge that quality varies not only between tiers but also within tiers. Note also that our findings are robust to the exclusion of concerts where there is only one price category.

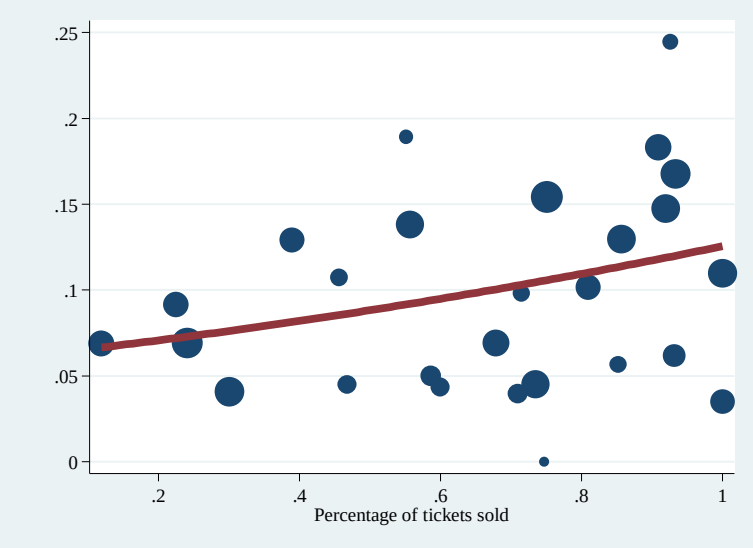

Figure 4: Resale rate and percentage of tickets sold, nationwide survey

Note: Each circle represents one concert and size of circle is proportional to the number of survey respondents. Dark line represents a quadratic fit.

Figure 5 shows the distribution of the primary market prices (by looking at the list price of each ticket) vs. that of the secondary market prices. The secondary market shows more dispersion and a much longer right tail, even when the top 1% of the secondary-market prices are trimmed.

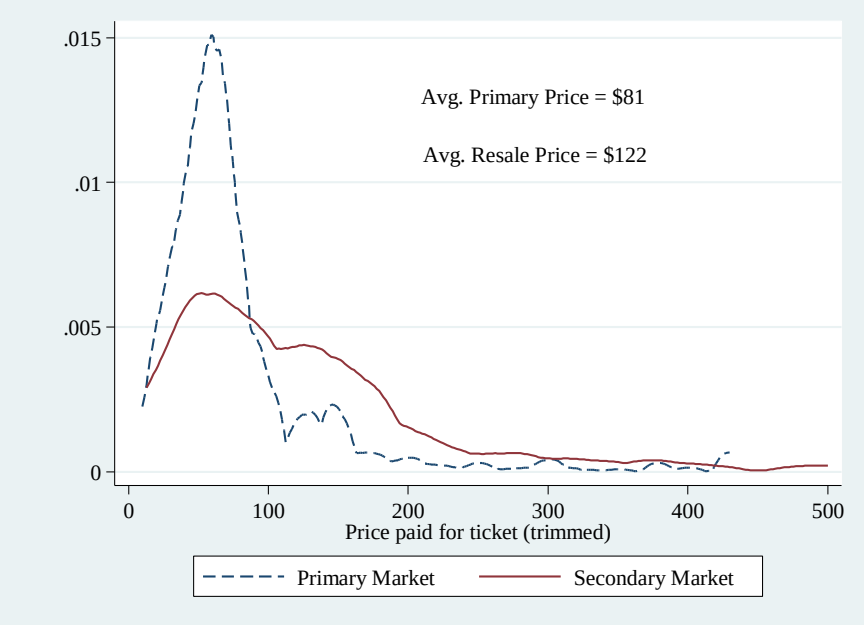

Figure 5: Ticket price dispersion in primary and secondary Markets, nationwide survey

Note: Top and bottom 1% of prices trimmed. Weighted by sample weights. Kernel density computed using Epanechnikov kernel.

Figures 6a and 6b show the empirical cumulative distribution functions of the prices paid on the primary market and secondary market, first for the best seats (price tier 1, Figure 6a) and then for the other seats (price tiers 2 and 3 combined, Figure 6b). Both figures echo the densities of Figure 5: the prices on the primary market are less dispersed than those on the secondary market.

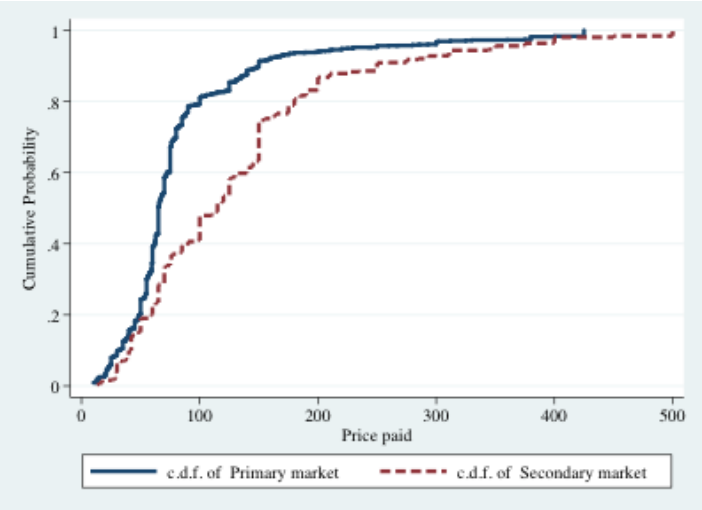

Figure 6a: Cumulative distribution functions of prices paid on primary and secondary market for price tier 1 tickets, nationwide survey

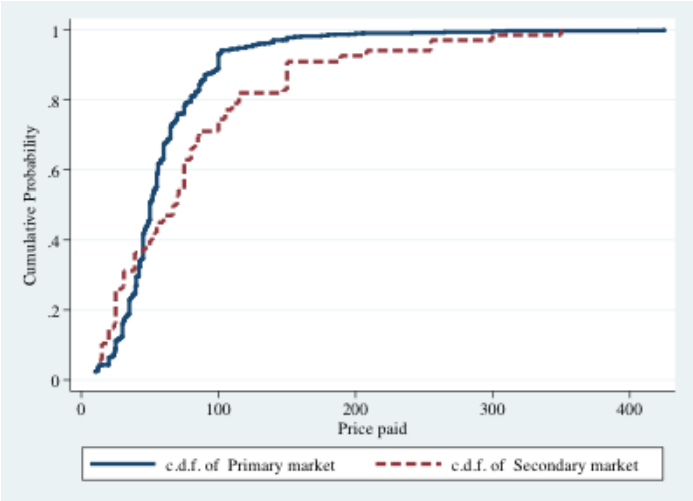

Figure 6b: Cumulative distribution functions of prices paid on primary and secondary market for price tiers 2 and 3 tickets, nationwide survey

Note: Top and bottom 1% of prices trimmed. Weighted by sample weights.

The new element that is apparent from comparing 6a to 6b is that for the best seats, the whole distribution of the primary market is to the left of that of the secondary market, showing resale prices are, on the whole, above list prices for the higher-priced tickets. For the lower-priced tickets (Figure 6b), the two cumulative distribution functions cross at around 35% of cumulative probability. This tells us that for low-quality seats around a third of the distribution of secondary-market ticket prices falls below the primary-market price distribution.

Figures 7a and 7b investigate the timing of ticket purchases by price tier, first for primary-market sales (Figure 7a) and then for secondary-market sales (Figure 7b). On the primary market, the sales patterns for price tier 1 and price tiers 2 and 3 are similar: a clear majority (44 to 53%) of tickets are bought more than two months before the concert, most likely at the initial on sale and the days following it. Sales subsequently go down, to reach about 10% in the final weeks leading up to the concert. On the secondary market, sales are much flatter over time and exhibit slightly different patterns by price tier. Over a quarter of the resale for the best seats happens more than two months before the show, whereas less than 18% of the lower-priced seats resale does. Resale hits a low point two to four weeks before the concert, but sales then pick up in the last couple of weeks for all seat qualities. A quarter of all resale for lower-priced tickets occurs on the day of the concert, as does just above 20% of the resale for price tier 1 tickets.

Figures 8a and 8b show how the secondary-market mark-up and the resale rate evolve as the concert date approaches (this time for all price tiers combined). We find that the secondary-market mark-up decreases as the date approaches, becoming negative the day of the concert, and that the resale rate increases. The first finding does not lend direct support to Courty's model, in which the last-minute high-value fans would drive up the price of the tickets and is consistent with the declining-price anomaly found in auctions (McAfee & Vincent 1993). These figures highlight the dynamic nature of the market for concert tickets and the perishable quality of a ticket: once the show is over a ticket loses all value. As they get closer to the show, resellers still in the possession of tickets

will be willing to lower their price to unload them before the show starts, thus clearing the market at an ever-lower price. This downward pressure on prices as the show approaches could counter the increase in mark-up predicted by Courty's model, even as the busy professionals drive up the resale rate. A deeper analysis would be needed to definitively evaluate Courty's model.

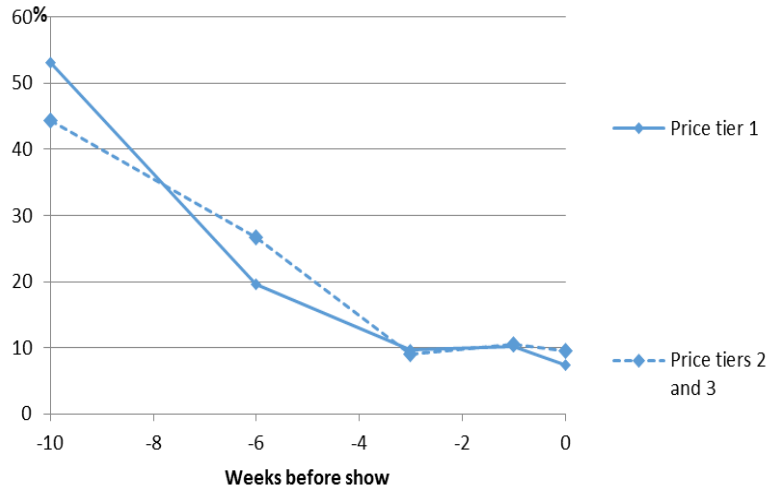

Figure 7a: Distribution of when primary-market tickets were bought by list price tier, nationwide survey

Note: Sample size is 2,017. Weighted by sample weights.

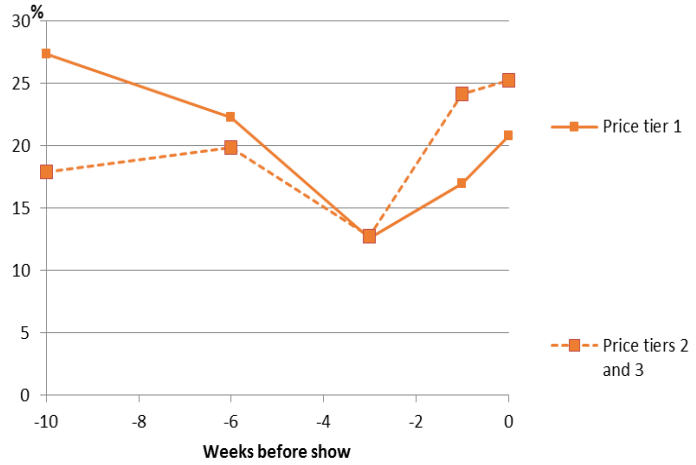

Figure 7b: Distribution of when secondary-market tickets were bought by list price tier, nationwide survey

Note: Sample size is 235. Weighted by sample weights.

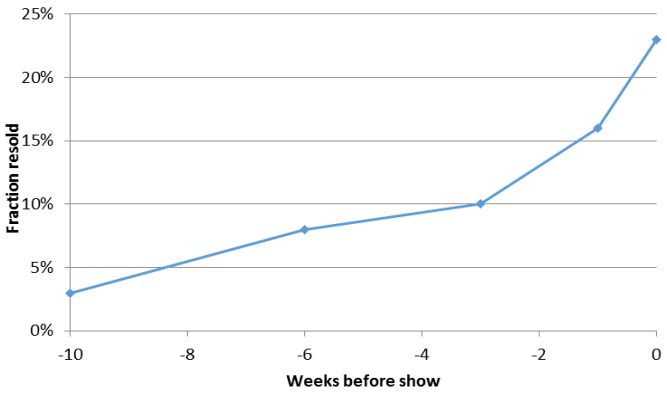

Figure 8a: Fraction of tickets resold by when ticket was bought, nationwide survey

Note: Sample size is 2,885. Weighted by sample weights. Fraction resold is computed by taking all tickets sold a given number of weeks before show and asking what fraction of those tickets was resold.

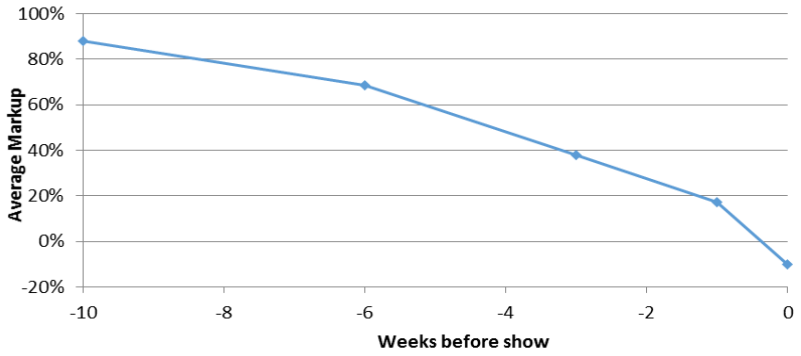

Figure 8b: Secondary market mark-up by when ticket was bought, nationwide survey

Note: Mark-up is computed as the ratio of the price paid for a ticket in the secondary market relative to its list price, minus one, times 100. Sample size is 266. Weighted by sample weights.

In Table 5 we investigate the price differentials between different reselling outlets for tickets bought on the secondary market. To do so, we estimated regressions of the natural logarithm of the price paid on the secondary market for a ticket on source dummies (excluding tickets given as gifts or comped which have a price paid of zero). The different columns in table 5 report the coefficients for the baseline regression and those incorporating controls like the number of weeks in advance of the show that the ticket was bought and show and price level dummies. The biggest secondary-market source, eBay, is the omitted category. We find that scalpers charge a significantly lower price than eBay, ranging from a 19% to 61% discount. It is interesting that this scalper discount still holds when controlling for when the ticket was bought, given that scalping activity is concentrated on the day of the concert. Also, at a discount (compared to eBay) are tickets bought on Craigslist, though the point estimates are not statistically significant due to the small sample size. Results for tickets bought from a ticket broker over the phone or in person are not conclusive, and those for tickets bought on the websites Razorgator and TicketsNow show a positive premium ranging from 9% (but not significant) to a statistically significant 36%.

Explanatory variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Number of weeks before show that ticket was bought[1]	—	0.033	0.025	0.030	0.021
		(0.013)	(0.013)	(0.012)	(0.012)
Source of Ticket					
Scalper	-0.605	-0.529	-0.192	-0.572	-0.344
	(0.158)	(0.159)	(0.160)	(0.144)	(0.144)
Craigslist	-0.243	-0.216	-0.210	-0.251	-0.126
	(0.260)	(0.257)	(0.257)	(0.232)	(0.226)
eBay	*Base group*	*Base group*	*Base group*	*Base group*	*Base group*
Ticket broker (Phone/Person)	-0.210	-0.223	0.178	-0.135	0.142
	(0.165)	(0.163)	(0.167)	(0.151)	(0.152)
Razorgator and TicketsNow	0.333	0.216	0.497	0.087	0.361
	(0.183)	(0.186)	(0.185)	(0.170)	(0.167)
Ticket broker (Online)	0.248	0.161	0.602	0.065	0.416
	(0.157)	(0.158)	(0.165)	(0.146)	(0.153)
StubHub	0.465	0.413	0.649	0.258	0.524
	(0.172)	(0.171)	(0.171)	(0.157)	(0.155)
List price level[2]					
Level 1	—	—	—	*Base group*	*Base group*
Level 2	—	—	—	-0.585	-0.585
				(0.106)	(0.110)
Level 3	—	—	—	-1.249	-1.443
				(0.264)	(0.277)
Level 4	—	—	—	-0.031	0.129
				(0.303)	(0.299)
Level 5	—	—	—	-0.831	-1.340
				(0.500)	(0.681)
F-test of the joint significance of the source of ticket dummies (p-value)	9.25 (0.00)	5.79 (0.00)	6.11 (0.00)	5.24 (0.00)	5.95 (0.00)
27 show dummies included	No	No	Yes	No	Yes
R-squared	0.23	0.25	0.49	0.41	0.62

Table 5: Price differentials for tickets bought on the secondary market, nationwide survey; dependent variable: Natural logarithm of price paid for ticket

Note: Only those tickets that were bought on the secondary market and for which source is known are used in this regression. Weighted by sample weights. Standard errors in parentheses. Sample size is 197.

[1] This variable is constructed from the answer to the question "When did you purchase your ticket?"

[2] *Level 1* corresponds to tickets sold at the highest list price, *Level 2* the second-highest, and so on.

The one source consistently more expensive than eBay, even when controlling for list price level and thus seat quality to some extent, is StubHub, with premiums fetching up to 50–65% above eBay prices. Tickets on StubHub are sold via fixed price (though resellers using the platform can change their posted price) while eBay functions mostly via auctions, so our results could indicate a higher level of competition among resellers on eBay, which would induce lower prices. It could also be that StubHub prices act as an upper bound on auction-determined eBay prices: a consumer buying on StubHub has the certainty of obtaining the ticket for the (albeit higher) posted price, akin to using eBay's "Buy It Now" option. Put differently, nobody would buy a ticket in an auction at a price higher than the fixed price posted on StubHub (or other fixed-price listings). We did ask people who bought their tickets online whether it was through a fixed price or an auction. Of the concertgoers who bought on eBay, 78% did so through an auction. However, the inclusion of an auction dummy in our regressions does not change the estimated coefficients and does not itself have a statistically significant coefficient.

Table 6 presents various findings related to different survey questions. First, we asked respondents how much they were planning to spend on parking, souvenirs, and at the concession stands. We find that people who bought their ticket on the secondary market are also bigger spenders on souvenirs and concession stands. Given that they also paid more on average for their ticket, this could imply that the people who buy on the secondary market are wealthier and have more income to spend. It would be hard to argue however that they are also bigger fans: we asked concertgoers how many songs by the lead performer they owned, how much they liked the band on a scale of 1 to 5, and the average number of concerts attended in the past 12 months. None of these answers are statistically different between those who bought on the secondary market vs. those who did not.

	Source of Ticket		
	Primary Market	**Secondary Market**	**Statistical Difference[1] (p-value)**
Average amount spent on category of spending			
Parking	$4.21	$4.51	0.51
Souvenirs	$18.26	$24.73	0.00
Concessions	$27.69	$34.02	0.00
Total ancillary spending[2]	$49.84	$60.70	0.00
Average number of songs by performer owned[3]	24	22	0.19
Average answer to "How much do you like the lead band?"[4]	4.37	4.30	0.25
Average number of concerts attended in the past 12 months	4.7	5.3	0.35

Table 6: Answers to various questions, by whether ticket was bought on secondary market, nationwide survey

Note: Weighted by sample weights. Sample size varies by question asked (between 2,692 and 3,202).
[1] The number reported is the p-value of the statistical difference between the primary and secondary market.
[2] Average total spending is computed for individuals with non-missing information on all three spending categories and may not equal the sum of categorical averages.
[3] Answer to the question "How many songs of the lead band have you purchased? (on CD, or for your iPod or MP3 player)"
[4] The answer to that question was on a scale from 1 to 5, where 1 means "not at all," and 5 means "very much."

5.3 Endowment effect

To study the endowment effect, we asked each respondent of the nationwide survey one of two questions: *"Would you have bought your ticket if it would have cost you $300?"* or *"If someone offered you $300 for your ticket, would you have sold it?"* The questionnaire versions were randomly distributed across all respondents. Without an endowment effect, we would expect to see the proportion of respondents say-

ing "Yes" to the buying question to be equal to that of respondents saying "No" to the selling question: if one is willing to buy for a given amount of money *x*, it implies that his valuation of the good is more than *x*. But if one is not willing to sell for *x*, it also implies that his valuation of the good is more than *x*. Thus, the two questions should be flip sides of one another.

Endowment Effect	***Bruce Springsteen* (October 2002)**			***U2* (November 2005)**			**Nationwide Survey (2006)**		
Would you have bought your ticket if it would have cost you $800?	**Yes** 9 %	**No** 91 %	**N** 382	**Yes** 6 %	**No** 94 %	**N** 220			
If someone offered you $800 for your ticket would you have sold it?	**Yes** 50 %	**No** 50 %	**N** 448	**Yes** 32 %	**No** 68 %	**N** 169			
Would you have bought your ticket if it would have cost you $300?				**Yes** 22 %	**No** 78 %	**N** 232	**Yes** 11 %	**No** 89 %	**N** 1,579
If someone offered you $300 for your ticket would you have sold it?				**Yes** 32 %	**No** 68 %	**N** 254	**Yes** 47 %	**No** 53 %	**N** 1,588

Table 7: Endowment Effect, *Bruce Springsteen*, *U2*, and Nationwide Sample of Concerts

Note: At the *Bruce Springsteen* concert and during the nationwide survey, two different versions of the surveys were distributed, each with one of the questions. At the *U2* concert, four versions were used: two per question but with two different amounts. Weighted by sample weights.

However, the buying question suggests that the good is not in the possession of the respondent, while the selling question insinuates that the respondent already has the good. In the presence of an endowment effect, the two questions do not elicit the same valuations anymore: once in a possession of a good (so when asked about selling the ticket) individuals tend to value a good more, even when the value is trivial or the good not particularly useful, such as a souvenir mug (Kahneman *et al.*, 1990).

Our findings are reported in table 7 and are supportive of the presence of an endowment effect. 89% said they would not be willing to pay $300 for their ticket, indicating that their valuation of the ticket must be under $300, yet only 47% said they would have sold their ticket for $300. The same effect can be seen from concertgoers at the *Bruce Springsteen* and the *U2* concerts, to whom we asked similar questions but varying the reference amounts. As we argued in our model description, this endowment effect limits the supply to secondary market, thus driving prices further up.

6. Conclusion

The pricing of concert tickets and other entertainment events provides a challenge to standard economic models. We conducted surveys of fans at several concerts to learn more about the market for tickets. Rather than summarize our results, we conclude by interpreting our results in the context of two economic models.

The first model is standard: when consumers bear more risk for a product, in equilibrium they pay a lower price. This model seems to accord well with our findings on the price premium associated with the source of resold tickets. Tickets that are purchased from eBay or scalpers, which are likely regarded by fans to be the riskiest sources, are less expensive than tickets that are purchased from StubHub, Razorgator or TicketsNow, which provide some protection or recompense for fans who bought fraudulent tickets. Likewise, the tendency for prices to decline as the date of the concert approaches is also consistent with a risk pre-

mium, as the risk of not obtaining a ticket rises as the date of the show approaches. From the point of view of the reseller, the risk of not selling a ticket also increases the closer the time of the concert, thus the pressure to drop prices as time goes by.

Our second model concerns why tickets are systematically priced below their market-clearing level in the primary market. In particular, we find that list prices for the best seats in the venue are more likely to be resold and for a higher premium than the worst seats. Moreover, the secondary market is larger, and the resale premium higher, for superstar performers, who charge the highest prices and who tend to sell out in the primary market. These facts are hard to reconcile with previous models of the secondary market. For example, Cheung's (1977) ingenious model cannot explain why underpricing of the best seats and the resale rate would be higher for concerts that regularly sell out. The model we propose deviates from previous models in one main respect: there is a cost to performers if they are seen as gouging their fans. In the simplest view, fans' perceptions of the performers' dedication to fairness depend on the most visible indicator of the performers' (perceived or real) concern for equity: the price of the tickets. In this situation, demand depends on perceived fairness, and performers (and their agents) would choose to distribute the tickets at below their market price. Another implication of this model is that performers would bemoan the existence of the secondary market charging a higher price. Of course, they could eliminate the secondary market by marking to market, but they prefer not to that because they want to maintain their image of charging a fair price.

Another observation is that the Coase theorem implies that the primary market prices should be irrelevant for who attends concerts and the price that they pay because tickets should be redistributed to those who value them most highly. If tickets do accrue to those who are willing to pay the most for them, then performers cannot influence the price paid by those sitting in the audience. However, evidence that we present concerning the endowment effect suggests that fans who obtain

tickets in the primary market are very likely to hold on to them, even if they would not pay the secondary market price for those tickets.

Many of our findings relate to seat quality: best seats are most resold and for the highest mark-ups. Leslie & Sorensen (2014: 296) abound in the same direction: *"[m]uch of the observed resale activity in our data appears to be driven by unpriced seat quality."* Our simple model of primary- and secondary-market pricing introduced a fairness constraint but stayed away from quality considerations. We believe a more complete model—and an interesting avenue for future research—would feature seat quality as well as capacity constraints, and in particular capacity for good seats: there will always be only one first row. Our model featured one type of heterogeneity: consumers varied according to their willingness to pay and their gouging aversion. Additional heterogeneity could be introduced at the artist level: some performers may be more sensitive than others to their fans' demand for fairness. Particular attention should also be paid to the allocation mechanisms in the primary and secondary markets: if there is excess demand, who gets the tickets? This could also allow for the endogeneity of presence of the resellers and their effort, as in Leslie & Sorensen (2014).

Finally, three developments in ticketing have the potentially to severely cut into the secondary market. Firstly, although the underpricing of good seats is systematic, it appears to be gradually eroding. Krueger (2005) documents that the price of tickets has been rising faster than the overall inflation, especially since the mid-1990s, and especially for the most expensive tickets, and Pollstar Box Office data suggest that this trend has continued. Krueger argues that technological change that has weakened the complementarity between concert attendance and record sales accounts for the rapid rise in concert tickets. As the concert industry moves from a provider of social events to a commodity market, we expect that the social constraint faced by the artists and promoters will lose its power, enabling them to extract more of the high-value consumer surplus by raising the price of the good seats. Note that this could also be done while simultaneously lowering the price of the rest of the

seats, possibly leading to an increase in profits simply by fine-tuning the level of price discrimination by seat quality in the venue.

Secondly, a handful of artists, including Bruce Springsteen, have experimented with "Verified Fan" to distribute tickets. Under this procedure, prospective customers register and apply for tickets. Ticketmaster then evaluates the applicants to ensure that they are not scalpers; for example, by ensuring that they have not applied for an inordinate number of tickets. A lottery or other procedure (loyalty points) is used to allocate tickets to the verified fans. Recipients can resell their tickets, but only to another verified fan. In essence, this procedure ensures that fans receive the surplus from underpriced tickets, essentially by turning fans into scalpers.

A third development is "Garth Mode", so named after Garth Brooks, who has pioneered the approach. In his last tour, Brooks set a below-market price of around $70 for every ticket. Faced with excess demand, together with Ticketmaster and Live Nation, he continually added more shows in each city until the market was saturated at his fixed price. Although the market cleared without scalpers being able to take advantage of arbitrage opportunities because Brooks increased supply to satisfy demand, this placed a heavy burden on Brooks. He often performed two or even three shows in a day. In economic terms, Brooks was off his supply curve and did not maximize utility or income, which is a reason why other superstars may be reluctant to follow Garth Mode.

7 Appendices

Appendix A: Model Resolution

This appendix contains details on the resolution of various parts of the model.

A1. Market demand

For ease of exposition, write the α parameter as being a draw from the random variable *X* uniformly distributed between 0 and 1 and denote primary market price *p* for now.

The market demand is $Q^M(p) = 1 - F^{\alpha}(p) = \int_0^1 dx 1_{\{x>p\}}(x)$, where $1_{\{x>p\}}(x)$ is a function on $\{(x)\in[0,1]\}$ equal to 1 if $x > p$, and 0 elsewhere. $Q^M(p) = 1 - F^{\alpha}(p) = \int_p^1 dx = 1 - p$. Inverse demand is $p^M(Q) = 1 - Q$. Marginal revenue is $MR(Q) = p(Q) + p'(Q)Q = (1 - Q) - Q = 1 - 2Q$.

A2. Primary market: band demand

For ease of exposition, write the α parameter as being a draw from the random variable *X* as above and the γ parameter as being a draw from the random variable *Y*, both uniformly distributed between 0 and 1 and independent of each other.

Market demand for the band is $Q^B(p) = 1 - F^{\alpha/(1+\gamma)}(p) = 1 - F^{\alpha/(1+\gamma)}(p) = \int_0^1\int_0^1 dxdy 1_{\{x/(1+y)>p\}}(x,y)$, where $1_{\{x/(1+y)>p\}}(x,y)$ is a function on $\{(x,y)\in[0,1]\times[0,1]\}$ equal to 1 if $x / (1 + y) > p$, and 0 elsewhere. The cdf $F^{\alpha/(1+\gamma)}$ will depend on the value of *p*, and will have two sections, one when *p* is under ½ and one when *p* is above ½.

For $p \leq 1/2$, the region where $1_{\{x/(1+y)>p\}}(x,y)$ is 1 is when $p(1+y) \leq x \leq 1$ and $0 \leq y \leq 1$.

For $p \geq 1/2$, the region where $1_{\{x/(1+y)>p\}}(x,y)$ is 1 is when $p(1+y) \leq x \leq 1$ and $0 \leq y \leq \frac{1}{p} - 1$.

Thus for $p \leq ½$, $Q^B(p)$ = $1 - F^{\alpha/(1+\gamma)}(p) = \int_0^1 \int_{p(1+y)}^1 dxdy = \int_0^1 (1 - p - py)\,dy = 1 - \frac{3}{2}p$.

For $p \geq ½$, $Q^B(p)$ = $1 - F^{\alpha/(1+\gamma)}(p) = \int_0^{\frac{1}{p}-1} \int_{p(1+y)}^1 dxdy = \int_0^{\frac{1}{p}-1} (1 - p - py)\,dy = \frac{1}{2}\left(\frac{1}{p} + p\right) - 1$.

Inverse demand when $Q \geq ¼$ ($p \leq ½$) is $pB(Q) = 2/3\,(1 - Q)$.

When $Q \leq ¼$ ($p \geq ½$), $pB(Q) = 1 + Q - \sqrt{(1+Q)^2 - 1}$.

Marginal revenue is $MR(Q) = p(Q) + p'(Q)Q$. When $Q \geq ¼$ ($p \leq ½$), $MR(Q) = 2/3\,(1 - Q) - 2/3\,Q = 2/3\,(1 - 2Q)$.

When $Q \leq ¼$ ($p \geq ½$), $MR(Q)$ = $1 + Q - \sqrt{(1+Q)^2 - 1} + \left(1 - \frac{1+Q}{\sqrt{(1+Q)^2 - 1}}\right)Q$.

A3. Secondary market

A3.1. Who sells? (supply to secondary market)

Solution:

When $p^p < ½$ and $p^p + p^s < 1$, the quantity sold (i.e. the proportion of the people willing to sell their ticket) is equal to Prob($(1 + \gamma_i)\ p^p < \alpha_i < p^s + \gamma_i\ p^p$) = Prob(selling) = $\left(p^s - p^p\right)$.

When $p^p < ½$ and $p^p + p^s > 1$ but $p^s < 1$, Prob(selling) = $\left(p^s - p^p\right) - \frac{1}{2p^p}\left(p^p + p^s - 1\right)^2$.

When $p^p < ½$ and $p^p + p^s > 1$ and also $p^s > 1$, Prob(selling) = $1 - \frac{3}{2}p^p$, that is every one with a ticket would like to sell it.

When $p^p > ½$, as long as $p^s < 1$, Prob(selling) = $\frac{1}{2}\left(\frac{1}{p^p} + p^p\right) - 1 - \frac{1}{2p^p}\left(1 - p^s\right)^2$.

When $p^p > ½$ and $p^s > 1$, Prob(selling) = $\frac{1}{2}\left(\frac{1}{p^p} + p^p\right) - 1$, that is every one with a ticket would want to sell it.

A3.2. Who buys? (demand on secondary market)

Solution:

When $p^p < ½$, the quantity people are willing to buy on the secondary market will be 0 if $p^s > 2\ p^p$, and if $p^s < 2\ p^p$, it will be Prob($p^s < \alpha_i < (1 + \gamma_i)\ p^p$) = Prob(buying) = $2p^p - 2p^s + \frac{\left(p^s\right)^2}{2p^p}$.

When $p^p > ½$, as long as $p^s < 1$, Prob(buying) = $\left(2 - \frac{1}{p^p}\right)\left(1 - p^s\right) + \frac{1}{2p^p}\left(1 - p^s\right)^2$.

When $p^p > ½$ and $p^s > 1$, Prob(buying) = 0 since nobody values a ticket at more than 1.

A3.3. Secondary market equilibrium

Solution:
When $p^p < ½$, the condition $p^p + p^s < 1$ will be respected for p^p up to $11/25$, and p^s will be $p^p (3 - \sqrt{3})$.
When $p^p > 11/25$, we switch to the $p^p + p^s > 1$ case and $p^s = \frac{1}{2} + p^p - \frac{1}{2}\sqrt{-10\left(p^p\right)^2 + 8p^p - 1}$.

When $p^p > ½$, as long as $p^s < 1$, we find that $p^s = \frac{1}{2} + p^p - \frac{1}{2}\sqrt{6\left(p^p\right)^2 - 8p^p + 3}$.

Appendix B: Weights for the national survey

Within each concert, the probability of being interviewed is 1/ N_c , where N_c is the number of fans in attendance. The weights are the inverse of the sample size time probability of being interviewed:

$$w_c = \frac{1}{n_c * 1/N_c} = \frac{N_c}{n_c},$$

where w_c is the weight associated with each respondent within concert c, N_c is the attendance at concert c, and n_c is the sample size collected at concert c.

The weight for a given concert within a certain week is the inverse of the capacity for the venue over the total number of seats for the whole week (the sum of all capacities for the shows that week):

$$w_{cwk} = \frac{1}{N'_c / \sum_{c \in wk} N'_c} = \frac{\sum_{c \in wk} N'_c}{N'_c},$$

where w_{cwk} is the weight associated with concert c in week wk, and N'_c is the capacity of the venue for concert c.

The final weight w is the product of these two weights, w_c and w_{cwk}:

$$w = w_c * w_{cwk} = \frac{N_c}{n_c} * \frac{\sum_{c \in wk} N'_c}{N'_c}.$$

Appendix C: Questionnaire for the national survey (Version A)

1. **How did YOU obtain your ticket for tonight's concert?** *(Check one)*
   ☐ Ticketmaster ☐ LiveNation.com ☐ Box Office ☐ Scalper ☐ Friend ☐ WEB/Internet
   ☐ Ticket Broker (Online) ☐ Ticket Broker (Phone or in person) ☐ Other (*Specify:* _____)

1a. **If from a FRIEND, how did the friend obtain the ticket?** *(Check one)*
   ☐ Ticketmaster ☐ LiveNation.com ☐ Box Office ☐ Scalper ☐ Friend ☐ WEB/Internet
   ☐ Ticket Broker (Online) ☐ Ticket Broker (Phone or in person) ☐ Other (*Specify:* _____)

2. **If purchased over the Internet, was it** ☐ Auction ☐ Fixed price

2a. **If purchased over the internet, was it**
   ☐ Ticketmaster ☐ LiveNation.com ☐ Razorgator ☐ Ticketsnow ☐ Ticket Broker
   ☐ Stubhub ☐ eBay ☐ CraigsList ☐ Other (*Specify:* _____)

3. **How much did YOU (or someone else) pay for your ticket?** *(Including all fees)* $ _____

4. **If purchased from a secondary seller (e.g. Stubhub, eBay, Scalper…), why?** *(Check all that apply)*
   ☐ Ticketmaster had sold out ☐ Could get better seats from reseller
   ☐ Tickets were cheaper than Ticketmaster ☐ Was unsure of ability to attend
   ☐ Other (*Specify:* _____)

5. **Did you sell any tickets to tonight's show?** ☐ No ☐ Yes, at face value or less ☐ Yes, above face value

6. **If someone offered you $300 for your ticket would you have sold it?** ☐ Yes ☐ No

7. **When did you purchase your ticket?**
   ☐ On the first day of sale ☐ More than 2 months ago ☐ 1 to 2 months ago ☐ 2 to 4 weeks ago
   ☐ Last week ☐ Today ☐ Other (*Specify:* _____)

8. **How much do you like the lead band?** *(Circle one)* 1 (Not at all) 2 3 4 5 (Very much)

9. **About how many songs of the lead band have you purchased?** *(on CD, or for your iPod or MP3 player)*
   ☐ None ☐ 1 – 12 ☐ 13-24 ☐ 25-50 ☐ 51-100 ☐ Over 100

10. **How much do you think you will spend at the concession stand today?** $ _____

11. **How much do you think you will spend on souvenirs?** $ _____

12. **How long did it take you to get to this event?** *(From departure place to venue entrance)*
   ☐ Less than 15 minutes ☐ 15 – 30 minutes ☐ 31 – 60 minutes ☐ 1 – 2 hours ☐ More than 2 hours

13. **How much did you spend on parking for today's show?** $ _____

14. **What is the location of your seat/ticket?** Section:_____ Row:_____ Seat #:_____

15. **How many concerts have you attended in the past 12 months?** _____

16. **What is your age?** _____

17. **Are you?** ☐ Male ☐ Female

18. **What is your occupation?**
   ☐ Professional ☐ Service ☐ Blue Collar ☐ Unemployed ☐ Home Maker ☐ Student ☐ Retired

Appendix D: Questionnaire for the superstar survey (U2 concert)

Princeton University Concert Survey — Version A1

1. How did you obtain your ticket for tonight's concert (check one)?	☐ Ticketmaster ☐ Box Office ☐ Scalper	☐ Friend ☐ WEB/Internet ☐ Ticket Broker (online)	☐ Ticket Broker (phone or in person) ☐ Other: _____
1a. If from a friend, how did the friend obtain the ticket (check one)?	☐ Ticketmaster ☐ Box Office ☐ Scalper	☐ Friend ☐ WEB/Internet ☐ Ticket Broker (online)	☐ Ticket Broker (phone or in person) ☐ Other: _____
2. If purchased over the internet, was it	☐ an auction	☐ fixed price	
2a. If purchased over the internet, was it	☐ Ticketsnow ☐ Stubhub	☐ Razorgator ☐ eBay	☐ Ticket broker ☐ Other_____
3. How much did YOU pay for your ticket (including all fees)?	$		
4. What is the location of your seat/ticket?	Section _____	Row _____	Seat # _____
5. If someone offered you $800 for your ticket would you have sold it?	☐ Yes	☐ No	
6. When did you purchase your ticket?	☐ Today ☐ Last week	☐ 2 to 4 weeks ago ☐ More than one month ago	
7. What is your age?	_____ years old		
8. Are you?	☐ Male	☐ Female	
9. What is your occupation?	_____		

Information about this survey:

This survey is being conducted by an economist at Princeton University in Princeton NJ. The purpose of the survey is to learn more about the re-sale market for concert tickets and the economics of ticket pricing.

The survey is voluntary. You do not have to participate. If there are any questions you do not wish to answer, you may skip over them.

The information you give us is strictly confidential and will not be used for any purpose other than research on ticket pricing.

If you have any questions about your rights as a participant in this study, please contact the Princeton University Institutional Review Board at (609) 258-3105 or by email at asylvest@princeton.edu

Note: the questionnaire for the Bruce Springsteen and the E Street Band concert was the same, except for the choices for answers to questions 1 and 1a, which grouped together the two ticket broker categories into one.

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The development of the artist-fan engagement model

Sarita M. Stewart[9]

Abstract
The Artist-Fan Engagement Model was developed in 2012 to help explain the relationship between music artists and their fans. The model, based on hedonic consumption and parasocial interaction theory, explores how the effects of music and artist drive fan engagement through access or ownership of recorded music. This paper highlights the development of the original model, along with the initial study results. The model is now being updated in order to complete a second round of the study.

Keywords: Artist, fan, engagement, recorded music, marketing

1 Introduction

The Artist-Fan Engagement Model (e.g., figure 1) proposes a theoretical framework that was developed in 2012 to help explain the relationship between music artists and their fans. The model, created using hedonic consumption and parasocial interaction theory (PSI) as its foundational underpinnings, was designed to explore how the effects of music and artist drive fan engagement through access or ownership of recorded music. In an industry where the music consumer has unprecedented access and prefers ongoing interaction with their favorite artists (Borden 2009), it is important to identify how these relationships can be best leveraged. Many musicians communicate directly with their fans through the use of various internet platforms such as Facebook, Instagram, Pinterest, Snapchat, Twitter, and Tumblr, among others. United States media personality Conan O'Brien has referred to this overall phenomenon as a "symbiotic relationship." As he notes, *"It's not just driving people on social media networks to your television show… you want to*

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get people on the TV getting emotionally involved in what you're doing on Facebook or Twitter" (Ingraham 2012). In an era in which digital and social media interaction helps to develop a music artist's brand, it is essential to consider how the mediated engagement between an artist and his or her fan base can provide economic value, whether through recorded music access or ownership.

This paper explains the development of the various facets of the Artist-Fan Engagement Model. An abbreviated examination of several questions explored in the initial study, along with the accompanying results, are also discussed. The paper concludes with a discussion of how to strategically apply the results from the initial research in building a synergistic marketing plan around a music artist.

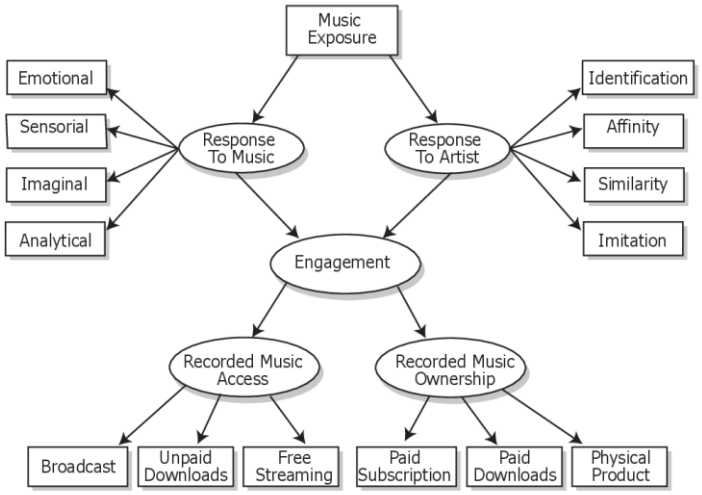

Figure 1: Original conceptualization of the Artist-Fan Engagement Model.

2 Theoretical development of the Artist-Fan Engagement Model

2.1 "Response To Music" variable

Hedonic consumption theory is the theoretical underpinning of "Response To Music" framework within the Artist-Fan Engagement Model. This theory focuses upon subjectively oriented experiential products that generate emotion and arousal. Hirschman & Holbrook (1982: 92) defined hedonic consumption as *"facets of consumer behaviour that relate to the multi-sensory, fantasy and emotive experience with products".*

Lacher (1989) first began to explore music as a hedonic consumption product in the late 1980s. She suggested a paradigm for studying music as a product, based on diverse research in music education and psychology. Her 1994 study with fellow researcher Richard Mizerski used hedonic consumption to predict the purchase of recorded rock music. The "Response To Music" construct used in the study included the "Emotional," "Sensorial," "Imaginal," and "Analytical" responses to music (Lacher & Mizerski, 1994). These four facets were instrumental in developing the "Response To Music" variable for the Artist-Fan Engagement Model as shown in Figure 1.

Emotional response. Music is recognized as *"the language of the emotions"* (Farnsworth 1969: 78), and is capable of arousing strong and significant emotions within individuals (Sloboda 1991). Hesmondhalgh (2011: 107) considered music, more than any other cultural form, to be linked *"with the emotional dimensions of our selves"*. The initial Artist-Fan Engagement study focused upon how an individual's emotional response to music (i.e., induction) represents the feelings they experience when listening to music, whether joy, rage, sadness, love, etc. (Gatewood 1927; Yingling 1962; Hargreaves 1982; Lacher & Mizerski, 1994). Emotional response has also been recognized as one of the primary factors in music appreciation, as well as a potential factor in the purchasing process (Lacher & Mizerski 1994; Ouellet 2007).

Sensorial response. The sensorial response is simply the *"raw sensory material"* of music (Ortmann 1927; Yingling 1962: 109). Hodges (2009) categorized bodily responses to music as being either physiologically or physically based. He noted *"when we listen to music our bodies naturally respond with largely involuntary gestures, such as head nodding and foot tapping"* (Hodges 2009: 26). Ortmann (1927: 43) considered the sensorial music response to be primitive and *"essentially physiological".*

Imaginal response. The third facet of the "Response To Music" is imaginal*,* which researchers have defined as involving *"images, memories or situations that music evokes"* (Myers & Valentine 1914; Lacher & Mizerski 1994; Ouellet 2007: 109). Myers & Valentine (1914) referred to this response as *"the associative aspect, which means a given sound tends to suggest various ideas, either with or without accompanying concrete or visual imagery."* Ortmann (1927: 66) considered this individual response psychological, *"based upon the presence of an auditory subjective stimulus"*, and labelled it "imaginal". Yingling's (1962: 109) definition of the imaginative response (which he later referred to as an "associative" factor) was the *"translation of tonal stimulus into objective terms – pictures, story, impersonation or the like; suggestion"*. Baumgartner's research (1992) focused on how music can trigger an individual's autobiographical episodes. He cited Dowling & Harwood's (1986) work in order to distinguish between music's iconic representation (i.e., the patterns within the music itself) and indexical representation (i.e., the pairing of a musical event with an extra-musical object). Basically, an indexical transfer occurs when the emotion associated with the extra-musical situation becomes associated with the actual musical event.

Analytical response. Various research studies suggest that differing music elements (i.e., mode, tempo, pitch, rhythm, harmony, volume) are capable of producing both main and interactive effects on the affective, behavioural, and cognitive responses of consumers (Bruner 1990). Active participation in the music process, whether by a composer, listener, or performer, engages mental-processing capabilities (Hantz 1984). Hargreaves & Colman (1981) found three of the five music categorical responses generated in their study (e.g., categorical, objective-analytic,

objective-global) tied directly to the cognitive aspects of music response. Lacher & Mizerski (1994) used Hargreaves' (1982) research to delineate three separate areas of music cognition as a component of music's analytic response for their empirical study.

2.2 "Response To Artist" variable

Parasocial interaction theory (PSI) was synthesized into the framework of the "Response To Artist" variable as part of the Artist-Fan Engagement Model (e.g., figure 1). PSI is defined as *"a false friendship between an audience individual and a media character"* (Sood & Rogers 2000: 387). Shen & Zhou's (2011) expanded construct of PSI was used to construct the framework of the original Artist-Fan Engagement Model which includes four facets, "Identification," "Liking," "Similarity," and "Imitation". These researchers had found high positive associations between PSI and identification (r=.74), affinity/liking (r = .74), similarity (r = .51), and imitation (r = .51) during the course of their study. A more thorough examination of these four factors follows below.

Identification. Cohen (2001: 245) conceptualized identification as *"a mechanism through which audience members experience reception and interpretation of the text from the inside, as if the events were happening to them."* It should be noted that there is some confusion surrounding the constructs of identification and PSI due to how previous studies have operationalized PSI, defining it *"as a kind of long-term identification or parasocial relationship with a media performer"* (Hartmann & Goldhoorn 2011: 1104). Shen & Zhou (2011: 59) delineated these factors a bit more cleanly, noting that identification *"entails media users' temporary merging with the media figures; parasocial interaction involves media users' response without losing their identities"*.

Affinity. Affinity occurs when an individual displays *"a liking for a media figure, without identifying with, or forming a parasocial relationship"* (Giles 2002: 290). Cohen & Pearce (2003: 22) noted in their study of viewer-character relationships that *"parasocial interaction, the sense of 'friendship' with a character, is most strongly linked to liking the character."* Interestingly, affinity towards a media character is likely to in-

crease fandom (Cohen 2001), as the audience is expected to reward successful performers with loyalty from their fan base. This includes, among other measures, not only buying the products that the media figure recommends, but keeping his sponsor informed of *"the esteem in which he is held"* (Horton & Wohl 1956: 219). According to Davisson & Booth (2007: 35): (a) the fan may want to participate in commerce based around the show and (b) *"the activities and commercialism based around the show can cause the fan to become attached to the character."* It should be noted that the artist-fan relationship can be affected, whether positively or negatively, by a performance event that the fan sees by a music artist in a live setting, but this is outside the scope of the original model.

Similarity. Perceived similarity (i.e., homophily) is considered *"a basic principle"* that leads to interpersonal attraction between two people (Turner 1993: 444). Within the context of the viewer-character relationship, this refers *"to the degree to which an individual perceives that he or she is similar to a character"* (Moyer-Gusé 2008: 410). These perceptions generate a judgment of the viewer's commonalities with a given character. Similar demographic characteristics include age, ethnicity, gender, and social status. Other perceived similarities surrounding a viewer's impression of a character may include shared behavioural tendencies, experiences, life situations, or personality attributes (Hoffner & Cantor 1991). Similarity is often considered a predictor of parasocial interaction (Shen & Zhou 2011).

Imitation. Hoffman & Buchanan (2005) defined a viewer's identification with a character to occur when an individual loses their identity by (a) assuming the role of a selected character within the program or text and (b) then vicariously participating in the character's experiences. This type of long-term attachment is referred to as wishful identification, or *"the desire to be like or behave in ways similar to the character"* (Hoffner 1996: 390). Imitation is considered both external and behavioural as well as key to the relationship viewers form with media characters (Cohen 2001; Cohen & Perse 2003). Emulation is another term that is often used to describe wishful identification, whether in a general (i.e.,

as a role model) or specific (i.e., imitating behaviours) context (Giles 2002). Research has shown that actions of popular culture heroes have strong effects on adolescents in terms of their clothing, food preference, hairstyles, music, verbal expressions, as well as their basic social values (Englis, Solomon & Olofsson 1993).

2.3 Engagement

The influence of both the "Response To Artist" and "Response To Music" variables was assessed upon "Engagement" in the initial study of the Artist-Fan Engagement Model. Scott & Craig-Lees (2010: 53) referenced audience engagement as a *"multi-dimensional, holistic measure that describes a person's emotional and cognitive engagement with entertainment content."* The term "Engagement" was used to describe this variable, since it seemed to best reflect the relationship between the audience members and the selected content within the media environment. Audiences now have greater control over the media content that they choose to consume, given the transformative changes within the technology sector (Scott & Craig-Lees 2010). This was especially important given all of different methods that individuals use to search information and consume content around music artists. Examples to this end would include various engagement platforms, including the social utility site Facebook, the microblogging platform Twitter, the visual storytelling platform Instagram, Internet search engines, wikis, YouTube videos, artist fan clubs, and artist-specific music apps. Also, promotional and publicity vehicles, such as music blogs, music videos, artist-domain websites potentially allow for an individual to engage with the music artist as well.

2.4 Consumption Outcome Variables – Access and Ownership

Six general categories of music consumption outcome variables were proposed within the original Artist-Fan Engagement Model that reflected the music market realities during the 2012-2013 time-period. These outcome variables included: broadcast, unpaid downloads, free streaming, subscription models, paid downloads, and physical products. IFPI,

the non-profit worldwide trade association for the recorded music industry, referenced two main music consumption outcomes, access and ownership (IFPI 2012: 7). As Jones (2000: 221) states, *"the commercial processes of the music industry require it to create audiences and markets, a process itself one of distribution."*

2.4.1 Access

Access is a term used within the industry to describe the outcomes from the various publicity and promotional avenues that help drive marketing exposure around artists and music through various media platforms. Traditionally, music has been consumed through some type of media platform prior to purchase (Lacher 1989). Simply listening to music is considered "free", although the artist is generally compensated for their work through public performance and other music revenue streams, depending upon the consumption medium that the listener utilizes. "Free" music consumption can eventually lead to the purchase of recorded music product or other artist-related artefacts (e.g., concert tickets, artist merchandise, branded consumer products). The defining factor concerning music product access for the purposes of the initial study was that no direct monetary exchange took place between the end consumer and the artist. The access variables utilized in the study were broken down by broadcast models, unpaid downloads and free audio streaming as highlighted in table 1.

Access variables	**Mediums/platforms**
Broadcast	Radio Television YouTube
Unpaid downloads	Unpaid downloads Piracy (illegal downloads)
Free audio streaming	Interactive streaming (Spotify, Napster) Non-interactive streaming (Pandora, iHeartRadio)

Table 1: Music consumption access variables

Discussion of these access variables is included in order to provide historical context around each of these outcomes.

Broadcast models: Terrestrial radio (e.g., local radio airplay) has traditionally been the main source for "breaking" new artists. The record labels provide recorded music product that radio uses for entertainment programming, while the record label uses radio for exposure to the station's audience in a "symbiotic relationship" (Macy, Rolston, Allen & Hutchison 2016). Record labels have traditionally employed significant staff to properly manage this promotion function. It is very expensive to promote songs in the popular mass audience radio formats (e.g., Adult Contemporary, Pop Contemporary Hit Radio, Country). At the time of the initial study, AM/FM radio was a powerful presence in the lives of Americans, reaching over 92 percent of individuals over the age of 12, with an estimated weekly overall listening audience of 243 million (Arbitron 2013; Edison Research 2013). Nielsen Audio (2018) has reported that the radio listening trends to be similar percentagewise in 2018, with an overall listenership reach of 270 million Americans weekly.

Television has also been a very important medium in allowing music artists to reach a mass audience since its inception over 50 years ago. There were two types of television programming primarily available at the time of the initial study: (a) network programming, based on an ad-supported "free" model; and (b) cable television, which generates revenue from paid subscription income (Hull, Hutchinson & Strasser 2011). Many music artists promote their upcoming music releases and tours through network press appearances and performances on top network television shows. A 2012 white paper co-authored by *Billboard* magazine and the then NARM U.S. music association reported that television shows and TV music channels were found to be the second strongest influence in music discovery for 49 percent of consumers (Peoples 2012). It should be noted that the television medium has changed substantially since the time of the initial study, with digital streaming platforms such as YouTube, Netflix, Hulu, Amazon, and other cord-cutting services coming into mainstream use (Bond 2018).

YouTube was also included in the initial study as a "Broadcast" variable. At the time of the initial study, YouTube billed itself as *"a forum for people to connect, inform, and inspire others across the globe and acts as a distribution platform for original content creators and advertisers"* (YouTube, 2013). Many individuals in the younger demographics regularly engage with YouTube in order to view content, with this phenomenon being cited as a new form of broadcasting (Murray 2015).

Unpaid music downloads: The second set of recorded music access consumption outcomes focused on unpaid music downloads. These downloads are often considered to occur as digital piracy through illegal music downloads. The RIAA (2018) defines piracy as *"downloading authorized versions of copyrighted music from a file-sharing service to illegally copying music using streaming ripping mobile apps."* Ouellet (2007: 109) considered *"illegal downloads and the legal purchase of music allow the consumer to achieve the same purpose, which is to listen to a piece of music when he or she so wishes."*

Alternately, some artists choose to provide free music downloads and streaming tracks to their fan base as a way of publicizing their new single or album release, in an attempt to drive "word of mouth" marketing. NoiseTrade is a digital platform that allows recording artists and recording labels to distribute music for free while receiving in exchange the fan's email addresses and postal codes (NoiseTrade 2018). This uncompensated exchange provides music artists with direct data on the fans who download their music product. One resulting benefit is that artists can route their touring schedules more effectively using their audience's zip code information.

Free streaming: At the time of the initial study took place, the music industry was just beginning to experience tremendous growth through innovative online streaming music and access models (Friedlander, 2011). Music streaming allows users to be able to listen to a digital track or album via internet or mobile platforms. Streaming services, including Spotify and the revitalized Napster, employ an interactive "freemium" business model in which a first level "free" consumer access tier is sup-

ported by advertising revenue. These 'lean-forward' music services which allow listeners to control their own experiences.

Spotify was founded in Sweden in 2006 and launched its online streaming services in 2008. Spotify debuted as a publicly traded company on the New York Stock Exchange in April 2018, valued at $29.5 billion at the end of its first day of trading (Sisario & Phillips 2018). In contrast, Napster first began operations as an unlicensed music service in 1999, shaking up the music industry, prior to being closed due to numerous lawsuits in 2001. The company's assets have been sold to numerous organizations over the years, prior to being acquired by the streaming service Rhapsody in 2011 (Harris 2018). Corporate parent Rhapsody International now operates using licensed music content under the brand name of Napster.

There are also non-interactive streaming options available through online radio services such as Pandora and iHeartRadio. These 'lean back' services allow the actual platform to guide the listener's experience. Pandora was primarily a non-interactive online music streaming service since its webcast beginnings as an offshoot of the Music Genome Project in 2000. This service now includes 'on demand' features for its 70 million active monthly users. The audio entertainment company SiriusXM is set to purchase a 16 percent stack in Pandora during the first quarter of 2019 for $480 million (Wouk 2018). The iHeartMedia organization is now recognized as the largest media company in the U.S. with 858 radio stations, and online broadcasting via iHeartRadio, among numerous other media assets. The company reaches over a quarter of a billion listeners in the U.S. market (iHeartMedia 2018).

Depending the way that the consumer engages with the interactive or non-interactive streaming services, these free access streaming websites trigger different revenue payment streams to the copyright holder depending on the streaming interaction. In 2017, digital revenue sources (which includes streaming sources) accounted for 54 percent of the global recorded music product (IFPI 2018).

2.4.2 Ownership

Traditionally, recorded music product purchase has generally resulted when individuals wanted to be able to better control their listening experience around their music selection choice (Lacher 1989; Lacher & Mizerski 1994; Ouellet 2007). As Lacher (1989: 372) noted, *"it is important to understand and predict the elements of a hedonic product that will impel the consumer to purchase the product"*. The IFPI (2011: 8) reported that *"ownership still has value when artists build sufficient audience appeal."*

Recorded music ownership was defined in the initial study as when a consumer directly purchased recorded music content or paid an annual subscription fee to be able to stream their music without commercial interruption. Table 2 lists the three music ownership variables defined in the initial study. A discussion of the various services and products below is included in order to provide context around each of the ownership variables.

Ownership variables	**Mediums/platforms**
Paid subscription (psychological)	Spotify Apple Music Napster
Paid downloads	iTunes Amazon MP3
Physical product	Compact discs Vinyl records Cassettes tapes

Table 2: Music consumption ownership variables

Subscription models: One of the business goals of the free streaming access tier is to migrate the listening consumer from "free" access to a "paid-for" subscription model status. Subscription models offer users premium tiered services and connectivity for a monthly fee or annual rate. These services offer consumers listening opportunities with all external advertising removed from the content as well as higher audio quality. Spotify and Pandora, as well as other interactive and non-

interactive companies (including the recent interactive streaming services market entrant Apple Music) offer their consumers various benefits and variety across numerous subscription options.

It should be noted that the consumer who pays for the right to access the various subscription services doesn't technically own the content in the same way as they would a music download or physical product. However, given the fact that many streaming consumers have invested considerable time in discovering new music and building playlists, as well as the right to download music through a paid streaming subscription, the individual may feel as if they have psychological ownership of the music product (Luck 2016). David Porter, CEO and Founder of 8tracks website, an online radio station, commented that *"I think ownership is access, you don't have to have music on your local hard drive to own it"* (Imam 2012). Interestingly, recent scholars note that consumer trends are shifting towards a "post-ownership economy" (Sinclair & Tinson 2017: 1).

Music downloads: Legal digital music download options did not begin to gain widespread consumer acceptance until Apple opened its iTunes full-service online store in 2003. The purchase of licensed digital music tracks and albums can be made through iTunes and other digital music retailers such as Amazon MP3. Single downloads have traditionally accounted for the majority of the digital revenue stream. At the time of the initial study, the Apple iTunes store was the dominant retailer of music downloads, accounting for 75 percent of sales in the global digital space with over 600 million users worldwide (Heneghan 2013). In a 2011 report, The NPD Group estimated that *"51 million U.S. consumers use iTunes and about 38.3 million purchase music with it"* (Peoples & Bylin 2011: 22). The music download market has declined precipitously in recent years, with a 20.5 percent decline in global revenue in 2017 alone (IFPI 2018: 6). Recent reports have suggested Apple Music is planning to shuttle the iTunes store in the first quarter of 2019. However, various press outlets have reported this information to be untrue (Dassanayake 2018).

Physical product: Physical music product (e.g., compact discs, vinyls, cassette tapes) represented 41 percent of all shipments within the U.S. music marketplace at the time of the initial study in 2013 (RIAA 2013). Physical sales of recorded music product have continued to decline globally, with a 5.4 percent drop in revenue in 2017. Interesting however, physical product still accounted for 30 percent of the $17.3 billion global music market. Overall shelf space for music product has declined and the number of retailers diminished due to store closings worldwide, although the markets of Japan and Germany are still reportedly robust (IFPI 2018). With physical sales declining, many traditional music sellers are diversifying their mix of music products by focusing on related categories. Numerous record labels are directing their efforts in this area towards the *"'superfan, a dedicated follower of a band or genre who is more likely to buy a physical copy of an album"* (Plambeck 2010).

One uptick in the physical marketplace is that the sales of vinyl product is on the rise. Vinyl sales made up 3.7 percent of the global market with an overall revenue growth of 3.7 percent in 2017 (IFPI 2018). Cassette sales have made a bit of a limited comeback, most recently with the limited-edition release of superstar Jay-Z's *4:44* album. Although cassette sales have mainly disappeared from the music marketplace, these physical products are reappearing as a merchandise sale, mainly due to the fact that the product can be personalized. The sales margin on a $7 cassette is estimated to be the same as a $20 LP album, which is an incentive (Jay-Z).

In summary, the initial study explored the following questions around the Artist-Fan Engagement Model as follows:

- R1: How is the "Response To Artist" variable related to the PSI factors of "Identification," "Affinity," "Similarity," and "Imitation"?
- R2: How is the "Response To Music" variable related to "Emotional," "Sensorial," "Imaginal," and "Analytical" music responses?
- R3: Is "Engagement" related to the "Response To Artist" and "Response To Music" variables?

- R4: How does "Engagement" drive whether an individual chooses to access or own recorded music product?

3 Methodology

When the initial study was run in 2013, research participants completed a 75-question survey, which took approximately 15 to 20 minutes in a physical environment of their choosing. Qualtrics Online Survey Software was used to distribute the survey through an anonymous link. A total of 1,576 participants accessed the survey. These respondents were recruited using two separate email correspondence lists supplied by a middle-sized teaching university located in the Mid-South region of the United States. The first study invitation was sent out via the college's monthly email newsletter to its 975 entertainment industry partners. The second invitation was sent to approximately 2,000 undergraduate students and recent alumni. In addition, interested participants either informally forwarded the anonymous survey link to their friends and colleagues, and/or posted the link on various social media sites. The survey was also distributed using snowball sampling due to initial low participation rates.

Pretest. The survey instrument had been pretested using several sections of students in upper-level business undergraduate courses at a large Southeastern university, located several hours away from where the initial study participants were recruited. One hundred and twenty-eight students completed the pilot study for extra credit, for an 84 percent participation rate. The pilot study respondents were approximately the same age as the college undergraduate group recruited for the initial study. Following the pilot survey's deactivation, the survey responses were reviewed to determine if the participants understood the questions correctly. Only two slight revisions were made, mainly to clarify categorizations listed in the music consumption section.

Survey. The survey used validated measures from previous studies in order to measure the variables within the Artist-Fan Engagement Model. The survey's question order was arranged so that the respond-

ent identified a song of their choice. The respondent then answered questions regarding their listening preferences to their song selection as part of the "Response To Music" variable. Next, participants listed the name of the artist who performed the song they originally identified. This forced an evaluation of an artist whom the respondent may or may not have had a preference toward as part of the "Response To Artist" variable. The survey design was laid out in this manner, as there was a concern that question order could become a confounding issue. Undue bias could have been created if the survey's questions had been ordered so that the participant first listed the name of an artist whose music they preferred, prior to listing the name of a song by that same artist. Other survey sections focused on other areas of interest, including "Engagement," "Purchase Intent," and "Consumption type/Purchase habits." The survey concluded with questions related to respondent demographics.

Analysis. The Analysis of Moment Structures (AMOS) software, Version 21, was used to analyse the survey data. After reviewing the initial survey responses, six hundred thirty-six incomplete surveys were listwise deleted from the final sample. These entries were deleted since it was important to have both a valid artist and song title tied to the actual survey response for analysis purposes. Most of these deleted entries fell into one of three categories: a) no inputted information, resulting in a blank survey; b) the song title was either listed as unknown, or just left blank; and c) no corresponding artist was listed in conjunction with the song. As a result, a total of 940 surveys were available for analysis, 836 of which were fully completed. The other 104 surveys contained incomplete survey answers and/or demographic responses, although the included responses could be tied both to an individual artist and song title. The end analysis found that 940 survey respondents had listed 806 individual song titles recorded by 568 music artists.

4 Research outcomes

Figure 2 highlights the correlations found among the variables incorporated across the Artist-Fan Engagement Model. Support was found for all of research questions, with all of the p values associated with the

sample data significant at .05, with the exception of "Unpaid Downloads." One unexpected relationship surfaced as a result of executing the data, specifically, the moderately strong association between the "Response To Music" and "Response To Artist" variables, with (r = .42). This finding was generated when the original conceptualization of the Artist-Fan Engagement Model was revised in order to run the necessary statistical tests. While this finding was unexpected in terms of the study, anecdotally there has always seemed to be a connection between the artist, their music, and the audience. The relationship between these two variables has seemingly been a key feature in many music marketing campaigns over the years, especially when introducing new recorded music to fans of established musical acts.

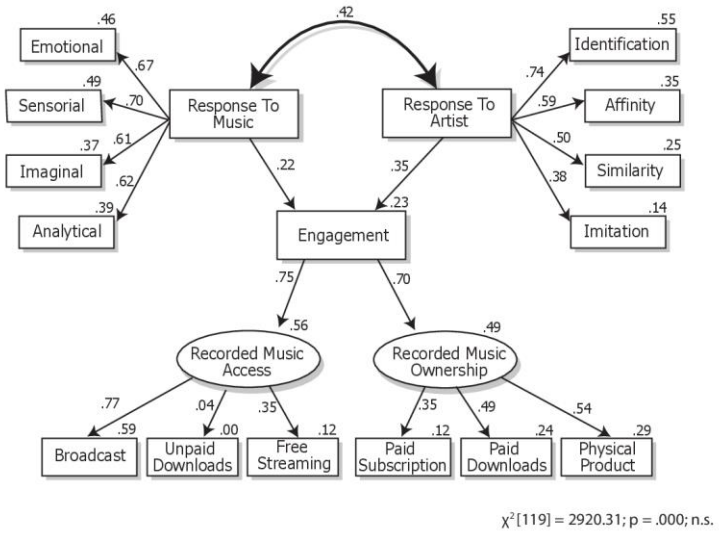

Figure 2: Revised artist-fan engagement model

Within the sample data, the research outcomes indicated strong correlations among the "Response To Artist" and its various facets in answer to the first research question: "Identification" (r = .74); "Affinity" (r = .59); "Similarity" (r = .50); and "Imitation" (r = .38).

These findings were consistent with previous studies (Shen 2009; Shen & Zhou 2011). In response to the second research question, all of the listening responses had strong associations to the "Response To Music" construct: "Emotional" (r = .67); "Sensorial" (r = .70); "Imaginal" (r = .61); and "Analytical" (r = .62).

Support was found for Research Question 3 as well. Both "Response To Artist" (r = .35) and "Response To Music" (r = .22) were determined to influence audience engagement. In both cases, there were moderately positive relationships between these constructs and "Engagement," although "Response To Artist" was stronger than "Response To Music." This finding was not unexpected since the "Response To Artist" variable contains the component of human interaction between the various parties (i.e., artist and fan).

In response to research question 4, "Engagement" highlighted strong positive correlations that surprisingly influenced both the "Recorded Music Access" (r = .75) and "Recorded Music Ownership" (r = .70) variables. The strong relationship between "Engagement" and "Recorded Music Access" was not unexpected, given the market shift of music consumption preferences toward streaming, especially with freemium streaming in widespread use. The strong relationship between "Recorded Music Ownership" and "Engagement" was unexpected, due to the fact that revenues from physical products and music downloads have substantially declined over the past few years.

5 Conclusion

The Artist-Fan Engagement Model is a complex model, with numerous "moving parts." Still, it is important to understand how the various theoretical elements of the model can be strategically applied within a music artist's overall marketing plan for recorded music product. As Tom Silverman, founder of both the Tommy Boy record label and the New Music Seminar, famously stated several years ago, "nobody knows where the music business is going, but I know one thing: it's going to be about fan-artist relationships and how you monetize that" (Halperin, 2011). And indeed, many artists are aware of *"the fundamental im-*

portance of the direct engagement with their audiences, of the resources that are required to build this relationship, and of the role of new technologies in enabling and developing it" (Bernardo & Martins 2014: 12). Many successful music artists have already found enormous success (whether knowingly or unknowingly) building upon the various facets of the "Response To Artist" and "Response To Music" variables within the relationship to their fan base.

The first question which the initial study sought to answer was how the "Response To Artist" variable related to the PSI factors of "Identification," "Affinity," "Similarity," and "Imitation." Given the strong relationships among its various facets: "Identification" (r = .74); "Affinity" (r = .59); "Similarity" (r = .50); and "Imitation" (r = .38), the marketing focus should be upon creating promotional and sales content to help draw potential fans toward engagement with the music artist. Narrative content (e.g., video interviews) that contains both the affective and cognitive elements necessary to support the music artist relationship with their audience would be helpful. Music publicist Ariel Hyatt has suggested one of the keys to success involving the relationship between music artists and their fan base is that *"consumers want more personal interactions and artists should engage fans before trying to sell to them"* (Cusic 2012). This parasocial relationship between the artist and their fan base can be utilized whether the recorded music is front-line, mid-line, or catalogue product. Pop artist Taylor Swift has been heralded across the media as a recording artist who enjoys this type of relationship with her fans. A writer for the *L.A. Times* wrote the following about Taylor and her fans:

"she has brilliantly created a level of conversation with her followers that most other entertainers can only dream of … Swift has made it abundantly clear that she is paying equal attention to what her fans are doing: their wants, needs, joys, fears and dreams, and she incorporates that awareness into an ongoing dialogue with them" (Lewis 2015).

Next, research question 2 focused upon the listening responses around the "Response To Music" variable. Specifically, there were quan-

tified relationships between "Response To Music" and its various facets: "Emotional" (r = .67); "Sensorial" (r = .70); "Imaginal" (r = .61); and "Analytical" (r = .62). These results suggest that when the music artist and their recording team (i.e., music producers, engineers, songwriters) are working in the studio, the songs they create from an Artists and Repertoire (A&R) perspective should build upon these four listening responses in terms of music creation. Jimmy Harnen, President of Nashville's Big Machine Label Group, spoke to this point, "Great music does a lot of things. It makes your toe tap, your heart pound, and your mind think, and as long as it touches your soul in one way or another, it's real" (Waddell 2013: 24). And, as Luck (2016: 57) has pointed out, *"we do not just listen to music; we experience it on a range of levels."*

The third research question examined how "Engagement" was related to the "Response To Artist" and "Response To Music" variables. Again, the research results did find support for these relationships: "Response To Artist" (r = .35) and "Response To Music" (r = .22), albeit both moderately positive correlations. It was not necessarily surprising that the respondents felt more inclined toward engagement with the artist, rather than the music, once a human connection between the two parties was established. What the results seemed to indicate is that the music is important, but the artist's connection to their audience is even more important. The individual's response to the artist helps drive the mediated parasocial relationship between both parties.

In research question 4, it was interesting to consider how "Engagement" influenced whether an individual chose to access or own recorded music product. "Engagement" was found to have surprisingly strong positive correlations that influenced both "Recorded Music Access" (r = .75) and "Recorded Music Ownership" (r = .70). The strength of "Recorded Music Ownership" was a bit surprising, even though the initial study was conducted during the time-period when streaming music was in its infancy, and digital downloads dominating the U.S. market (IFPI, 2012). It is expected, when the study is rerun, that "Recorded Music Access" correlations will be stronger than that of "Recorded Music Ownership,"

especially given the market shift towards streaming services, especially with the younger audience demographics.

In reviewing the findings from the eight survey questions that focused upon the "Recorded Music Access" variable, "Broadcast" (r = .77) received the strongest level of empirical support. This was not unexpected since the "Broadcast" variable was created by combining several measures related to an individual's consumption of music via radio, television, and YouTube access. It is true that YouTube is not a traditional broadcast medium in the same sense as radio or television. However, studies of consumers aged 13-24 reported watching 12.1 hours per week on YouTube, social media, and other online sources as compared to traditional television at 8.2 hours weekly. 67 percent of the respondents agreed that YouTube was a "must-have video source" (Spangler, 2016). Other study findings were a bit surprising, with a non-significant relationship between "Recorded Music Access" and "Unpaid Downloads" (r = .04). It is speculated however, that, with a respondent sample of music business students and music business insiders, social desirability may have been an issue. If these individuals were involved in illegal downloading of pirated recorded music, they may have not wanted to reveal this information in a survey, especially if they are employed, or want to be employed, in the music industry. It may also be true that many individuals were using legal streaming services such as Spotify and Pandora to consume their music, rather than BitTorrent piracy sites.

The relationships among "Recorded Music Ownership" and the various paid streaming, paid downloads, and physical product variables, were also examined. The correlation between "Recorded Music Ownership" and "Paid Subscription" was exactly the same as "Free Streaming" (r = .12). These results were surprising, given the expectation was that both outcomes were expected to be stronger in relation to streaming services. However, this expectation was complicated by the fact that only two questions were devoted to understanding the respondent's streaming consumption use, whether through the freemium or paid subscription model.

The correlation between "Recorded Music Ownership" and "Paid Downloads" was also found to be relatively strong (r = .49), which made sense, given that the paid download business model had not yet begun to decline at the time the research study was undertaken. "Paid Downloads" had been expected to have the strongest relationship to "Recorded Music Ownership" given digital music's popularity and ease of use at the time of the initial study. Then again, research has shown that 81 percent of the music on an individual's personal iTunes accounts never gets played (Motal 2011).

The correlation between "Recorded Music Ownership" and "Physical Product" (r = .54) was found to be the strongest among the three ownership variables. This was surprising, given that physical sales have been in a serious decline for many years. A 2013 Nielsen study discussed how content was becoming even more integral to the music marketing process, commenting "artists and retailers and providers are getting together and making really great packages of content with extra songs, live tracks, booklets, behind-the-scenes (video), things that enable fans to become more engaged" (Gunderson 2013). Perhaps the reason some study respondents reported such a strong positive correlation toward product ownership is that they were superfans of the music artist whose song they listed in the survey. Thus, these respondents may be predisposed to buy the music by these artists because they want to have actual ownership of the given music product, whether compact disc, vinyl, or cassette.

The music market has changed rapidly over the past five years since the initial study with the growth of the streaming market. David Bakula, Nielsen's Senior Vice President of Music Industry Insights, commented that *"The rapid adoption of streaming platforms by consumers has generated engagement with music on a scale that we've never seen before"* (Aswad 2017). This marketplace shift is key, given that many individuals, especially the younger audience, deal squarely in streaming access than music product ownership (AudienceNet 2017).

In conclusion, the initial study centred around the Artist-Fan Engagement Model, based on the above discussion, provides four main "takeaway" points:

#1. The music often introduces the artist to the audience through various promotional platforms (e.g., Spotify Weekly Discover Playlist). Once the fan is "in the know" about the act and his or her recorded music, the research indicates the focus switches towards mediated engagement with the artist's persona.

#2. Streaming platforms help generate music engagement between the artist and their fan base. The audience, especially those in the younger demographics, engage with the artist through video or audio streamed content. Engagement in the streaming sector between music artists and their fans are helping to revive the music industry with the rise of music revenues for the third consecutive year internationally, with growth in the streaming arena of 8.1 percent overall in 2017 alone (IFPI 2018).

#3. Physical product ownership still seems to be important. While physical music consumption in 2017, physical product sales still accounted for 30 percent of the global music market. As noted previously, global sales of vinyl record sales grew by 22.3 percent overall during the same time-period, accounting for 3.7 percent of the international music market in 2017 (IPFI 2018: 13). These findings seemingly cement the idea that superfans will still buy physical artefacts connected with their favourite artists.

#4. All of the variables discussed within the Artist-Fan Engagement Model are important consideration factors within an artist's music marketing plan around a recorded music release. The initial findings suggest that the Artist-Fan Engagement Model can be used to help the artist and their management team best think through how to cohesively approach the music marketplace.

Contribution. It is hoped that the findings from this initial study will help inspire interested academics and music industry professionals to join together to better understand the nuances of artist engagement in relation to music consumption. The blending of PSI and hedonic music consumption theory has components that can be practically applied by music industry professionals for marketing and monetization purposes. Additionally, the research findings can be used to help provide a strategic foundational basis from which a music artist's team can start to build or revitalize an artist's career across numerous components.

Limitations. There were several study limitations. First, this convenience sample was focused upon the responses of U.S. music industry executives and undergraduate college students who have a strong interest in working in the music industry. Thus, these results cannot be generalized to the greater public from this highly targeted Caucasian sample population that preferred pop and rock music. Ways to circumvent this limitation in future studies will be to post the survey on sites such as the U.S. social media platform Reddit, which in addition to containing news information, allows for surveys to reach a large and diverse audience. Finally, the initial study was conducted in early 2013, and the global music industry has shifted substantially from music downloads to music streaming in terms of overall consumption.

Future research. The current plan is to continue to develop the different facets within the Artist-Fan Engagement Model. This includes further exploration of psychological ownership within the "Recorded Music Ownership" variable. Questions related to Apple Music will be added within the "Paid Subscription" section of the survey, now that the organization is competing squarely within the interactive music subscription space as of June 2015 with a catalogue of 50 million songs (Apple, 2018). It has been reported that the company is second only to Spotify in the streaming market, with 50 million subscribers to Spotify's 75 million users (Purcell 2018). Other areas to explore include framing "co-creation" and "presumption" within the "Engagement" variable. Co-creation is defined as the "joint creation of value by the company and the customer" (Prahalad & Ramaswamy 2004: 8) and prosumption, as

"the intertwining of consumer production and consumption" (Bajde, Kos Koklic & Bajde 2015). Other questions of exploration include the question of how does reframing of "Engagement" variable with these new attributes affect the dichotomy of access and ownership variables? Following the update of the Artist-Fan Engagement Model, the study will be re-run to determine if the overall results are similar to those found in 2013 sample. Besides conducting an online survey to a diverse and global audience base, hopes are to triangulate the data using a mixed method approach including the use of individual interviews and focus groups.

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Blockchain in the music business: preventing the threat of disruption

Wolfgang Senges[10]

Abstract
The evidence is that blockchain has the power to start a disruptive process. If blockchain has uses for the music industry a framework will need to be defined to prevent damage. A collaborative approach, agile methods, and transition management are identified and suggested as a toolset to successfully shape the impact of the disrupted processes. In particular, transition management is recommended as an approach via research. Blockchain concepts are matched to the music industry through examples.

Keywords: Blockchain, music industry, disruption, transition management, metadata

1 Introduction

Since 2015, the music industry has witnessed a growing 'hype' (Silver 2016: 9) within discussions about blockchain concepts[11]. There is hardly a field in the music business that is not considering blockchain or variations thereof as part of their current projects: Projects range from ticketing (Membran Entertainment (Healy 2017)) to streaming (Resonate[12]), from ID solutions for band names (Music Business Worldwide 2016a) to distribution (Imogen Heap (Perez 2016) and RAC (Oberhaus 2017)) and global licensing platforms (DotBlockchain Media[13]).

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[11] This article intentionally does not refer to blockchain "technology" because there is no one specific technology. Instead, it is the concept of combining several approved technologies such as cryptology, swarm intelligence, peer-to-peer networks, hashes and more to form a unique and new kind architecture (Schütte et al. 2017: 11).

[12] https://www.resonate.is

[13] http://dotblockchainmusic.com

The focus on specific solutions and their feasibility relies on proof of concept (PoC). What the discussions omit or at least circumvent is evaluation and integration management. A few projects, like Alan Graham's and Rupert Hine's OneClickLicense (OCL)[14], started out by evaluating blockchain but even so they discarded it later, due to performance issues as well as the general risks associated with blockchain.[15]

A non-biased investigation into blockchain is necessary due to its short history and, by way of comparison, a few approved applications, especially as experience of the practical use of blockchain and theoretical research in any industry has only been around for at most nine years. This is not just a problem about the music industry, nor indeed for blockchain. Increasingly shortened innovation cycles have led to broader scientific and academic interest in dealing with disruption. In the music sector, blockchain is the one example that stands out currently when investigating how to cope with the future changes caused by disruption.

The objective here is to identify one or more approaches to employ blockchain in the music industry and to sketch a path towards managing its evolution. It is an attempt to find a way to solving the paradox of bridging the disruption gap. It is assumed that any scheme to accomplish this should involve the entire industry, as it will be a concern for all stakeholders. To achieve this, collaborative methods and a new research approach, called transition research, represent the core hypothetical toolset under consideration.

However, one challenge for this paper is that neither, blockchain and transition management, have been explored as yet in detail; indeed, the scientific basis from extant articles is limited. Hence, interviews with music business, technology, and research experts serve as a source of additional evidence and these were conducted earlier in 2017 as part of another article (Senges 2017b: 49). In addition to previous work on blockchain architectures, analytical reports and more current magazine

[14] OCL (https://what.ocl.is) is sometimes also referred to as "Totem". Meanwhile, the service is established under the name of “Origen”.

[15] Source: Alan Graham, during personal talks and his keynote at Vienna Music Business Research Days in September 2017.

and newspaper articles, this paper builds on the work of the Blockchain Working Group Germany, formed in November 2016 (Senges 2017a).

The first chapter explains which other tasks are needed to prepare for blockchain and why; thus setting up the framework for the core questions. Chapter 3.1 discusses the disruptive power of blockchain and chapter 3.2 looks at previous (disruptive) changes that the music industry has not dealt with successfully. While chapter 3.3 summarises the learnings from the previous chapters' results, chapter 3.4 explores blockchain and its disruptive potential in the music industry. The subsequent chapter investigates if and how disruption might be managed and whether it is possible to define a specific set of requirements to succeed. The required tools, methods, and framework are identified in chapter 4.1 and 4.2 and these are investigated in chapter 4.3. To round-up chapter 5, the article takes a look at the opportunities and the impact of applying transition management and the above toolset, while integrating a disruptive concept.

2 Structuring the challenge

2.1 What is blockchain?

In its basic model, blockchain presents an approach to database solutions in which data is not spread across multiple tables but stored as a chain of blocks in one single ledger. It is a decentralised model, administering an identical copy of the ledger in each node of the decentralised peer-to-peer network.[16] Theoretically, each block can hold the data itself (here: audio), the metadata (e.g. information necessary for licensing), plus a smart contract (a set of rules to be applied to the data). Another feature is the fact that new data is written into the blockchain only after a validation process confirms its correctness. The network's nodes are involved in the process; hence, the reference to swarm intelligence.

[16] There are numerous variations, including hybrid architectures (partially decentralised, partially centralised), as well as those where not each but particular or most nodes hold a copy of the blockchain.

Finally, all the blocks are encrypted, and neither the data nor the concatenation of blocks can be manipulated or deleted. However, as mentioned above, there are risks to blockchain. Describing them all here would exceed this articles' topic.

2.2 The metadata chaos

Quoting Benji Roger's metaphor, the change from today's music business towards integrating the blockchain concept is like inventing new "rails" (Rogers 2016). It is not about changing objects, and it is not about replacing the stakeholders. It is comparable to inventing an internet protocol. The problem is that new rails will not alter or change the existing system failures. If the engines used in every rail-train have technical design faults, then simply replacing the rail tracks will not help. The one problem that has paralysed the music industry for decades is the "metadata chaos". Correct and complete metadata is the foundations and basis of licensing and generating revenues.

Current metadata models and workflows can be made to fit into new technologies and new technology concepts. Nevertheless, the current shortcomings of metadata models including errors within them will continue unless there are steps taken and effort is dedicated to clean them up. Essentially metadata define the value of content and as such they form the core of the music economy (Senges 2017b: 36–38). This means a remodelling of metadata structures and workflows is needed, although, due to their nature, this is a major challenge, but it is one requirement to enable blockchain's full scope of advantages.

2.3 Evaluation of the blockchain concept mapped on to music

Current blockchain projects in the music industry focus on a proof-of-concept approach for specific market sectors and solutions. These projects are still in the experimental and nascent stage and do not provide a solid basis for mapping the blockchain concept on the music industry's daily workflows and demands. Bettina Schasse de Araujo[17]: *"[…] a poten-*

[17] Innovation Strategies & Community Manager, Institute for Applied Informatics (InfAI)) e. V.

tial integration of blockchain can only be successful after a thorough analysis of integration with upstream and downstream processes." It is necessary to launch and establish a *"dialogue with relevant stakeholders … – an intensive multi-stakeholder dialogue"* (Senges 2017b: 39).[18]

A multi-stakeholder dialogue combines work on issues such as the metadata challenge with a mapping of the concept to the music industry. At first sight, the primary objective is the requirements specific for the music industry and the system implementation. However, this approach goes beyond these elements. As Matthias Hornschuh[19] states in his interview: *"… structural [and] systematic problems of [the music industry] as well as those of adjacent, respectively intersecting industry sectors (in particular media/broadcast/IT)"* that are in demand to be included to draft *"a comprehensive and sustainable requirements specification"* (Senges 2017b: 39).

The synergy in establishing a multi-stakeholder dialogue is more important than solving the challenge itself. It brings together parties that have been in conflict with each other for a decade or more (Senges 2017: 4). This multi-stakeholder dialogue is the technical and infrastructural basis for considering blockchain as an integral foundation for the music industry.

2.4 How to integrate blockchain?

Intrinsically linked to blockchain research is the challenge of how to introduce and integrate blockchain, or any other disruptive concept, into the music industry. With blockchain, there is the rare opportunity, of which stakeholders are acutely aware, for an idea that might develop a significant and disruptive impact; and, as the following chapter suggests, a disruptive power. However, it is neither possible to accurately predict the degree of influence, nor can we estimate the time available for preparation as the momentum is fast developing. More significantly, the hype around blockchain may see some stakeholders or innovators taking

[18] Quotation translated by the author.
[19] Matthias Hornschuh is a composer for film and television.

action too quickly or too soon, leading to deployments that are not rationally founded.

The primary objective of this paper is to identify the tools, guidance and research basis to allow for integration rather than a clash between blockchain supported initiatives and a music industry yet to embrace blockchain.

The integration of disruption means actively shaping change, aiming to distil the opportunities from a new technology, as well as identifying the associated threats and misconceptions, even if they might improve the ecosystem. This is sensitive because preventing damage does not equate to preserving the status quo so any framework for integration must balance existing workflows principles as well as the newly created ones. As such the relevant structure must be conceived first in a non-biased way.

3 Blockchain and the power of disruption

3.1 Evidence of disruption

The title of this paper implies that blockchain has by definition a disruptive power. Unfortunately, innovations that cause radical changes in a market are often called "disruptive" even when they are not, and it is difficult currently to describe blockchain as disruptive. Disruption is more complex as Christensen et al. (Christensen, Raynor & McDonald 2015) explain in arguing that products, services, or technologies should not be labelled as "disruptive" in themselves, rather it is the process they initiate through innovation that is disruptive.

When investigating whether blockchain is capable of initiating a disruptive process or not, it is important to firstly separate two facets. On the one hand, blockchain may represent an integral part of a product, e.g. Bitcoin but on the other hand, blockchain as an abstract concept may serve as an underlying infrastructure for many industries or products.

In conjunction with Bitcoin, blockchain helped challenge finance industries through an innovative way of combining security, transparency, and control within distributed peer-to-peer networks. This is an example of *low-end footholds* disruption (Christensen, Raynor & McDonald 2015) targeting a particular group of customers at the low end. Blockchain for Bitcoin launched into a new phase when financial industries explored the added values of the blockchain concept. Far from being mainstream and still hardly tested, the conceptual approach became separated from Bitcoin and went upmarket from the original innovators; more importantly, it spread to other industries within a few years.

Separated from Bitcoin, blockchain now appears to have launched into a *new-market footholds* disruption process. Start-ups like Ethereum[20], ConsenSys[21], JAAK[22], BigchainDB[23] and many others have established services as providers of concepts, infrastructure, development, and technology. Blockchain itself created a new market with incumbents including enterprise software providers like IBM looking to implement their own blockchain infrastructures.

While still in the evaluation phase for other industries, blockchain arrived in the music business which raised the immediate question of whether blockchain could initiate a disruptive process when applied to it. However, blockchain only entered the music sector in 2015 so it is still too soon to be certain of what it can do. Looking at previous evaluations for various industries (McWaters et al. 2015; Allianz 2016; Schütte et al. 2017) one can only agree it has the potential to start a disruptive process. How blockchain can eventually perform in the music industry will be dealt with in chapter 3.4. The challenge yet to be solved is how to cope with the accompanying changes that would arise if disruption is started.

[20] https://www.ethereum.org
[21] https://consensys.net
[22] http://jaak.io
[23] https://www.bigchaindb.com

3.2 Disruption in music: failed approaches in dealing with disruption

In the past the impact of disruptive technologies led to a predominance of fear, mainly caused by the pressure to respond if an organisation is not able, or not willing to act, or not capable of responding appropriately (Mulligan 2015: 19, 60) resulting in a fear of being overrun and outperformed. The negative consequences tend to overshadow any benefits and improvements the radical changes may lead (and have led) to, meaning potential opportunities can be perceived as threats. The negative impact of radical change for incumbent players appears to define disruption where the consequences of disruption equate to financial loss and a reduced status, mainly due to not having anticipated the change nor being able to adapt as fast as necessary.

Example 1: Napster: Napster (1999–2001), in its first incarnation, and other platforms like Kazaa or Mule did not change the paradigm of a product. It was a one-to-one transfer of a physical to a digital product and it was free. The peer-to-peer networks, the technology that empowered distribution, the ease of use and being free launched a disruptive process. It changed users' behaviour instantly and ultimately. There was no chance to change it back (Mulligan 2015: 19).

The effects were unprecedented and unexpected despite later legal actions to prevent or stop similar services. Although the industry was shaken and already damaged, it was not able to transfer to and adopt the digital model as the key players were too slow to change (Mulligan 2015: 60). They did not try to embrace it in a way that might have benefited the music industry and the artists, despite which the new user experience was here to stay, indeed it was users' behaviour that led to the pressure to change. Eventually with the arrival of iTunes, the music industry started to react (Mulligan 2015: 129). This disruption also paved the way for Apple as the new dominant partner. Apple adapted digital distribution in a reasonable and legal way, shifting disruption to the end of the disruptive process to mainstream acceptance.

It took more than a decade to close most of the illegal download platforms. The aftermath of the *low-end footholds* disruption was severe damage to monetising downloads. (Mulligan 2015: 291).

Example 2: User Generated Content: While Napster drew attention to the illegal sharing of music, YouTube focused on creation of music content. This time, the music industry tried to stop illicit use (and thereby sharing) immediately, either through negotiating contracts as the US major labels did and later by taking YouTube to court (Music Business Worldwide 2016b). However, by focusing on those elements aspects known to cause damage the industry ignored another phenomenon altogether, namely User Generated Content (UGC).

The use of existing "shared" content is one aspect of UGC, but its impact extends that. Innovators such as SoundCloud[24] established the concept as the advent of UGC again changed users' behaviour, in treating users as consumers and simultaneously as producers. The result was another *new-market foothold* disruption that drew audiences' attention from professional artists. Some UGC creators even circumvented the traditional artist development route from the creative industries to successfully enter the commercial market.

3.3 Learnings

The structure and workflows of an organisation should react flexibly or adapt quickly to changes and trends from the surrounding environment, regardless of whether the source of the change comes from the market (e.g. a new player) or from the external world (social trends or politics). The most critical challenge is to first identify any causes of disruptive change. Innovations and concepts, whether new or resurfacing, must be monitored continuously and evaluated in relation to potential upcoming developments. With essential and evolutionary events in technology, early efforts help prevent damage and encourage the building of new and improved infrastructures as well as workflows. Instead of standing by watching innovation (and disruption) happen to then harvest the resulting financial benefit later, it is more beneficial to shape and improve the market to increase revenues and market value.

[24] http://soundcloud.com

This requires a joint effort by all stakeholders even in a competitive market, where it makes sense to work collaboratively on the potential of new concepts and this is exemplified by the coordinated development of the WorldWideWeb Consortium (W3C)[25]. Any new technology or concept in the market (let alone the music industry) should be considered and evaluated in detail. Innovation cycles have significantly accelerated so the best way to prevent an incumbent being overrun is to examine innovations in advance in their nascent steps.

3.4 How blockchain might disrupt the music industry

The most likely use cases of blockchain that can develop a disruptive potential are licensing and "structure as a service".

Licensing: Licensing is the basis of the monetisation of music and other intellectual property. As soon as workflows around licensing are affected by innovation, there is an immediate impact on the music industry. To a large extent, revenues depend on the existence and quality of metadata connected to musical works (Senges 2017: 36–8). Matthias Hornschuh: *"The economic core of business with content that is not physical lies in the data"* (Senges 2017b: 36).

Blockchain may allow for a significant rise in revenues by easier licensing processes, the correct identification of creators, and accelerating transactions provided the metadata problems are solved. In a market dominated by low value purchases and miniscule payments for single plays, lowered transaction costs lead to increased margins which supports independent and non-established artists as well as smaller labels and publishers. Improvements in time-to-market and increasing revenues lead to an increased presence in the music industry of blockchain supported companies. Those stakeholders avoiding blockchain and not participating in a new shared metadata model could suffer from the disruptive fall-out.

Structure-as-a-service: Compared to licensing, bundling various services into one might lead to further negative disruptive changes. Already

[25] https://www.w3.org

some players are offering on-demand artists services: label services, marketing, and most of all digital distribution. With blockchain as the backbone connecting smaller services, there is an immediate opportunity in the music industry for new players. Just as with Uber, Airbnb, Facebook and Amazon, these new players can be categorised as enterprises that do not produce, own, or offer services themselves. Business models like these are fast to build and cost-efficient to maintain.

A "structure-as-a-service" bundle offer that includes transactions, distribution, one-stop profiles, administration, and APIs to synch-catalogues could potentially render Collection Management Organisations (CMOs) obsolete. While today's unsigned artists would benefit from much better access-to-market than currently exists, the possible demise of CMOs would damage the majority of professional and semi-professional artists without the CMO's legal support and representation of these artists. Scenarios like these might explain the resistance towards blockchain by specific stakeholders like CMOs, even though they might well benefit from blockchain (Senges 2017b: 31–34). Despite resistance to blockchain based on ignorance, those stakeholders who oppose it will most likely merely delay rather than stop it. It is strategically more constructive to investigate if and how organisations can or should deploy blockchain.

Balancing access-to-market for all artists: Instead of shifting benefit from one group of creators to the other, the challenge is to generate advantages for all. Therefore, the music business has to tackle a fundamental problem namely how to integrate genuinely independent music to the commercial market. The term "independent" here refers to artists who are not CMO members nor are they signed to labels or music publishers. This group also relates in part to other topics like Creative Commons licensing and User Generated Content (UGC), that is described in chapter 3.2, example 2. It has already created disruption which could be amplified by blockchain-based structure-as-a-service offerings.

Any serious approach employing blockchain should include an extended multi-perspective concept. It is supposed to bridge the gap between do-it-yourself (DIY) artists and the music industry. The objective

should be to define a concept embracing cultural diversity that helps aspiring artists move between both worlds.

If it is possible to eliminate failures and erase existing aberrations, it is an excellent start to shape disruptive evolutions. Of course, any approach like this demands broad communication across the market and between all stakeholders.

4 How to manage disruptive changes

Managing a disruptive change does not translate to strategically face or fight new and innovative competitors. Neither is it a form of "traditional" project management with clearly defined tasks, deadlines, or closed processes. It extends the impact on a single organisation, and it often extends beyond an industry because of the reciprocal effect between entities within an organisation and beyond.

4.1 Tools and methods

The goal is to first identify the requirements on how to describe the tasks and identify the challenges in actively dealing with and shaping radical changes that may affect the entire market or even larger systems.

The domains and aspects of work are as numerous and vast as is the challenge. The outcome of the process is unpredictable, elusive, and currently available knowledge is limited. Due to the project dynamics, the key requirement is to move gradually in repeated iterations to allow for continuous customisation of task lists and goals. Successive iterations also allow for early feedback of requirements, supported by regular communication starting with the first iterations. Similarly, teams may change to match the current tasks and requested skill sets. An approach that applies agile methods and tools seems most suitable (Beck et al. 2001; Agile Alliance d. u.).

Teams should include members of various stakeholder categories to enable a multi-stakeholder dialogue. Also, members representing diverse vertical levels of implementation have to be involved:

- users (artists, composers, producers, licensees such as broadcast services),
- manufacturers and service providers (CMOs, labels, publishers, distributors, manufacturers of musical instruments and software),
- implementation teams (system providers of blockchain services),
- researchers (institutes and universities).

Core to successful and collaborative work on the challenge is in-depth communication which again requires trust and transparency. As a precondition to trust, all participants have to:

- share the understanding of the demand,
- share their motivation to engage,
- support and promote transparency.

The tools and methods mentioned require open frameworks and an open infrastructure but not in the open source software sense. Here "open" refers to frameworks that are accessible to everyone, but not necessarily free to use. Since teams and tasks may change anytime, the choice of software must not be limited to either type or kind of tools. The equivalent in management structures is collaborative management ("wiki management") which also enables cooperation between a large number of participants and stakeholders at a relatively low cost (Collins 2014: 122–124).

The variety of teams and sub-tasks might be realised best by establishing a working group or a virtual platform to connect between all the participants. A hub or broker structure might be suitable.

4.2 Framework

Apart from a set of tools and methods, an approach to prevent the unexpected surfacing and fall-out from disruption requires a context. This framework, or research work, should support the strategy and provide a template. Stakeholders involved then can execute any analytical and steering efforts according to objectives and guidelines that are part of the model.

It is necessary to examine the process if it is one that either initiates a *low-end* or a *new-markets footholds* disruption. Both apply innovative technology, workflows, data models, concepts or similar approaches that share a capability to start a transforming process. Therefore, the framework must be able to map the changes induced on to a transforming scheme that allows for guidance and shaping.

Management approaches that spring to mind first are migration management and change management, but, neither of these fit. One can apply migration management to closed (sub) systems where a new (sub)system replaces either the entire, or parts of the original order. Typically, these are software products, services, or formats that require a change in workflows. Any blockchain architecture introduced to a single company within the music industry, or across the entire music industry will be highly specific. It requires innovative concepts to replace one part of the system. Either they are designed to change workflows, interfaces and more, or they may substitute the entire technical backbone. The implementation includes processes that generate innovation by integration. Multiple migrations may also be needed when a blockchain concept is integrated if the impact and challenges exceed those of migration.

Change management goes beyond migration and manages transformational processes. It represents the customisation of an existing system and its adaption of changes taking place in the surrounding ecosystem (Litke 2004: 259–260). The reaction to on-going changes ranges from technical systems to workflows, from personnel structures to job cuts or hirings. As with migration, all actions are planned and executed internally within the organisation or group of organisations. Coordina-

tion efforts are limited, and standard project management tools may be sufficient.

The multiple requirements of potential changes from disruptive processes do not fit the migration management or change management models. As described above, there is a predominant uncertainty in disruptive processes from their outset and it cannot be precisely estimated. Most important are the trends and impacts from the surrounding (eco)systems that can be either a stimulus for the disruptive process or vice versa (when innovation may have induced them). As with change management, the main focus should be on external impacts, but rather than reacting to the effects, it is more relevant to analyse, shape and steer trends from the external sources.

Transition management may serve as a matching framework although as a research topic, it is still new (Schneidewind & Scheck 2012)[26]. Transition management targets the demand for management approaches that fit accelerated innovation cycles.

Frequent changes in technology that are initiated by innovation lead to and promote disruption. The fact that external impact is heavily involved shows the demand for a new approach in management. As suggested above, transition management goes beyond managing a transformation of workflows; its main objective is not reacting to but actively shaping external trends and impact.

4.3 Transition management

To show that transition management is a suitable framework to manage a disruptive process in the music industry, this chapter analyses the summary by Schneidewind and Scheck (Schneidewind & Scheck 2012). After introducing the definition of the term "transition", the authors match the model to the music industry.

[26] Schneidewind & Scheck are describing the deployment of transition research referring to recent changes in power economy.

4.3.1 Definition

Based on research from the Netherlands (Schneidewind & Scheck 2012: 45), the authors define transitions as a *"radical [and] structural change of a social system"*. This change is the *"consequence of co-evolutionary economical as well as cultural, technological, ecological and institutional trends on various levels"* (Schneidewind & Scheck 2012: 47–48).

4.3.2 Impact of co-evolutionary trends in the music industry

Like any other industry, the music business is part of the social system. Although the work by Schneidewind and Scheck refers to the power industry and the radical changes it is going through, it is possible to transfer the term "transition" to the landscape of disruptive processes in the music industry. There are various types of trends that lead to, or have an impact on disruptive processes in the music industry:

- Economic: If blockchain helps to increase revenue by improved licensing processes then, as a consequence, there is a positive economic trend. It leads to advantages for the music industry. However, other internal changes like that of user behaviour, caused by Napster and others, led to a trend of devaluation of intellectual property (externally) which in turn promoted unlicensed and non-remunerated usage.

- Cultural: In the 21st century, users have increasingly become producers and for the music industry, this meant the launch of do-it-yourself (DIY) artists. Recent articles described SoundCloud as a source of new genres (Caramanica 2017). In a reciprocal effect (co-evolution), the change of roles was fostered by economic changes like crowdfunding and by low prices for music and video production gear.

- Technological: Every change in recording and distribution technology has been radical in the music industry. Although,

most technologies unleashed their most disruptive potential when their costs fell below the threshold that private users could afford. Evolutionary moments like these connect financial and technological trends.

- Ecological: The availability of resources to manufacture physical media was of marginal relevance only. With the dominance of servers, power consumption and the disposal of hardware though, an external trend with impact for the music industry may gain more traction.

- Institutional: The evolution of CMOs and their representational power was and still is a potential source of institutional trends. Creative Commons is another example which propelled a new perspective on intellectual property. More precisely, it is not the introduction of Creative Commons licences that spawned an institutional trend. It is the impact of the existence of Creative Commons that led to its consideration. In the USA and the European Community, this developed into a legal demand for CMOs to adopt other licences and allow their members to register works under these licences.

4.3.3 Levels hosting trends

The description of transition research goes more into detail (Schneidewind & Scheck 2012: 48–49). The definition refers to "various levels" on which the evolutionary processes take place:

- the socio-technical niche,

- the socio-technical regime,

- the socio-technical landscape.

In the music industry, the *socio-technical* niche hosts start-ups and incubators of innovations. The Fraunhofer Institute introduced the codec of MP3 compression, whereas Blockchain is an innovation sourced from another market and developed by multiple start-ups like Ujo, Ethereum, BigchainDB and more. Again, this demonstrates the source of a disruptive impact can be external as most innovators and incubators are not necessarily part of the music industry. Some of today's dominant media corporations that shape the modern music and entertainment industry started off in other markets, e.g. Apple, Google, and Amazon.

The *socio-technical* regime in music industry comprises CMOs, major labels, major publishers, various industry trade associations[27], and the legislative body. A system of rules built a framework that defined the market-power of these stakeholders. Transition research differentiates between normative, regulative, and cognitive rules and in this model the major players like the trade associations and corporations can define normative regulations, but the foundation for these are the legal regulations. CMOs are regulated by law for example, and they define normative rules of licensing. Cognitive rules result from the perspective of groups of stakeholders and participants in the music industry. The different perception of "sharing" content escalated after the arrival of Napster (in 1998) grew from a trend that became more threatening as the technology evolved. The cognitive notion of intellectual property from the creators' perspective differed immensely compared to that of users. One consequence was tough legal action on certain copyright infringement cases, evidencing a deployment of normative rules supported by the regulatory level.

The *socio-technical* landscape describes the third level and represents where the social system and all trends are embedded. This level includes the range of environmental influence, political developments and associated conditions. Trends and conditions within the socio-technical landscape have in common that they are hardly controllable.

[27] These include Bundesverband Musikindustrie e.V. (BVMI), Dachorganisation der Musikschaffenden e.V. (DOMUS), and Verband unabhängiger Musikunternehmen e.V. (VUT) in Germany; examples worldwide include the International Federation of the Phonographic Industry (IFPI), the Featured Artists Coalition (FAC), The Worldwide Independent Network (WIN), and more.

One approach to enable at least some influence is lobbying by organisations, corporations, and associations.

A recent example is the vote in favour of an exit of the United Kingdom from the European Community, more commonly labelled as Brexit. Its future impact still is uncertain and almost impossible to influence from within the music industry. The potential consequences for the British and the European music industry have been compiled by Laura Snapes (Snapes 2016), prior to the vote, and she underlines the significance of this political decision for the music industry.

4.3.4 Patterns of change

The disruptive process has to be analysed based on the reciprocal impacts of trends, rules, and perspectives across various levels within one industry and beyond. A full analysis has to come up with a high degree of complexity, as the few examples featured above do show.

It is possible to reduce the complexity by identifying patterns of change in transition research (Schneidewind & Scheck 2012: 50). The summary of Schneidewind and Scheck refers to bottom-up, top-down, and hybrid models. There are indeed parallels with the types of disruptive processes described by Christensen et al. (Christensen et al. 2015) such as the bottom-up pattern matching the low-end footholds disruption. However, a detailed analysis of the relationship between transition patterns and types of disruption is still missing. Patterns can often not be precisely identified as one or the other type.

While Napster in 1998 certainly initiated a *bottom-up* model, it did not "dispossess" regime entities (Senges 2017b: 43) as the pattern implies. If transition research is applied in the context of integration of blockchain in the music industry, the hybrid pattern becomes important. If the objective is to jointly secure a smooth transition from a blockchain-less industry into one supported by blockchain architectures, any approach that offers a benefit for the majority of stakeholders demands a detailed investigation. Schneidewind and Scheck (Schneidewind & Scheck 2012: 50) refer to potential *"symbiotic relations between regimes*

[e.g. CMOs] and niche [e.g. innovators and start-ups]" which in an ideal world could pave the way for joint success.

4.4 Opportunities

Migration and change management, in particular, omit an option to shape the impact caused by processes from a macro environment. Transition management is supposed to shape *"the direction and […] pace of transformational processes"* (Schneidewind & Scheck 2012: 51).

Blockchain is not just a concept for single players but one involving interactions. A transaction protocol based on blockchain may result in another layer on top of the internet protocol to handle any, financial and/or contractual transactions. As with the internet, its full effect is only realised when the disruptive process comes to an end, and when it reaches the mainstream so that it becomes ubiquitous and no longer perceptible.

Licensing in music as well as in any other IP based industry is built on contracts and fees. It is a model that matches the concept of blockchain perfectly. Nevertheless, implementation needs to be shaped and aligned for the industry, which is an enormous challenge that will require considerable effort. Transition management enables communities and markets to not just prepare for likely costs and required actions but also to allow for changes in social structures. In conjunction with agile methods and the tools described above, it is a promising framework. If research in transition management in any industry is successful, it can provide a useful template and guidance on how to cope with radical technological evolution.

5 Conclusion

With numerous industries investing heavily in evaluating and testing blockchain, it is safe to say that blockchain is on its way to establishing itself as a concept in tomorrow's technology – it is here to stay. It is uncertain when, or in which form it will succeed.

The likelihood of blockchain noticeably entering the market should alert stakeholders in the music industry to the need to prepare for the

new paradigm. It would be wrong to ignore blockchain, which even if it fails, provides an opportunity to cope with rising and possibly disruptive trends.

Therefore, an approach towards blockchain in the music industry should include three tiers:

- evaluating blockchain,
- solving the metadata chaos,
- drafting a guide on how to integrate new technologies.

While the evaluation of blockchain focuses on feasibility and proof of concept studies for various cases, a joint effort to improve metadata workflows is crucial before applying blockchain or other technologies, and any results will need to be analysed iteratively.

The premise for this is to build a framework based on transition research and this should start by establishing a working group or roundtable to coordinate the transition. It is the most valuable goal for the groundwork of an infrastructure to mitigate obstacles and conflicts. While competition is healthy, economic battles and lengthy legal disputes will only hurt the industry and more importantly, the creatives who are suffering most.

The most prominent feature of blockchain is that it motivates stakeholders from all sides to discuss not just the technology but also more pressing issues like the metadata chaos. A joint approach is essential since any implementation of methods from transition management builds upon co-operative work: open infrastructures, application programming interfaces (APIs), shared access and joint maintenance of standard data. Ironically, shared thinking presumably is the most suitable way to grow the market.

Beyond blockchain and the music industry, connecting transition research to disruption leads to a challenging question: Is it possible to avoid the implied rupture? Even more, if disruption loses its threat by managing the transition, can rupture be turned into rapture over new opportunities?

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Notes for contributors

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All submissions should be made by e-mail to music.business.research@gmail.com.

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Article in journal:
Oberholzer-Gee, F. & Strumpf, K. (2007) "The Effect of File Sharing on Record Sales: An Empirical Analysis", Journal of Political Economy, vol. 115, no. 1, pp. 1-42.

Edited text:
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Translated text:
Tschmuck, P. (2006) Creativity and Innovation in the Music Industry, trans. M. Abel, Springer Netherlands, Dordrecht.

Article in newspaper:
Barber, L. (1993) "The towering bureaucracy", Financial Times, 21 June, p. 00.

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Holland Mortimer, J., Nosko, C. & Sorensen, A. (2010) Supply Responses to Digital Distribution: Recorded Music and Live Performances, NBER Working Papers 16507, Harvard Business School.

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