**From Selling Songs to Engineering Experiences: Exploring the Competitive Strategies of Music Streaming Platforms**

**Abstract**

Economic, cultural, social and political life is being increasingly shaped by digital platforms including social networking sites (Facebook), streaming services (Netflix) and sharing platforms (AirBnB). While social scientists have tracked the rapid emergence of platforms and developed useful conceptualisations about what they are and how they operate, surprisingly little attention has been paid to the nature of platform competition or the experiences of users. To address these gaps, this paper focuses on the illustrative case of recorded music, where platforms, including Spotify and Apple Music, face intense competition due to similarities in price and content. Drawing on 42 semi-structured interviews, 20 app ‘walk-alongs’ with Spotify users and an analysis of 120 documents (industry reports, trade magazines, press releases and news articles), it demonstrates how the basis of competition has shifted from content, price and curation to the engineering of compelling experiences that harness the unique and interconnected affordances of platformisation. The paper nuances our understanding of the dynamic and contingent nature of platforms, the processes of datafication and curation underpinning their interventions in markets and everyday life, the geographies of these virtual distribution and consumption channels, and the ways in which users imagine, value and experience music streaming platforms.

**Keywords:** DigitalPlatforms; Competition; Music Streaming; Curation;Consumption; Experiences

**Introduction**

Digital platforms, including social networking sites and streaming services, have disrupted cultural markets globally and established themselves as powerful economic actors. They are contributing to the re-organisation of a range of marketplaces, ways of working, and forms of value creation, communication and capture (Kenney and Zysman 2016; Srnicek 2016; Langley and Leyshon 2017; Nieborg and Poell 2018). Social networking platforms, such as Facebook, Twitter and Weibo, enable millions of people to socialise online, whilst creating opportunities for advertisers to reach audiences in increasingly intimate ways (Graham 2017; Smith 2019). Streaming platforms, such as Netflix, Audible, Spotify and Amazon Prime, have opened up access to vast catalogues of music, film, tv, audiobooks and podcasts, creating opportunities for creators and rights holders to distribute and monetise intellectual property (Morris and Powers 2015; Wayne 2018; YY 2019a – obscured author references will be added after the review process). By extension, sharing platforms, such as AirBnB, Uber and TaskRabbit, have created online marketplaces where ‘ordinary’ people can sell access to their homes, vehicles and labour to those in need of their services (Srnicek 2016).

Despite the recent and rapid emergence of digital platforms, social scientists have developed useful conceptualisations (Van Dijck 2013; Srnicek 2016; Langley and Leyshon 2017; Mackenzie 2018). This literature suggests that digital platforms are socio-technical infrastructures and business arrangements that facilitate and co-ordinate interactions between different sides of a marketplace (Langley and Leyshon 2017; Meier and Manzerolle 2019). They provide the means for people, content, brands and business to interact online, from the technical infrastructures that enable the flow of data, to the interfaces through which interactions occur. Yet, digital platforms are not mere conduits or neutral facilitators; rather, they actively seek to shape what and how actors interact within the spaces of their platforms (Van Dijck 2013; Kenney and Zysman 2016; Nieborg and Poell 2018; Eriksson et al. 2019). They exploit their ownership of the infrastructure to manipulate how people, information and cultural goods interact and ensure that interactions are optimised for the platform’s desired end(s). For example, Google invests in its predictive capabilities to ensure that it can select people who have a high likelihood of clicking on an advert, as this allows it to charge a higher price to businesses (Smith 2019).

Digital platforms are understood to be highly dynamic and contingent in nature (Mackenzie 2017; Nieborg and Poell 2018). What they are and how they intervene in markets and everyday life is shaped by changing user behaviours, company objectives and the tactics of competitors (Van Dijck 2013; Sanz 2014). Because they exploit network effects, platforms like Facebook must ensure they have a large and highly engaged user base to attract additional users and to sell advertising (Srnicek 2016; Smith 2019). As such, attracting and engaging users is integral to the commercial success of platforms and a key motivator behind why and how platforms seek to manipulate the flow of information, people, goods and services (YY 2019a). Thus, *platform competition*, in the form of competition for users’ attention and competition between rival platforms and non-platform alternatives is also central to understanding what digital platforms are and how they evolve. To date, however, platform competition remains understudied.

The platform studies literature has identified the practice of curation – the strategic selection, presentation and arrangement of information, goods, services, and people – as central to how digital platforms generate value for themselves and their multiple users (Van Dijck 2013; Morris and Powers 2015; Srnicek 2016; Barna 2017; ZZXX 2018; Drott 2018a; Prey 2018; YY 2019a; Eriksson 2020). By deciding what is valuable or relevant to a given situation and what is not, Bhaskar (2016) asserts that curation is reducing complexity, saving time, reducing cognitive burdens, filtering for quality and overcoming ‘choice overload,’ a bi-product of having abundant access to goods and services in the platform economy. There is a growing body of research examining curation in physical spaces, such as record stores, food markets, and fashion boutiques, which demonstrates how different forms of expertise as well as specific spatial and temporal dynamics shape the performance, value and experience of curation (ZZXX 2015; Leslie et al. 2015; XX 2017). Yet, in the digital age curatorial practices and processes which occur in virtual spaces need to be taken seriously and curation, as a set of activities and processes, requires ongoing conceptualisation and empirical enquiry (ZZXX 2018; Jansson 2019). Indeed, little is known about the ways in which curation is performed by digital platforms, in general, and how the practice is embroiled in platform competition, more specifically.

A distinctive affordance of being a digital platform is the ability to create digital data (Srincek 2016; Langley and Leyshon 2017; Hamilton 2019; Smith 2019; Cochoy et al. 2020). Platforms are contributing to an extensive process of datafication, where every aspect of people’s lives, from what they purchase to whom they chat to online, is being captured and rendered as digital data (Smith 2019). By providing the socio-technical means for different sides of a marketplace to interact, platforms are uniquely positioned to create and exploit information related to what, when and how people interact with others or consume cultural goods, such as music and television (Srincek 2016; Langley and Leyshon 2017; YY 2019b). Digital data is a valuable asset, marketable to other economic actors**,** including advertisers (Drott 2018b; Meier and Manzerolle 2019), but it can also shape how platforms curate by enabling the generation of personalised recommendations (Drott 2018a; Prey 2018; YY 2019b; Cochoy et al. 2020). Again, however, our current understanding is limited and there is a need to investigate how platforms collect and use digital data to compete and embed themselves further into markets, societies and the daily lives of users. These issues are connected more broadly to concepts such as ‘surveillance capitalism’ and the emerging field of data privacy and politics (Drott 2018b; Smith 2019).

The dynamic and contingent nature of digital platforms, coupled with their interest in amassing and deploying data about user behaviour, makes clear that their existence in the world ultimately rests on how they are experienced and adopted (Van Dijck 2013; Bardhi and Eckhardt 2017; Ruckenstein and Granroth 2020). Without the involvement of the people who use them, platforms are unable to cultivate network effects nor collect the data used to drive these effects. Despite its importance, the limited research on platform competition has paid insufficient attention to the experiences of users. Bucher (2016) has examined everyday encounters with Facebook’s news feed, to highlight how people form imaginaries about how these technologies work, whilst Rein and Venturini (2018) have examined how the practices of news publishers are being shaped by the introduction of live streaming on Facebook and the immediacy this brings, but how these interventions shape people’s motivation to engage with a platform over time remains understudied. Put simply, the development of platforms is inseparable from user practices and more research in this area is needed (Van Dijck 2013).

Working through the case of recorded music, where digital platforms, including Spotify, Apple Music and Amazon Music, have come to dominate how music is circulated and consumed (Morris and Powers 2015; YY 2019b; Eriksson 2020), this paper addresses these gaps. Recorded music is a highly illustrative case for the study of platform competition because competition between platforms is intense. All of the leading platforms provide access to similar content at a similar price point, and they all provide basic forms of curation, requiring these firms to develop innovative ways to attract and engage users. Recorded music is ubiquitous in people’s everyday lives, ‘soundtracking’ people’s travel time, working hours, and social and recreational activities (Fuentes et al. 2019). As such, becoming individuals’ platform of choice has the potential to be lucrative both in terms of revenue and data creation.

Drawing on a mixed-method approach involving 42 semi-structured interviews, 20 app ‘walk alongs’ with Spotify users and an analysis of 120 documents, including industry reports, press releases and relevant media articles, this paper demonstrates how platforms seek to attract and engage users. Building on the experience economy literature which asserts that firms operating in competitive markets must transition from providing products to offering experiences (XX 2013; Lorentzen and Jeannerat 2013; XX 2015), this paper argues that music streaming platforms are leveraging the quality of their user experience to secure competitive advantage. In particular, it outlines three interrelated strategic practices (1) the mobilisation of different forms of curation underpinned by the exploitation of digital data, (2) the manipulation of the spatial and temporal dynamics of the user experience, and (3) the imposition of technical constraints on user interactions, to engineer compelling experiences that seek to attract and engage consumers over time. In so doing, the paper argues that music streaming platforms have moved beyond differentiation on the basis of what they provide to how they make people feel.

This paper makes several important contributions. First, by examining the activities they undertake to attract and engage users, namely the practice of curation, this paper contributes to existing accounts about what digital platforms are and how they facilitate and co-ordinate interactions between different user groups. It demonstrates how the dynamics of competition between digital platforms is integral to understanding how, in material ways, they intervene in economic and cultural life. Second, this paper nuances our understanding of how digital platforms curate, highlighting how its performance is related to processes of datafication, the spatial and temporal dynamics of consumption, and the materialities of the platforms and devices used to interact with them. These findings refine our understanding of the fuzzy concept of curation, which has mostly been conceptualised in relation to physical spaces of consumption where curation is performed on a smaller and more individual scale. Third, this paper incorporates a much-needed consideration of the experiences and perspectives of platform users who play an integral role in determining the success of platforms, both in terms of adoption but also data creation. By focusing on the consumer perspective, this paper is able to demonstrate how platforms are exploiting the dynamic needs, preferences and emotions of individuals to retain them as users.

After reviewing the methodology, the paper provides an overview of the case of recorded music. This is followed by three empirical sections which address how music streaming platforms 1) create unique user experiences through mass personalisation, 2) manipulate micro-spatialities and moments, and 3) encourage and leverage user loyalty through forms of lock in. The conclusion highlights the need for ongoing research to continue to refine our understanding of the dynamic and contingent nature of platforms and intensity of platform competition.

**Methodology**

The empirical material presented in this paper draws on data collected from 2016 to 2018 in two phases.

Phase 1: Key informant interviews

To investigate how music streaming platforms operate and their competitive strategies, 22 semi-structured interviews, lasting between 45 and 60 minutes, were conducted with key informants. Three interviews were conducted face-to-face and 19 interviews were conducted remotely using the video conferencing service, Skype. These individuals, who were located in the industry and technology clusters of London, Stockholm, New York and Berlin, work as playlist editors and data scientists at leading music streaming firms, executives at major record label and journalists covering the music industry. Participants were selected purposively based on their position in and expertise about the recorded music marketplace. Participants were identified by reviewing company websites and LinkedIn pages and recruited through prospective contacting via email. Snowball sampling was subsequently used to facilitate the recruitment of additional key informants.

Although the interviews generated detailed data and allowed respondents to express experiences and opinions in their own words, the competitive strategies of streaming firms are closely-guarded secrets and respondents were reluctant to answer some questions (for a detailed account of the challenge of accessing and researching Spotify, see Eriksson et al. 2019). Therefore, interviews were supplemented and triangulated with the collection and analysis of 120 documents, including promotional and marketing material, reports and media articles about leading streaming firms, their strategies and the marketplace more broadly. We collected 10 annual reports about the state of the digital music market created by the International Federation of Phonographic Industries (IFPI), dating back to their first publication in 2008, which provided valuable insights into growth and change in the marketplace. We also acquired a subscription to the music industry trade magazine, *Music Week*, which opened up access to interviews conducted with executives from music streaming platforms and incumbents in the recorded music industry, such as major record labels, about changes in the recorded music industry associated with streaming. Additional documents were sampled purposively and collected from the Web using the search engine, Google. Combinations of key terms, such as ‘music streaming platforms,’ ‘Apple Music’, ‘Spotify,’ ‘curation,’ and ‘consumption,’ were used to seek out relevant documents. During this process we scanned the results for relevance by reading abstracts, key words, and introductions and conclusions. We did not seek to collect a set number of documents, but we discarded anything deemed irrelevant. Those left in the sample of 120 were read and manually coded in their entirety.

Phase 2: User interviews

To obtain a more balanced understanding of the competitive strategies of music streaming platforms, a further 20 semi-structured interviews, lasting between 45 and 60 minutes, were conducted with Spotify users located in Southampton, UK. The sample included a mix of ages (early 20s to late 40s), gender (13 women and 7 men), and education and occupational profiles (including school-leavers, graduates, service workers, and professionals). The interview questions featured a narrative component and explored the ‘music biographies’ of participants, how they use Spotify in everyday life, and how it compares to the other streaming platforms, music formats and curators they engage with. For example, we asked ‘Does it feel like the service that Spotify provides is personalised to you?’ and ‘Do you think that using Spotify has changed how you listen to music?’

To probe deeper into the commercial strategies, micro-spatialities and user experiences of music streaming platforms we conducted app ‘walk alongs’ during interviews with Spotify users (Light et al. 2018). Participants were invited to bring along their own music device (e.g., smartphone) and individuals were encouraged to discuss their feelings about different aspects of their chosen service, such as the platform’s attempts to personalise the user experience through individually-tailored home screens, playlists and recommendations. This method facilitated triangulation – comparing what participants said about their experiences using Spotify with what we observed about how they access and engage with music on the service. The walk alongs, which lasted 30 minutes, were guided by open-ended prompts. Data was collected in the form of hand-written observational notes, describing what the participant was doing, whilst a Dictaphone was used to capture what was being said.

Data analysis involved a systematic process of coding and re-coding. Each transcript/document was analysed phrase by phrase, while thematic codes, annotations and reflective notes were added. After this ‘open coding,’ the data was organised into categories which corresponded to the themes and questions from the interview guides, literature, annotations and reflective notes. A process of axial coding followed through which connections between and within categories and subcategories were made. At this stage, some codes and subcategories ‘broke down’ while others emerged as more pervasive or poignant across the sample. We then moved toward identifying preliminary theories and collapsing categories into overarching themes through an iterative process of moving back and forth between the data and the research questions, interview guides and literature.

**The Case of Recorded Music**

Although platformisation is playing out in many areas of the contemporary economy, as with earlier rounds of digitally-driven restructuring, the marketplace for recorded music is a leading and illustrative case for the study of platform competition (ZZXX 2018). Music streaming platforms such as Spotify and Apple Music have rapidly gone from a niche alternative to the dominant mode of music distribution and revenue stream for the music industry (YY 2019a). These platforms have introduced subscription-based business models into a marketplace traditionally organised around the buying and selling of physical and digital goods (e.g. CDs, vinyl, digital downloads) from bricks-and-mortar and online retailers (e.g. record shops and Apple’s iTunes music store).

These platforms not only provide a useful lens through which to better understand the challenges associated with attracting and engaging users but also the ways in which rival platforms compete and the strategies they use to generate distinction, value and loyalty. Competition in the marketplace for music streaming is particularly acute because of what we call *platform parity*. All of the leading music streaming platforms, including Spotify, Apple Music, and Deezer, offer access to similar catalogues of music and similar functionality, such as the ability to browse, search and create playlists. On paper, the price point for a monthly subscription is similar (around £9.99) but there is variation as some companies provide discounts (e.g. student discounts), offers to attract new users (e.g. free for the first three months), and bundling with other services (e.g. offering discounted subscriptions in partnership with mobile telephone communications companies). However, these discounts are often imitated by competitors, undermining their ability to serve as a source of differentiation.

Beyond cost, music streaming platforms have attempted to differentiate themselves on the basis of their content offerings, specifically in the form of exclusive releases(for a more in-depth review of these practices see Meier and Manzerolle 2019). Services, such as Apple Music and Tidal, have struck exclusive license agreements with well-known recording artists, such as Frank Ocean, Drake and Beyonce, which guarantee exclusive access to their latest releases for a period of time. For example, in 2016, albums by Frank Ocean (*Blonde*) and Drake (*Views*) were released exclusively on Apple Music two weeks ahead of the competition (Hogan, 2016). Firms leverage different strengths to secure these deals. Apple Music deploys its substantial cash reserves to offer lucrative up-front cash payments or long-term exclusivity deals worth millions of dollars, whilst Tidal secures exclusive releases through the unique relationship one of the company’s owners, Jay-Z, has with recordings artists (Hogan 2016). Exclusive releases can attract consumers to specific platforms but the practice is controversial and its effectiveness and sustainability have been questioned (Roberts 2017). For cash-strapped firms such as Spotify (Eriksson et al. 2019), trying to outspend Apple to secure deals is likely to be unfeasible as the basis for platform competition.

In addition, exclusive releases limit the commercial potential of new recordings. Audience maximisation is crucial to the profitability of the recorded music industry, both for record labels and streaming firms, yet exclusive releases limit the potential audiences of new releases. As Meier and Manzerolle (2019) note, exclusivity makes it harder to achieve the economies of scale needed to make a profit from recorded music, potentially straining relationships with record labels and other streaming platforms. Indeed, exclusive releases can also alienate consumers who, depending on what platforms they subscribe to, may not get access and may become frustrated and resort to piracy, which has negative consequences for the whole music industry (Meier and Manzerolle 2019).

Platform parity and the ineffectiveness of exclusive releases makes it challenging for music streaming platforms to stand out in the crowd, introducing a need to compete beyond price and content (XX 2013; Sanz 2014). Recent literature suggests that helping consumers navigate the abundance of music, and information about music, can be an effective way to generate distinction and improve the quality of the service offering (Morris and Powers 2015; Barna 2017; ZZXX 2018; Drott 2018a). The sheer volume of recorded music made available by streaming platforms – over 50 million tracks and three billion playlists, in the case of Spotify – intensifies the need to provide experiences that both stands out from the crowd and deliver on the promise of helping users find and engage with relevant music. To put this in perspective and highlight the extreme nature of recorded music, there are a mere 200,000 audiobooks available on Audible and Netflix offers less than 10,000 movies and shows combined. Bhaskar (2016, p. 202) argues that the proliferation of music, alongside other content, such as podcasts and videos, has created a problem of “knowing what to listen to.” During interviews, ‘choice overload’ was cited as an important challenge inherent to the access-models of music streaming companies. As one respondent explained: “When you have unlimited access that means you’ve got unlimited choice and with that you need guidance” (Music Journalist, Broadsheet Newspaper).

The marketplace for music has long relied on a range of curators, including record labels, music journalists, radio DJ’s, and record store clerks, to find, evaluate, promote and sell the oversupply of musical talent and music-related goods and services (XX 2017). More recently, and through the creation of editorially-curated playlists and individual track, album and artist recommendations, music streaming platforms have extended this practice to their digital platforms to help users overcome choice overload. All of the leading music streaming firms provide some forms of curation, including editorially-curated and personalised playlists and recommendations, such as Spotify’s ‘New Music Friday’ playlist and Apple Music’s ‘New Music Mix’ (Barna 2017; Eriksson et al. 2019; Eriksson 2020). Despite the long history of curation in the music marketplace, Drott (2018a) highlights that music streaming platforms have successfully recast abundance as a problem and fabricated a need for assistance for which they claim to be uniquely positioned to resolve. Music streaming platforms have (re)introduced a type of artificial scarcity – in this case, a shortage of curation – to imply to the outside world that they are addressing an underserved need.

However, in addition to similarities in price and content, there is also increasing parity in the curation performed by music streaming platforms. Until recently, helping users navigate the ‘paradox of choice’ was an effective source of differentiation (Barna 2017). But due to platform parity we argue that much like exclusive releases, the extensive provision and promotion of basic forms of curation has eroded its value as a mechanism for attracting and engaging consumers, challenging existing accounts about its value as a source of differentiation (Morris and Powers 2015; Bhaskar 2016; Eriksson 2020).

Unlike other cultural goods, such as film, TV or books, which require greater focus and are typically consumed at set times of the day, recorded music is omnipresent in many people’s everyday lives, providing the ‘soundtrack’ to travelling, working, socialising and relaxing (Fuentes et al. 2019). For platforms that can successfully compete, there is a highly lucrative opportunity to embed themselves in millions of people’s everyday live, opening up vast revenue and data streams about what, when and how people consume recorded music. So as competition between streaming platforms intensifies, platform parity is forcing rival firms to create and communicate new forms of uniqueness and value which will attract new users and engage existing users.

**Unique User Experiences Through Mass Personalisation**

One way in which music streaming platforms seek to attract and engage users, thereby establishing their market dominance, is by providing personalised curation at scale. Whilst some existing literature has discussed how curation is used to address the information retrieval problem of choice overload (Bhaskar 2016), it underplays how it is leveraged in more nuanced ways to engineer attractive and engaging experiences. Music streaming platforms have moved beyond a ‘one-size fits all’ approach to curation to one that seeks to create experiences that appeal to the dynamic needs and sensibilities of different types of consumers simultaneously. These platforms ‘see’ their users as ‘dividuated’ individuals, composed of multiple identities with different preferences, needs and behaviours performed at different moments in time (Prey 2018; Drott 2018a) – and they seek to persuade subjects to see themselves as such (Eriksson et al. 2019). To generate demand for their services, music streaming platforms must convince individuals that their lives are decomposable into a series of moods, moments and need states, for each of which there is an ideal song or playlist to be found (Drott 2018a).

In this section, we demonstrate how music streaming platforms seek to cater to these multiple states through the staging of what our participants called ‘lean forward’ and ‘lean back’ experiences. Whilst Drott (2018a) uses these same concepts to distinguish between different services (e.g. Pandora Internet Radio (lean back) and Spotify (lean forward)), the following demonstrates that this usage of the terms overlooks a single platform’s sociotechnical capacity to stage different types of experiences for different types of users at different points in time, all within the same virtual space.

Music streaming platforms accommodate the need for active music discovery. They stage ‘lean forward’ experiences that seek to exploit the desires of users who are interested in music discovery as an end in of itself and who take pride in cultivating their musical expertise. For example, Christian (pseudonyms used) uses curation to increase the rate and scale at which he can discover new music: “It’s really satisfying knowing that it’s (Spotify) helping you listen to more music, broadening your musical tastes.” To achieve this, Spotify and Apple Music have frontline editorial playlists, such as Spotify’s ‘State of Jazz’ and Apple Music’s ‘Today’s Hits’, that feature new releases and are updated on a regular basis to expose audiences to new music. These platforms have discovery-centric personalised playlists, such as Spotify’s ‘Discovery Weekly’ (a personalised playlist of new music updated once a week) that are created and packaged to encourage people to discover new music. These services also provide users with the means to browse catalogues, such as providing ‘related artist’ recommendations.

Yet, music streaming platforms also accommodate the needs of the ‘casual’ listener. These platforms stage ‘lean back’ experiences to allow people to outsource choice for the sake of convenience. At times respondents take pride in finding music and building playlists while at other times they prefer to remain passive and allow the platform to save them valuable time and energy (ZZXX 2015). As Marie put it: “Sometimes it’s nice, like when I’ve got work to do, for somebody else (Spotify) to make that decision for me (choosing music), but it still kind of knows my preferences.” To address this need, music streaming platforms have created catalogues of ‘moods and moments’ playlists, such as playlists for relaxing, working out or sleeping, which provide music that suits particular contexts, such as Spotify’s ‘Peaceful Piano’ and Apple Music’s ‘Pure Motivation’ playlists (Eriksson et al. 2019).

The staging of lean back experiences seeks to reflect and advance how music is experienced in everyday life (Hagen 2015; Åker 2018; Fuentes et al. 2019). People incorporate music into everyday activities, such as commuting, working, hanging out and driving, and carefully curate music – a process Fuentes et al. (2019) describe as ‘soundtracking’ – to ensure that it matches the moment (Eriksson et al. 2019). Hagen (2015) demonstrates how soundtracking has been extended to the playlist creation strategies of streaming users, who use mood, feelings, temper, memories and biographic history as pillars to sort their digital music collections. The moods and moments playlists curated by music streaming platforms, seek to complement these everyday activities and ways of curating music. However, in contrast to Fuentes et al. (2019), who suggest that having control over what music is heard is integral to the performance of soundtracking, our findings highlight that this is not always the case. Rather, some people prefer to outsource the responsibility of soundtracking some or all of their everyday activities to music streaming platforms.

Åker (2018) argues that the ways in which music is curated by music streaming platforms expresses ‘contradictory articulations.’ The curation performed by these platforms is well suited to ‘distracted’ listening – music in the background – while at the same time providing ample opportunities for people to engage in more focused listening. We argue that it is precisely this capacity to accommodate contrasting needs, through the staging of lean forward and lean back experiences, that underpins how music streaming platforms seek to attract and engage users. Importantly, music streaming platforms ‘see’ listeners not as having one stable identity, but as adaptive individuals with many identities that are performed through practices and captured in the digital data traces they leave behind (Drott 2018a; Prey 2018). Staging both lean forward and lean back experiences allows music streaming platforms to cater to the changing needs of different individuals as they interpolate across time and space.

Crucially, this form of personalisation at scale is made possible by the affordances of platformisation (Mackenzie 2018). In comparison to bricks and mortar record stores, where spatial constraints are imposed on what content can be sold and how it can be displayed, digital platforms operate at scale and can be many things to many people. Furthermore, the digital data these platforms collect allows them to create data subjects of people (Prey 2018). It allows them to see people as dividuated individuals and optimise how they deliver personalised recommendations to the varying need states of individuals (Drott 2018a). These platforms collect data about micro-interactions with music, from what people search to when people listen to music (YY 2019b). Being able to use behavioural signals (e.g. saves, skips, repeat plays) to detect when users discover music on a platform or engage in habitual listening, allows these companies to design algorithms to recommend music that are optimised to drive further discoveries or habit formation and continuation. As the findings presented throughout this paper illustrate,being able to reliably predict what music people like and package these recommendations in a compelling way is important to platform competition.

Data collection is not only important for powering personalisation, but also the advertising businesses of music streaming platforms (Prey 2016, 2018; Drott 2018b; Eriksson et al. 2019; Eriksson 2020; Meier and Manzerolle 2019). Spotify and Deezer provide a free, ad-supported tier that is used to cultivate brand loyalty and in turn convert ad-supported users into more lucrative paying subscribers. The data these platforms collect about user behaviour enables these firms to sell targeted advertisements to brands and deliver advertisements not only according to demographic criteria but also behavioural patterns (Prey 2016; Eriksson et al. 2019). Indeed, Eriksson (2020) highlights that playlists are not only the driving force behind music discovery, user engagement and platform differentiation, they play an increasingly important role in the business of advertising. Playlists are not mere containers of tracks designed to supply music; rather they transform listeners into a resource whose attention can be sold to advertisers. For example, moods and moments playlists (e.g. motivational playlists, heartbreak playlists) are crucial to the provision of programmatic advertising. Several ‘calculative operations’ are triggered within and around a playlist (Eriksson 2020), allowing these firms to infer information about the social, spatial and emotional contexts of consumers at particular points in time, creating audience segments to be sold to third-party brands.

Despite these attempts to create different kinds of experiences through personalisation, it is difficult to evaluate whether the experiences engineered by these platforms are uniquely personal. However, the interviews we conducted with Spotify users suggested that having a truly unique experience is not necessarily essential to creating a satisfying experience. Rather, as the examples of fashion retailers and independent record stores producing limited runs of designer dresses or special edition vinyl releases demonstrate, ‘imagined’ exclusivity, where actual scarcity is replaced by a perceived rarity, is often enough (XX 2013). Prey (2018) highlights how the processes by which the data subjects are constructed to achieve personalisation are hidden from consumers and most are unaware why they are receiving a recommendation for a given song. Whilst Prey (2018) suggests that this is problematic because it limits a person’s ability to freely develop an identity with and through music consumption, our findings suggest that not knowing why and how personalised recommendations are generated does not matter as long as recommendations feel relevant. As Christian’s comments highlight:

You know thousands of other people have probably got a very similar playlist to my ‘Discover Weekly,’ but it does feel like they are taking what I’ve listened to and tailoring and curating that playlist based on my interests.

Indeed, Eriksson et al. (2019) demonstrate that many song recommendations in personalised playlists are in fact duplicates. Their experiments with bots and a diverse range of user profiles over time demonstrate that around 70% of the recommendations were duplicates, offered several times during the course of data collection. Whilst these observations bring into question the uniqueness of the personalisation performed by music streaming platforms, this does not necessarily matter as long as these platforms can convince their users that what they are experiencing is uniquely personal. Again, it is perception not reality that generates value and satisfaction (XX 2013).

Music streaming platforms use curation to engineer experiences that are relevant and engaging for different need states, including when someone wants to discover music and when someone wants to outsource choice. Importantly, whereas the marketplaces for music and other products such as art, fashion and food have traditionally featured a range of different curators to cater to the varying motivations, needs and preferences of individual consumers, music streaming platforms are attempting to accomplish this within the same space (ZZXX 2015; ZZXX 2018). Whilst others have demonstrated that existing and emerging sources of curation, such as record stores, radio, social media influencers, online forums and friendship networks still play an important role in the circulation and consumption of recorded music (ZZXX 2015; XX 2017; ZZXX 2018; Jansson 2019), music streaming platforms are seeking to capture as much curation and consumption, as well as data and advertising potential, as possible by tailoring how they curate to the different user needs.

**Manipulating Micro-Spatialities and Moments**

Music streaming platforms seek to attract and engage users by manipulating micro-spatialities and choreographing time. Whereas existing studies of designing environments and staging experiences have focused on physical spaces, such as flagship fashion stores, independent record shops, and food markets, less is known about the ways in which spatial and temporal dynamics are being manipulated to enhance user engagement and satisfaction within virtual spaces including retail websites, social media and digital platforms (Crewe 2013; XX 2013; XX 2015; Leslie et al. 2015; XX 2017). Indeed, Ash et al. (2018) demonstrate that digital practices and platform environments are characterised by uneven geographies and dynamic relationships between bodies and screens which can cultivate new modes of spatial awareness and guide users without thinking in order to capture and hold their attention. Addressing Pike’s (2015) call for critical examinations of the multiple and overlapping geographical associations – which may be material, symbolic, discursive, visual or aural – to identify and understand the ways in which brands and brand actors strategically emphasise or obscure specific elements, we highlight how manipulating space and time extends and deepens user engagement by engineering serendipity and introducing behavioural mechanisms that keep people returning.

Record shops and fashion boutiques, are confronted by the spatial constraints of their stores, limiting what can be displayed at any one time (Leslie et al. 2015; XX 2017). Existing research has documented how clerks engage in practices of curation, in the form of the intentional arrangement of things, to strategically highlight products and overcome these spatial constraints (XX 2017). Music streaming platforms are confronted by a similar but more acute challenge of having extremely finite space – the screens of computers, tablets, phones and even watches – to display millions of songs, playlists and images. Like their counterparts in physical retail, curation is one way platforms seek to overcome this. As one respondent put it:

The real estate, particularly if you are on a mobile, is minuscule. So that issue of serendipity, of just walking around the store doesn’t exist. So recommendation, discovery, algorithms, and playlists are important. So it's about getting people to dig deeper into the catalogues so that they feel they are justifying their £10 a month. (Music Journalist, Broadsheet Newspaper).

However, because of the affordances of platformisation, music streaming platforms are also able to manipulate the micro-spatialites of their platforms in more sophisticated ways than otherwise achievable in physical spaces of consumption (Hogan 2016; Eriksson et al. 2019). More specifically, music streaming platforms dynamically adapt their user interfaces and strategically arrange space. For example, Spotify’s ‘homepage’ is a dynamic and personalised space. Its content changes during the day, such as ‘wake-up’ playlists presented in the morning and ‘party’ playlists presented on a Friday night, and also incorporates personalisation, such as recently played content and recommendations based on a recent listening. By making this space dynamic and highlighting, through relocation, specific content that is deemed to be relevant to a person at a given moment, music streaming platforms are able to overcome the spatial constraints imposed by digital devices and introduce novelty, relevance and serendipity into the user experience.

Developments in context-aware recommender systems are likely to enable these platforms to manipulate the spatial dynamics of music consumption in more dynamic and intimate ways (Baltrunas et al. 2011; Schedl et al. 2015). Context-aware recommender systems draw on contextual data representing features such as location, time, weather, activity, emotional state, social context and cultural context, to make predictions about what music people are likely to appreciate in particular contexts (Schedl et al. 2015). Rather than curating music using generic heuristics, such as presenting ‘wake up’ playlists in the morning, context-aware recommender systems will allow these companies to personalise the types of music people see and hear at particular moments, such as recommending rock music to people who like to work out to rock music when they arrive at their gym. These approaches are reflected in the tactics of other platforms, such as Google, which exploits geo-spatial information, where people are when they are using their products, both spatially (e.g. on their home wifi network) and geographically (e.g. in Sweden, based on GPS data), to contextualise the affective states of consumers to generate ‘micro-moment marketing’ (Smith 2019) and ‘targeted advertisements’ which seek to engineer serendipitous encounters with advertisements (Eriksson et al. 2019; Ruckenstein and Granroth 2020).

Despite the global and homogenous nature of music catalogues and broader claims that technology will make consumption ‘placeless,’ geographical associations remain important for inscribing meanings and values while differentiating cultural products and experiences (XX 2013; Pike 2015). Our findings suggest that music streaming platforms seek to identify and understand regional differences within the wider global marketplace and then optimise the user experience accordingly. Editorial playlists are produced and promoted on a global, regional (e.g. South America), national and local (i.e. city) basis. Playlists are curated around local cultures, such as playlists featuring regional or local music (e.g. Apple Music’s ‘Bachata Classics’ or Spotify’s ‘Made in London’) (see figure 1), whilst there are country-specific variants of Apple Music’s Top 100 playlists, which feature popular music from a country, updated on a daily basis. Eriksson et al. (2019) demonstrate in their experiments that Spotify is also selective about what editorial content it displays in different regions. For example, in Spotify’s ‘Browse,’ a space where users can explore music organised in terms of genre, a Christian music category was downranked in European countries compared to the rest of the world, whilst Latin music was among the top choices for users registered in Spain and Mexico.



Figure 1: Regionalised content presented on Spotify’s homepage in Sweden (translation: ‘The music to keep an eye on’)

Beyond curation, music streaming platforms are adapting to the needs of different regions through changes in the user interface and underlying software. For example, in 2019 Spotify introduced Spotify Lite, a simplified version of its app (Spotify 2019a). Spotify Lite is designed to take up less storage space, require less power and allows users to set data spending limits. Rather than being available worldwide, its availability is limited to 36 markets, covering South America, the Middle East and Southeast Asia. Meanwhile in preparation for Spotify’s 2019 launch in India, it developed multi-language music recommendations, allowing recommendations to be adapted to several local languages, including Hindi, Punjabi, Tamil and Telugu (Spotify 2019b).

These examples illustrate how platforms are adapting to ‘uneven geographies’ and remind us that virtual spaces can be localised and should be regarded as experiential spaces that are actively produced and negotiated through the practices of its creators and users. Providing a lite of version of Spotify allows the company to reach users in the parts of the world that have access to less reliable Internet and slower smartphones, whilst creating and promoting editorial playlists on a regional, national and local basis illustrates the significance of local music cultures in shaping the experience of using music streaming platforms (Eriksson et al. 2019; Spotify 2019a; Spotify 2019b).

Music streaming platforms combine the strategic manipulation of space with the artificial imposition of temporal scarcity. According to Eriksson (2020), playlists are ‘logistical devices’ that arrange people and specific pieces of music in space and time by imposing rules about what and how music can be accessed and used. For example, much like physical ‘pop-up’ shops, which are temporary events where shoppers have limited time to purchase goods before being replaced by a new store (XX 2015), Spotify’s ‘Discover Weekly’ playlist is only made available for one week before being erased and replaced with a new compilation of songs. Temporal windowing is used by Spotify to encourage users to maximise their engagement with specific content before it is replaced. Whilst music streaming platforms ‘play up’ (Pike 2015) the virtues of unrestricted access and the unprecedented possibility of choice regarding what to listen to, this example demonstrates that they are also re-introducing forms of scarcity (Drott 2018a). In so doing, music streaming platforms seek to habituate consumer behaviour and create what one key informant described as ‘appointments to listen’ (Digital Manager, Music Distributor). Consumer interviews also highlight this practice:

When I first started out using it I'd gone through Spotify and saved a bunch of stuff that I was already into and it started putting this playlist together, and week on week I found myself skipping fewer and fewer tracks. My process was always like: right, Monday morning, cool, thirty new tracks to get through, listen to all of them, and then anything that I like I save it in a playlist. (Jamie, Consumer)

Beyond temporally windowing access to content, music streaming platforms have extended the programming practices of radio to create temporary events around the consumption of music. Apple Music’s Beats 1 radio station has a scheduled programme of live radio shows. Once again, this contrasts with the on-demand nature of music streaming, as scheduled shows force users to ‘tune-in’ at particular times. Apple Music makes recordings of Beats 1 radio shows available after the fact, but the live nature of these shows, combined with audience participation through social media as well exclusive first-plays of new releases by well-known artists, creates a temporary event and attractive experience which encourages consumers to engage with the service at the scheduled time (XX 2015). Whereas literature on the ephemerality of ‘liquid consumption’ (Bardhi and Eckhardt 2017) suggests a speeding up of product lifecycles and planned obsolescence, as notably demonstrated by pop up shops and one-off events in physical spaces, music streaming platforms combine the temporality of specific elements, such as weekly playlists, with longer-term engagement which generates more intimate and satisfying experiences for ‘regulars’ (XX 2017; Eriksson et al. 2019; Eriksson 2020).

**Leveraging Loyalty and Lock In**

The ways in which music streaming platforms engineer compelling user experiences through curation contribute to the competitiveness of platforms by cultivating loyalty, user lock-in(s), and first-mover advantages. The Spotify users we interviewed expressed an affinity for the platform because it has learnt their music tastes over time and they trust the recommendations they receive. As Rukenstein and Granroth (2020, p. 20) discuss in relation to targeted advertisements, when personalisation is successful it can trigger a ‘pleasurable feeling of recognition.’ During interviews it was this feeling and the fear of resetting this relationship that encouraged participants to stay with Spotify and this finding is crucial for understanding the nature of platform competition. Hamilton (2019) similarly identifies how music streaming users are often aware that the platform is ‘listening’ and recognise that their consumption in the present will shape what they experience in the future, which we found to further cement the pleasurable feeling of recognition because engagement is rewarded.

Christian’s comment exemplifies the emotional connection some people form with the recommendations provided by music streaming platforms and the lock-in it creates:

If I was to leave, jump ship and go to another streaming service, it’s going to take a while for that streaming service to learn what I like. So for the first 6 or so months, or for the first year or something, it’s going to have a few hits, but also a few misses because they don’t know me as well as Spotify knows me.

As with record stores, valuable trust is forged and fostered over time through repeat interaction. But instead of being tied to a specific individual, such as a record store clerk, and their perceived personal biographies, cultural capital or legitimacy, streaming users trust platforms and become attached based on the effectiveness of recommendations (ZZXX 2018). In so doing, Drott (2018a) suggests that personalised music recommendations have the potential to (re)imbue music with the ‘affective intensity’ – evoking pleasure and delight – that has allegedly been lost in an age of abundant access to digital music. As Eriksson et al. (2019, p. 136) put it: “the selling point of Spotify is not necessarily music but music streaming framed as a deeply personal and intimate even happiness inducing practice.”

Whilst trust and pleasurable feelings of recognition have a positive impact on user satisfaction, technical forms of lock in, specifically in terms of trapped data and the risk of losing music libraries built up over time, dis-incentivise people from switching platforms. Firms create what Roberts (2017) refers to as ‘velvet handcuffs’ in several ways. First, the data that fuels personalisation at scale are trapped within a platform. As this resource is proprietary and of substantial economic value platforms are unwilling to let this data leave (Drott 2018b). Thus, changing platforms would result in losing this recorded history which helps platforms improve the familiarity of their recommendations. Indeed, restricting access to this data is potentially important to platforms’ market power more broadly (Meier and Manzerolle 2019; Eriksson 2020; Srnicek 2016; Langley and Leyshon 2017). This is because data allows consumer attention to be bought, sold and supplied on the market (Eriksson 2020). As discussed in this paper, data helps these firms attract and sustain the attention of consumers by supporting the creation of editorial and personalised playlists and recommendations, and it enables these firms to sell the attention of consumers through advertisements, allowing them to target advertisements based on identities, behaviours and contexts (Prey 2016). Ensuring that data stays trapped within a platform helps firms accumulate influence in both the recorded music and advertising industries.

Second, music streaming platforms encourage people to build their own music libraries of albums, tracks and playlists and create their own playlists for themselves or to be shared with others. In contrast to other perspectives, which claim that with the rise of online, access-based services people’s interactions with cultural goods are becoming looser and more transactional (Bardhi and Eckhardt 2017), our participants feel attached to their digital music libraries, as they represent significant investments of time and contribute to a service feeling familiar and personal, establishing a ‘sense of place’ and a “… fixed point from which to structure their music consumption” (Sinclair and Tinson 2017, p. 5). Moreover, in suggesting that brand loyalty is of paramount importance for attracting and retaining the attention of consumers in online spaces of consumption, Pike (2015) claims that there are ‘zero switching costs’ to moving between service providers. Our findings suggest that this is not the case and technical lock in is a strategy used by platforms to strengthen their competitive advantage. Sinclair and Tinson (2017) demonstrate that this kind of ‘investment of the self’ contributes to loyalty to a platform and is a key antecedent to developing a sense of psychological ownership over a particular platform and the experiences it engineers. The story told by Elizabeth about a time when she thought she had lost her music library after performing a routine Spotify software update makes clear the value people place in the collections they have amassed on particular platforms:

The idea of losing what I’ve collected is really upsetting…I did an update on it and then I lost what was the ‘starred list,’ the things that you particularly like you save it. And I freaked out and for a couple of hours I was just like (imitates shouting), mum, my playlist is gone. It really upset me, like a shocking amount.

Hagen (2015) highlights how investing in playlist curation is a way for streaming users to establish uniqueness and a sense of ownership in a context where ownership appears to be more ephemeral, immaterial and generic. Paradoxically, our findings demonstrate that in making these investments people are also sacrificing control; they become dependent on a platform because their music collections are trapped within its walled gardens.

Together, the cultivation of platform loyalty and the trapping of digital data produce imbalances of power between music streaming firms, resulting in first-mover advantages (Meier and Manzerolle 2019). Spotify, which launched in 2008, has established itself as the market-leading music streaming platform, despite competition from incredibly wealthy technology firms, including Apple, Amazon and Google, who have all introduced their own music streaming platforms but failed to overtake Spotify’s lead. According to De Silva (2019) Spotify boasts 248 million active monthly users and 113 million paid subscribers followed by Apple (60 million paying or free trail subscribers) and Amazon which has 32 million users bundled with Amazon Prime. These rival firms have vast amounts of cash to spend and access to diverse data generated from their user-ecosystems, such as spending habits and smartphone device usage, yet they still struggle to compete. The findings presented here emphasise the importance of a first-mover advantage; Spotify has spent longer amassing data and cultivating platform loyalty, helping it to provide a better experience than its competitors. As Langley and Leyshon (2017) argue, continually attracting and engaging users creates further opportunities to create data and cultivate and capture value at an ever-greater scale.

However, it is important to remember that power is a relational effect and in a constant state of contestation. Music streaming platforms are engaged in a delicate balancing act between protecting the loyalty and trust of consumers and satisfying commercial imperatives (Drott 2018b). This is especially true for firms such as Spotify and Deezer, whose revenue, unlike Apple, Amazon and Google, is generated entirely from music streaming. In 2018 Spotify put the hip-hop star Drake’s photo on hundreds of playlists, including ones that did not feature his music, resulting in demands for refunds from users with advertising-free premium accounts, who equated this practice with advertising (Meier and Manzerolle 2019). Such instances are connected to wider accusations of so-called playlist ‘payola’ where major record labels are seen to be buying access to playlists (Eriksson 2020). Recently, Spotify started offering brands, beginning with Microsoft, the option to sponsor its signature personalised playlist ‘Discover Weekly’ (Tiffany 2019). Although it is too early to gauge the awareness and reaction of users to these practices it is clear that any change that might damage trust, the user experience or perception of a brand could disrupt the dynamics of power in the music marketplace and create the space for new market leaders.

**Conclusion**

With billions of monthly users combined, digital platforms have become dominant actors in the contemporary economy. Whilst the existing platform studies literature has come a long way in helping us to understand what platforms are and how they might be impacting social, economic, political and cultural life, important gaps persist. In particular, key questions remain about how platforms compete, perform curation and are ultimately imagined, valued and experienced by users.

To address these gaps and nuance our understanding of what platforms are and how they are intervening in markets and everyday life, this paper examined the nature of platform competition between music streaming platforms. It argued that firms such as Spotify and Apple are attempting to generate distinction, value and loyalty in new ways. Moving beyond strategies related to price, content, functionality and basic forms of curation, these rivals are harnessing the unique and interconnected affordances of platformisation to engineer compelling experiences to attract, engage and retain users. The empirical sections outlined how music streaming platforms are exploiting digital data to perform curation and personalisation at scale, manipulating spatial and temporal dynamics to enhance the user experience and imposing technical constraints and lock ins to keep consumers using and paying for the platform over time.

The findings make several important contributions. The consideration of how music streaming platforms compete nuances our understanding of the dynamic and contingent nature of platforms – what they ‘are’ but also how they ‘evolve’ based on the strategic interests and tactics of competitors (Van Dijck 2013; Mackenzie 2018; Nieborg and Poell 2018). The paper also contributes to our understanding of the fuzzy, yet important, concept of curation (Bhaskar, 2016; ZZXX 2018). Whilst curation has been examined in relation to physical spaces of consumption, this paper addressed the need to examine how it is being extended to the virtual spaces of digital platforms (Jansson 2019). Teasing out the ways in which the affordances of digital platforms, including the scale at which they can operate to access vast troves digital data, also builds on existing literature which focusses on curation performed by human actors.

Spatially, the paper addressed recent calls by highlighting the geographies of digital platforms and how they produce dynamic, and temporally contingent, relationships between bodies, screens and moments (Ash et al. 2018). By teasing out how music streaming platforms optimise user experiences for cultural and infrastructural differences across space the paper also highlights the ways in which platforms are adapting to uneven geographies while reminding us that virtual spaces can be localised.

Finally, through the fruitful combination of interviews and app ‘walk alongs,’ the paper provided a much-needed consideration of the experiences and perspectives of platform users who play an integral role in determining the success of platforms, both in terms of adoption but also data creation (Van Dijck 2013). It helped to explain why people use particular music streaming platforms and how the curation they perform is shaping music consumption practices. As Rukenstein and Granroth (2020) encourage, this paper has taken seriously the emotional reactions of platform users and demonstrated some ways emotions are exploited to achieve platform loyalty. Specifically, it highlighted the importance of different forms of lock-in to the competitive advantage of music streaming platforms, creating a first mover advantage. Concomitantly, the paper underscored the dynamic nature of market power and the danger of abusing the trust of loyal users to satisfy commercial imperatives. By extension, the findings challenged some existing assumptions about the nature of liquid consumption in the age of abundance, including the persistent attachment to music libraries (Pike 2015; Bardhi and Eckhardt 2017).

Going forward, the dynamic and contingent nature of digital platforms and intensity of competition requires ongoing research. Music streaming platforms are continually innovating and imitating and new ways to attract and engage users are likely to emerge. In particular, the longer these platforms remain in existence, the more data they are able to collect, creating opportunities to exploit this information to roll out even more seamless forms of advertising or to improve how they personalise the user experience or manipulate space and time (Drott 2018b). In particular, additional research is needed about how people perceive and experience personalisation. The impact of personalisation and evolving forms of curation on the diversity of individual music tastes, preferences and practices and how these are differentiated across local, regional and national markets within the wider global marketplace should also be considered. Put simply, the scale at which these platforms operate has the potential to radically transform the nature of music consumption and further and ongoing research is needed to track and investigate the range of related developments.

Whilst music streaming platforms are an important and illustrative case, there is also a need for more research examining platform competition in other marketplaces. Future research could build on the findings presented here and consider how other platforms are leveraging experiential qualities to generate distinction, value and loyalty. Experiences may be important to platforms in other marketplaces, but how they are engineered and monetised is likely to be different, as other platforms have different forms of data at their disposal and platform users will have different needs and expectations depending on what goods and services they are accessing and consuming. Studying platform competition has the potential to become a vital lens through which we understand how platforms are extending their control of markets and shaping our everyday lives.

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