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Digital Disruption in the Recording Industry

Hyojung Sun

Thesis presented in fulfilment of the requirement of the degree
of Doctor of Philosophy

THE UNIVERSITY OF EDINBURGH

DECLARATION

I hereby declare that this following thesis is my own work and that, to the best of my knowledge, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgement is made in the text.

December 2016

Hyojung Sun

ABSTRACT

With the rise of peer-to-peer software like Napster, many predicted that the digitalisation, sharing and dematerialisation of music would bring a radical transformation within the recording industry. This opened up a period of controversy and uncertainty in which competing visions were articulated of technology-induced change, markedly polarised between utopian and dystopian accounts with no clear view of ways forwards. A series of moves followed as various players sought to valorise music on the digital music networks, culminating in an emergence of successful streaming services.

This thesis examines why there was a mismatch between initial predictions and what has actually happened in the market. It offers a detailed examination of the innovation processes through which digital technology was implemented and domesticated in the recording industry. This reveals a complex, contradictory and constantly evolving landscape in which the development of digital music distribution was far removed from the smooth development trajectories envisaged by those who saw these developments as following a simple trajectory shaped by technical or economic determinants.

The research is based upon qualitative data analysis of fifty five interviews with a wide range of entrepreneurs and innovators, focusing on two successful innovation cases with different points of insertion within the digital recording industry; (1) Spotify: currently the world's most popular digital music streaming service; and (2) INgrooves: an independent digital music distribution service provider whose system is also used by Universal Music Group. The thesis applies perspectives from the Social Shaping of Technology ("SST") and its extension into Social Learning in Technological Innovation. It explores the widely dispersed processes of innovation through which the complex set of interactions amongst heterogeneous players who have conflicting interests and differing commitments involved in the digital music networks guided diverging choices in relation to particular market conditions and user requirements.

The thesis makes three major contributions to understanding digital disruption in the recording industry. (1) In contrast to prevailing approaches which take P2P distribution as the single point of focus, the study investigates the multiplicity of actors and sites of innovation in the digital recording industry. It demonstrates that the dematerialisation of music did not lead to a simple, e.g. technologically-driven transformation of the industry. Instead a diverse array of realignments had to take place across the music sector to develop digital music valorisation networks. (2) By examining the detailed processes involved in the evolution of digital music services, it highlights the ways in which business models are shaped through a learning process of matching and finding constantly changing digital music users' needs. Based on the observation that business models must be discovered in the course of making technologies work in the market, a new framework of 'social shaping of business models' is proposed in order to conceptualise business models as an emergent process in which firms refine their strategies in the light of emerging circumstances. (3) Drawing upon the concepts of musical networks (Leyshon 2001) and mediation (Hennion 1989), the thesis investigates the interaction of the diverse actors across the circuit of the recording business – production, distribution, valorisation, and consumption. The comprehensive analysis of the intricate interplay between innovation actors and their interactions in the economic, cultural, legal and institutional context highlights the need to develop a more sophisticated and nuanced understanding of the recording industry.

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GLOSSARY

A&R: Artist and Repertoire
ADA: Alternative Distribution Association
AHRA: Audio Home Recording Act
AIM: Association of Independent Music
ANT: Actor Network Theory
ASCAP: American Society of Composers, Authors and Publishers
A2IM: American Association of Independent Music
CI: Consolidated Independent
DIY: Do-It-Yourself
DMCA: Digital Millennium Copyright Act
DRM: Digital Rights Management
DSP: Digital (Music) Service Provider
D2F: Direct-To-Fan
HADOPI: Haute Autorité pour la Diffusion des œuvres et la Protection des droits d'auteur sur Internet
IFPI: International Federation of the Phonographic Industry
IM: Instant Messaging
IMPALA: Independent Music Companies Association
IODA: Independent Online Distribution Association
ISP: Internet Service Provider
MLP: Multi-Level Perspective
MCPS: Mechanical Copyright Protection Society
MPAA: Motion Picture Association of America
PRS: Performing Rights Society
P2P: Peer-To-Peer
PPL: Phonographic Performance Limited
PPV: Pay-Per-View
RIAA: Recording Industry Association of America
RPM: Rotations Per Minute
SCMS: Serial Copy Management System

SCOT: Social Construction of Technology
SACEM: Société des Auteurs, Compositeurs et Editeurs de Musique
SDMI: Secure Digital Music Initiative
SNS: Social Network Sites
SPP: Swedish Pirate Party
SST: Social Shaping of Technology
STS: Science and Technology Studies
TPM: Technical Protection Measures
TRIPS: Trade Related Aspects of Intellectual Property Rights
VOD: Video-On-Demand
WCT: WIPO Copyright Treaty
WIN: Worldwide Independent Network
WIPO: World Intellectual Property Organisation
WPPT: WIPO Performances and Phonograms Treaty
XML: Extensible Markup Language

CHAPTER 1. INTRODUCTION

1.1 Problem Statement

By enabling the duplication and sharing of cultural products at no cost with no degradation of quality, digitalisation suggested a major shift in the way cultural contents are produced, distributed and consumed. The recording industry has been the first of the cultural industries to confront the changes posed by the digital technology. The debut of Napster, the pioneering digital music service based on Peer-To-Peer (“P2P”) technology, promoted widespread predictions of an imminent and radical transformation within the music industry. The concept of radical innovation brings to mind Schumpeter’s concept of innovation as involving “gales of creative destruction”, a process of far-reaching changes to existing frameworks, technologies and institutions “that incessantly revolutionizes the economic structure by incessantly destroying the old one, incessantly creating a new one” (Schumpeter 1950, 83).

This radical change was claimed to bring about the “networked information economy” that could offer individuals “greater autonomy, political communities greater democracy, and societies greater opportunities for cultural self-reflection and human connection” (Benkler 2006, 473). With the potential for decentralising the commodification and commercial control of capital-intensive intellectual property, P2P technology was celebrated as a way to build a “communal innovation”, in which individual information sharing and filtering mechanism would diversify user tastes through exposure to lesser-known artists (Fagin, Pasquale and Weatherall 2002).

The path of technological innovation, however, is by no means straightforward. The unauthorised use of copyrighted material has undermined the recording industry’s business structure, which was based upon distributing and selling cultural content embedded in physical artefacts, through which an artificial scarcity created as a rival good was used to control distribution and consumer price. The possibility of infinite reproduction and distribution of free music, in conjunction with the ease of music recording, presented a great challenge to the recording industry, potentially displacing the conventional gatekeepers or rendering them redundant. The immediate consequence

was manifested in the decreasing revenue from record sales. The recording industry cultivated the so-called “digital crisis” rhetoric to lobby for longer and stronger copyright protection. The “war” on piracy was launched to stamp out P2P file sharing, criminalising all forms of file-sharing activities. Napster was shut down, and a plethora of subsequent Peer-To-Peer (P2P) services remained on the outskirts of the marketplace as “darknet” (Biddle et al. 2002). Subsequently, iTunes and a myriad of other digital music services arose to valorise music on the digital music networks, but a large proportion of digital music users remained unwilling to pay for music.

Following the launch of a series of initiatives since Napster, learning through trial and error, the recording industry is entering a new phase in which consumers are attracted more to legitimate digital music services than to free, often illegal, options. Central to this change is the growth of the freemium-based streaming music business service spurred by Spotify. Spotify’s proclaimed “legal and superior quality” to P2P file-sharing, as well as the immense number of legal catalogues, have proved enticing enough to stir up 100 million paid users (Resnikoff 2016). The recent changes in the recording industry, such as newly adjusted rights and services suitable for digital formats and the diversification of revenue streams, have prompted some commentators to proclaim that a successful new technological model has been established in the music industry (Roberts 2011). Indeed, streaming services are increasingly perceived to be an answer to the industry’s battle to eliminate piracy (Aguilar and Waldfogel 2015), potentially signalling the economic recovery of the recording industry as a whole (IFPI 2015).

However, this pattern of development deviates from the initial predictions of digital disruption in the recording industry. Why did this mismatch between predictions and what actually happened arise? What factors shaped this development? Is the growth of the digital music business a response to digital innovation or an outcome of a restrictive copyright regime? There are sharp dichotomies in assessments of the recent changes emerging in the digital recording industry. Studies focusing on the legal impacts tend to emphasise the constrained aspect of the innovation. Drawing upon the continuity of the conventionally run technological, legal and societal structure, these studies argue that as long as the major labels retain control over the market built around copyright, innovation can hardly be attained. On the contrary, many media accounts have placed a

greater emphasis on the discontinuity which new forms of production, distribution and consumption have enabled outside the well-established industry structure. Focusing on a few notable changes or cases, these accounts portray a utopian picture of the contemporary digital recording industry.

Both views, however, offer a techno-centric vision, which places P2P distribution as the central focal point of analysis. In contrast, this thesis argues that technological innovation in the recording industry entails a complex interplay amongst a diverse array of factors such as digital technology, copyright regulation and the more or less conflicting interests between heterogeneous players such as major labels, other intermediaries, music consumers and artists. Despite the overall popularity of the subject, there has been a dearth of enquiry into these complex interactions between law, society and technology in the digital recording industry. To fill this gap, the thesis presents some steps towards mapping out the interplay amongst a diverse array of actors and factors involved in the actual innovation process, by exploring the early history and addressing contemporary developments from a number of viewpoints in the sector.

This research has adopted a qualitative data analysis of 55 interviews with a wide range of entrepreneurs and innovators, focusing upon two successful innovation cases within different locales within the digital recording industry: (1) Spotify: a digital music service and (2) INgrooves: an independent digital music distribution service provider whose system is also used by Universal Music Group. This thesis is largely inspired by the Social Shaping of Technology (MacKenzie and Wajcman 1985; Williams and Edge 1996) (“SST”) and its extension into the Social Learning in Technological Innovation perspective (Sørensen 1996; Williams, Stewart and Slack 2005). SST guides this study in investigating the heterogeneous and dispersed process of innovation through which the negotiations amongst the diverse actors and factors drive choices in the direction of technological development. The social learning framework, as an extension to SST, provides an insightful conceptual tool to explore the gradual process of technological change arising over a period of time and the reflexive efforts to ensure technologies are implemented, appropriated and domesticated in the market. The insights from SST and the social learning approach and an in-depth analysis of two layers within the industry –

digital music service and distribution – allow this study to investigate a broader range of settings for innovation and a wider array of players involved in the innovation of the recording industry.

1.2 Scope and Aims of the Research

The process of technological innovation is imbued with uncertainty, contingency and complexity. Understanding digital technology requires a sophisticated and intricate understanding of the relationship between technology and society; analysis must attend to the interplay between heterogeneous players who have differing power and interests (Williams, Stewart and Slack 2005). So far, however, two very distinct discourses have dominated the discussion of understanding technological innovation in the recording industry: is it a creative destruction or a destructive creation? Prevalent linear understandings of technological change focusing on the impact of technology on society produced a dichotomy between utopian and dystopian views of the way the industry would develop. This research seeks to overcome the shortcomings of these partial accounts by providing a detailed examination of the innovation process in which the complex set of interactions amongst heterogeneous players with conflicting interests and differing commitments involved in the digital music networks guides diverging choices in relation to particular market conditions and user requirements.

To this end, the thesis critically examines the prevalent accounts that technology would induce disintermediation. These accounts advance three broad predictions about the digital revolution in the recording industry. First, digital technology will shorten the value chain in the music industry by diminishing the roles of intermediaries or rendering them redundant. Secondly, disintermediation will enable artists to connect with their fans directly through digital distribution networks and retain the legal rights for their own sound recordings. This will lead to the overturn of the major labels' control built through access to Intellectual Property law. Thirdly, ubiquitous access to the unlimited music supply known as the Celestial Jukebox where music fans can enjoy an immeasurable scope of music choices, combined with peer review and viral impact on the Internet, will help music fans discover lesser-known or unknown music. This will contribute to achieving the beloved cultural attribute where diversity of music choices will flourish. Informed by a concern about assessing these three major predictions, this study investigates what has actually happened in the market.

The overarching research question guiding this research is:

How have the opportunities and challenges of digital technology been reconfigured in the contemporary digital recording industry?

Sub-questions to help answer this question are as follows:

RQ 1. How has the interplay amongst heterogeneous players configured the changing dynamics in the digital recording industry?

- How have the conflicts and tensions amongst a diverse array of actors and factors been aligned in the digital recording industry?

RQ 2. What are the processes of building a commercially viable business model in the digital distribution networks?

- What choices did the digital music companies make in building digital music services and what legal and socio-technical factors have contributed to the evolution?

RQ 3. What are the reasons for the mismatch between initial predictions and what has actually happened in the market?

- What are the initial predictions of the digital recording industry and how has the digital technology been domesticated and appropriated in the digital music value networks?

Technological development is subject to conflicts and different power struggles between different interest groups; technological innovation does not follow a simple technical or economic logic (Mackenzie 1984; MacKenzie and Wajcman 1985; Williams and Edge 1996). Radical technological innovation, in particular, rarely follows predicted development trajectories due to a lack of matching innovations; instead it is subject to conflicts and struggles amongst a diverse array of players (Rogers 2014). The innovation processes of technologies are shaped in particular by historically structured contexts and configurations of actors (Sørensen 1996; Williams, Stewart and Slack 2005). This suggests that attempts to understand the innovation process of digital music must pay

attention to the complex interplay amongst a diverse array of factors such as digital technology, copyright regulation and the more or less conflicting interests between heterogeneous players such as major labels, independent labels, intermediaries, music consumers and artists.

The first research question guides us to explore the complexity of the processes involved in the technological innovation of the digital recording industry and the way the diverse range of interests, commitments and motivations have interacted and eventually been aligned. The second question seeks to examine the struggles involved in building a commercially viable business model in a contested context in which different players have tried to situate themselves in a constantly changing environment. The third question points to the reasons behind the mismatch between the prediction and the societal uptake of digital technology in the recording industry. By looking at the dynamics and intermingling of interactions involved in the innovation of the contemporary digital recording industry, these research questions guide us to discover how and why the initial predictions have become estranged from the outcome of the technological development.

1.3 Thesis Outline

Chapter 2 provides an overview of the literature discussed so far in relation to the digital disruption of the recording industry. It begins with a discussion of the way the recording industry has changed in the context of technological advances, Intellectual Property law and organisational practices. In the following section, the view is extended to discuss the conventional value networks in the recording industry in a wide range of settings for innovation. The chapter ends with existing views on the digitalisation of music. This is discussed in three sub-sections: the dichotomy of understanding the digital recording industry induced by techno-centric views; the widely discussed views on P2P technology and its impact on the market; and the recent discussion on the changes in the contemporary digital music industry.

Chapter 3 is composed of two parts: one on theoretical background and another on research methodologies. The first section reviews the relevant literature from Science and Technology Studies that has been used to discuss disruptive technology. The section moves on to a discussion of the way Social Shaping of Technology and its extension to Social Learning in Technological Innovation can provide a useful insight to understand digital disruption in the recording industry as a main theoretical framework. The first section finishes with the existing discussion on business models and a new framework that integrates SST and the social learning approach. The second part of the section covers research design and methodologies. In designing the research for the thesis, a framework was drawn up for the study of digital disruption in the recording industry which integrates major elements influencing the technological development of the digital recording industry, as well as the crucial concepts from SST and the social learning approach. The section goes on to describe why case study is suitable for this research and the selection process for the case studies. The second section ends with a detailed explanation of how the fieldwork was conducted to gain access, how data was collected through interviews and documentations and finally how the collected data was analysed.

The empirical findings of this study are presented from Chapter 4 to Chapter 6. Chapter 4 looks at the detailed process of innovation involved in the evolution of digital music

services. The chapter traces the early history of the digital music services developed since Napster up to current digital music services, and demonstrates the uneven trajectory of business model developments in the digital recording industry. The early history is characterised as major labels' contradictory response to digital novelty. On the one hand, they resisted the change, but at the same time, they also sought to ensure that they were not displaced by new forms of digital distribution. Their survival strategies are discussed in two measures: the Secure Digital Music Initiative ("SDMI") project, forged to secure technological control of burgeoning digital recording devices, and early digital music services such as PressPlay, MusicNet, Rhapsody and EMusic and their limitations. It then discusses how iTunes arose as an alternative business model to valorise digital music. Although iTunes' download model of a lowered price for legal catalogues was successful to a certain degree, it also left a space for a new generation of experimentation with new business models. This new type of digital music service model, including Last.fm, YouTube, is covered in order to demonstrate how firms with similar advertising-based free music offerings had different fates depending on their strategies for coping with challenges, in this case licensing deals with major labels. The chapter finishes with a brief overview of the recent changes prompted by streaming service business models.

Chapter 5 focuses on the changes in digital music distribution networks since Napster. The chapter begins with a brief overview of the lack of matching innovations left by Napster's technological leap. The arrival of iTunes quickly changed the situation by laying out the foundation of the legitimate digital music distribution infrastructure. The development of this system was made possible by allowing major labels to maintain their control over the distribution. In the independent sector, considerable changes took place, notably with the emergence of a new breed of intermediaries, digital music aggregators. The chapter then explores the changes to the digital music networks brought about by the digital affordances known as Direct-To-Fan (D2F), as well as the challenges prompted by an abundance of choice, leading both discontinuity and continuity to converge in digital music distribution networks. The chapter broadens the perspective to examine how the digital music convergence is bringing about changing dynamics in the recording industry. The complex interplay amongst the diverse arrays of

actors and factors in the digital recording industry is discussed in terms of four major networks – creativity, reproduction, distribution/promotion and consumption.

Chapter 6 presents an in-depth analysis of two case studies, INgrooves and Spotify. INgrooves' case provides a detailed process of the reintermediation that took place in digital music distribution networks. The first part of the story looks at the way a large-scale digital music distribution, sparked by iTunes' growth, allowed digital music aggregators to emerge and serve as a new middleman between digital music services and independent labels. The second part looks at the partnership between INgrooves and Universal Music Group, which reveals the unexpected problems arising in the digital era, followed by INgrooves' evolving roles as a distributor and a promoter. Spotify's case illustrates how the company built a commercially viable digital music service in the midst of piracy's golden era. The story begins with Daniel Ek's vision to develop a digital music service better than piracy and the way this innovation became possible in Sweden, the stronghold of piracy. The section continues with the specific solutions Spotify developed to compete against piracy, as well as its strategies to overcome challenges in making the technology work in the market. This is followed by the changes Spotify has made in the digital recording industry, such as reduced piracy, increased paying subscribers and subsequent changes. The section goes on to examine the changing strategies in relation to music discovery and its implications. The final part of the section discusses the problems Spotify has yet to solve.

Chapter 7 offers a discussion of the research findings and the contributions to existing knowledge. The contribution of the thesis is discussed in three main aspects: first, the way that SST and Social Learning in Technological Innovation as main theories enabled us to offer a new perspective in understanding digital disruption in the recording industry by capturing the complexity of innovation processes involved in the development of digital music distribution and services; secondly, the theoretical contribution the thesis makes in relation to understanding business models; and finally, the dispersed innovation processes observed through socio-technical constellations of the digital recording industry, allowing us to understand better the digital disruption in the recording industry. The thesis finishes with concluding remarks, limitations of the thesis and suggestions for future research.

CHAPTER 2. THEORETICAL BACKGROUND, AND RESEARCH DESIGN AND METHODOLOGY

2.1 Introduction

The first purpose of this chapter is to discuss the relevant literature of Science and Technology Studies (STS) that has guided this thesis as a theoretical and conceptual framework. To this end, this chapter critically examines the earlier and existing approaches in understanding disruptive technology, as well as studies of technological innovation. It starts by reviewing the disruptive technology within the framework of STS and then goes on to address the limitations of these approaches. In the following section we begin to address more specifically the theoretical frameworks that have guided the thesis. By elaborating on the general concepts and some accompanying key concepts, the section reviews how Social Shaping of Technology (MacKenzie and Wajcman 1985; Williams and Edge 1996) and its extension into Social learning in technological innovation (Sørensen 1996; Williams, Stewart, and Slack 2005) can serve as valuable frameworks to understand digital disruption in the recording industry. This section ends with a review of the literature on the business models on which this study relied to examine the innovation process of digital technology manifested in the form of these models. By critically examining the existing approach of understanding business models and incorporating Social Shaping of Technology and Social Learning approach into the discussion of these models, this section proposes a new framework to better understand business models in relation to technological innovation.

The second part of this chapter focuses on the research design and methodology. Section 2.2.1 reviews the conceptual framework that has guided this study to capture the complexity of the intricate relationship amongst the major elements influencing technological development in the digital recording industry. The section is followed by a discussion of why a case study methodology was chosen as a research strategy rather than a quantitative study, as well as the way the case studies were selected – revolving around two contrasting cases that offered different viewpoints for understanding change

in the digital music sectors. Section 2.2.2 addresses how the data were collected and analysed. It begins with the fieldwork process, followed by the main method of data collection – semi-structured interviews and documents. The chapter ends by detailing the process of data transcription and analysis by NVivo.

2.2 Theoretical Background

2.2.1 Understanding Disruptive Technology

1) Technological Paradigms and Revolutions

A wide range of analysts of innovation and technological change have drawn attention to discontinuities whereby extended periods of stability are interspersed by periods of revolutionary change. We start our theoretical review by examining these.

The concept of “creative destruction” has been widely used to describe the process of radical transformation that has been presumed to characterise change in the music industry in the digital era. Advanced by Schumpeter (1950), the term “creative destruction” refers to the revolution of an economic structure achieved by the turn of the innovation cycle. After periods of economic stability, as possibilities for innovation within an industry become depleted, a cluster of developments over a certain period of time, involving an interaction between technological and institutional change, tends to lead to a discontinuous pattern of growth through a process “that incessantly revolutionizes the economic structure by incessantly destroying the old one, incessantly creating a new one” (Schumpeter 1950, 83). The new combinations of change required across all sectors of the economy have the disruptive effects of sweeping away old structures and bringing about creative motion of change.

Concepts such as technological paradigms or technological trajectories are understood in this vein. Developed from Kuhn's (1970) scientific paradigm, Dosi (1982) introduced a concept of technological paradigm that refers to a pattern that firms follow in finding solutions to techno-economic problems in selective principles. Technological paradigms

“define the technological opportunities for further innovations and some basic procedures on how to exploit them” (Dosi 1988, 226). The development of particular technologies is patterned by the technological paradigm giving rise to a distinctive technological trajectory, shaped by various factors such as economic and technical conditions conditioned by the paradigm: “each paradigm entails a definition of the relevant problems that must be tackled, the tasks to be fulfilled, a pattern of inquiry, the material technology to be used, and the type of basic artifacts to be developed and improved” (Dosi and Orsenigo 1988, 16). From Dosi’s perspective, a new technological paradigm emerges when companies, faced with economic and social change, search for a solution to problems or certain customers’ needs, or when they overcome existing bottlenecks (Dosi 1988). In other words, a technological paradigm is an exemplar of a way to solve problems that reflects the “entire constellation of beliefs, values, techniques, and so on shared by the members of a given community” (Kuhn 1970, 175).

A similar notion of “techno-economic paradigm” is presented by Freeman (Freeman and Perez 1988; Freeman 1992). It describes the pervasive effect of a technology, which could bring about a major change not just in sectors but in the whole economy, opening up an exceptionally wide range of opportunities for economic growth. This concept is distinct from technological paradigm in that it goes beyond “engineering trajectories for specific product or process technologies and affect[s] the input cost structure and conditions of production and distribution throughout the system” (Freeman and Perez 1988, 47). Techno-economic paradigm, also called technological revolution, parallels Schumpeter’s idea of creative destruction, which stresses the long wave. This concept, however, places more emphasis on the fact that this paradigm could emerge “after a painful process of structural change” (Freeman and Perez 1988, 47). That is, the full potential of this paradigm only becomes possible when a strong belief is constituted that a set of relevant factors of technologies could overcome the mismatch between the approaching limits in the old regime and the possibilities of the new regime. The well-established dominant paradigm, however, often works as a strong hindrance to embracing the new opportunities. The author emphasises that a good match could be realised through a major structural adjustment in which regulatory mechanisms facilitate the full diffusion of the new paradigm.

Other writers in technology studies have also sought to explain periods of continuity in the development of technology as well as periods of discontinuity. The concept of “technology regimes” advanced by Rip and Kemp (1998) seeks to explain how regimes become entrenched by capturing expectations, motivations and regulations contributing to the shaping of technological development. They place a focus on the emergence of sociotechnical systems, and stress the dynamics of sociotechnical change. To this end, they use the concept of “technological regime”, “the rule-set or grammar embedded in a complex of engineering practices, production process technologies, product characteristics, skills and procedures, ways of handling relevant artefacts and persons, ways of defining problems” (Rip and Kemp 1998, 338). Technologies which develop within this technological regime, therefore, have the element of non-malleability, which is attributed to the preordained process of technological selection. They share the view with other evolutionary economists that cumulateness characterises the development of technology but provides a somewhat more macro-level of approach called “techno-economic paradigm” in which diffusion of technology covers wider arrays of factors.

Nelson and Winter (1977) place more importance on the gradual evolution in innovation. They reject neoclassical economists’ view, which regards firms as making rational decisions, and adopt ideas such as “procedural” and “bounded rationality” to describe firms’ anomalous behaviour as arising from the complicated nature of innovation. They stress that the understanding of innovation should incorporate uncertainty, the stochastic nature of innovation and institutional complexity and diversity. In contrast to neoclassical economists’ view, they believe that firms cannot predict the future of technology; instead, they have “heuristic search routines”. Henceforth, technological development unfolds following its own logic of “natural trajectories”, which are shaped in the course of searching for new routines either by imitation or intensive R&D and serve as the analogue of mutations. They argue that it is crucial to understand the “selection environment”, which “influences the path of productivity growth generated by any given innovation, and also it feeds back the influence strongly of the kinds of R&D that firms and industry will find profitable to undertake” (Nelson and Winter 1977, 61). Therefore, technology progresses according to the pattern of companies’ problem-solving activity, depending on this selection environment. Nelson and Winter (1982) define this as “technological regime”, which

explains why different industrial sectors have different patterns of technological development.

Understanding technological change within a framework of a paradigm, however, tends to presume that technologies develop according to the technological “trajectory” of finite techno-economic logic and therefore ignore the social circumstances influencing the technological development, failing to explain why technologies develop differently in different circumstances (MacKenzie and Wajcman 1985). What appears to be a new technology is in fact an outcome of a gradual change and new combinations of existing technology (MacKenzie and Wajcman 1985). Gilfillan's (1970) study of the gradual evolution of the ship from a floating log to the modern motor ship demonstrates that technological change is an accretion of small incremental details. Rosenberg (1982) also underscores a weakness of the view, which characterises technological change as developing within paradigms, interrupted by radical discontinuities. His rich account of the complex process involved in the process of technological change, in which both radical and incremental innovations cross over each other, highlights that technological changes arise as an accumulation of many inter-related innovations rather than as a shift detached from existing technologies. Constant's (1980) study clearly shows that what appears to be revolution is in fact an outcome of continuous improvement of small changes. According to Constant (1980), the change from the propeller to the jet in aircraft propulsion shows that the turbojet was built upon the entire 200-year-old tradition of turbine development, which encompasses water and gas pumps and an internal combustion system. All this points to the fact that existing technologies serve as an important foreground to be modified, improved and turned into new technologies (Edge 1974).

2) Multi-Level Perspectives

Building upon these foundations, more complex models of the processes of technological change have been developed that encompass a diverse array of factors involved. Perhaps the most influential is the Multi-Level Perspective (“MLP”). This seeks to examine technological transitions by looking at the detailed interplay between multiple levels of innovation process and to capture the complexity and uncertainties

involved in innovation processes. It takes into account more complex dynamics of sociotechnical change by incorporating wider societal changes such as “user practices, regulation, industrial networks, infrastructure, and symbolic meaning” (Geels 2002, 1257). The transitions in this framework are explained as alignments through interactions among different players, regimes and landscapes. The MLP provides an analytical framework that consists of three levels: a micro-level of technological niches, a meso-level of technological regimes and a macro-level of sociotechnical landscapes (Geels 2002). The micro-level is formed by technological niches, “protected spaces”, to protect against mainstream market selection. On the meso-level of the sociotechnical regime, existing technologies stabilise and trajectories are formed. The macro-level of the sociotechnical landscape accounts for an exogenous environment, which could bring about a dramatic change in social technical development.

The MLP stresses the interweaving of ongoing processes at each level and between the levels: transitions occur through interactions amongst these three levels. First, when new technologies are developed, technological niches act as “incubation rooms” in which radical novelties can grow into innovations through learning with users, regulations, infrastructure and production systems. Radical innovations do not usually perform well in the initial stage, and an entrenchment in the existing regime tends to make it difficult for new regimes to arise. Niches become “the seeds for change” (Geels 2002), a space for learning diverse dimensions such as user practices, regulations and infrastructure (Geels 2005). Through an alignment of activities amongst relevant social groups, mismatch between radical novelties and existing regime can be overcome. As tensions with existing technologies could arise from both regime and landscape levels, technologies are reconfigured through all elements of the sociotechnical regime: markets, user groups and user practices, technologies, production networks and policies. These changes at the landscape level put pressure on the regime. Windows of opportunity move the novelties up to the regime where technologies can achieve stabilisation and generate trajectories. When the configuration becomes mature and technologies are widely diffused, for example by linking up with landscapes, the old regime is replaced by new technology.

The MLP has been widely used to describe how new technological regime has replaced old regime in areas such as transportation: steamships are one example, the transition from horse-drawn carriages to automobiles another. However, criticisms have arisen questioning the simplistic description of the transition process and the applicability of the concepts (Berkhout, Smith and Stirling 2004; Smith, Stirling and Berkhout 2005). MLP thus was complemented to take into account a more complicated mechanism taking place between the levels (Geels 2010; Geels 2011). Although this framework has developed to account for the complexity involved in technological change, its focus on the regularities and patterns tends to fix attention on the exposed performance. As a result, this approach is still considered a relatively simple schema for understanding transitions, and is said to overlook the empirical complexity of actual transitions that history and sociology studies can show (Williams, Winskel and Liff 2015).

The contingency, complexity and diversity involved in the innovation process often make the process of technological development uneven. The multiple interests and power involved in the innovation process often cause the process of alignment and stabilisation of technology to be prolonged and produce unexpected outcomes. While these approaches can be useful in capturing certain patterns and regularities of technological change, we need to investigate the more detailed dynamics that occur in particular settings. Here we turn to Social Shaping of Technology, which seeks to account for a more comprehensive understanding of innovation and to address the complexity of interactions amongst the wide range of players and different phases of innovation.

2.2.2 Social Shaping of Technology

Early studies of understanding technology were based upon markedly simplistic models of the relationship between technology and society. The post-Enlightenment view was strongly influenced by the belief that technological progress is analogous to social progress. One strand regards technology as an autonomous force developing according to its own inner logic. Implicit in this notion is that technology is the most important force of social changes. These approaches were criticised by SST as “technological determinist”. An equally deterministic view was advanced by neo-classical economics.

Based on the belief that firms will choose the technology that will bring about maximum profits, they presume that technical capacities are readily available to all firms and that the most efficient technologies will thus diffuse across markets. Neo-classical economists treat technology as an exogenous variable and offer little insight into our concerns.

In the 19th and 20th centuries, support for concrete technological developments has been mobilised and legitimated by presenting them as instances of technological progress. Advocates of specific technologies have argued, and often continue to argue, that hindering the development of these technologies is wrong, even immoral, because it would go against technical progress. On the other hand, opponents of the same technologies have mobilised countervailing powers by referring to progress as the overarching goal and depicting the particular technology at issue as a threat to progress. However, during the 1960s and 1970s, people began to note a series of unanticipated negative effects of modern technologies such as the environmental concerns of pesticides or mass opposition to nuclear power (Dickson 1974). The earlier uncritical faith in technology began to falter and critiques arose to counter the notions that technology was neutral or developed according to some autonomous logic. Langdon Winner was one of the first to refute the idea that technology is neutral. In his famous article, “Do artifacts have politics?”, he argued that technologies can be inherently political and thus manifest certain values and interests (Winner 1980). From this viewpoint, rather than following internal logic, technologies could be designed differently and produce different implications under different social circumstances.

In the early 1980s, Social Shaping of Technology (“SST”) emerged to provide frameworks for analysing the relations between technology and society. In order to transcend the limitations of these earlier attempts, SST provides a broader perspective in understanding the complexity involved in technological innovation. SST rejects the simplistic models of innovation whose focus was on the “impacts” of technology on society, and stresses the coupling of society and technology. In this period various major frameworks arose to analyse the relations of technology and society.

The technological system approach was developed largely by Hughes (1986) to describe the large-scale systems involved in technological development. His work demonstrates that technology is not a stand-alone device divorced from its surroundings, but a part of a large system. Edison's invention of the lightbulb would not have been complete had the system of electricity generation and distribution not been developed. He argues that those who build new technologies should consider the way in which technologies are interrelated, therefore, innovators who successfully integrate a technology into a system are best seen as "system builders". The process in which a new technology is integrated into an existing system is typically uneven. To describe this lagging area of technological development, Hughes uses the military metaphor of "reverse salient", a term used to describe a backward bulge in the advancing progress of a military front line. This often arises due to the opposing forces threatening a breakthrough of a military line progress, requiring the reverse salient section to be pushed forward to advance the entire military front.

MacKenzie and Wajcman's (1985) book, *The Social Shaping of Technology*, ignited the discussion of SST. They emphasise the diverse choices available throughout innovation processes from the development to the implementation of technologies. Moving beyond the technology's "impact" on society, they stressed the need to take into account a wide range of factors such as economic, political, social, cultural and organisational settings influencing choices and the subsequent social implications. The Social Construction of Technology approach (SCOT) was pioneered by Pinch and Bijker (Pinch and Bijker 1984a; Bijker, Hughes and Pinch 1987; Bijker 1995). Drawing upon the earlier study on the Strong Programme in Sociology of Scientific Knowledge (SSK), led by David Bloor, SCOT argues against the claim that technical superiority is the main attribute of technological success, and treats both technological success and failure symmetrically. Implicit in this approach is the contingency and "interpretative flexibility" that various selections are possible, subject to social variables. The innovation process achieves "closure" when a particular technology is dominantly interpreted and forms a stable form. By adopting the concept of "relevant social groups" who have more power and interest over their preferred design, this explains why one technology can triumph over other competing technologies. Actor Network Theory (ANT) was mainly developed by Callon, Latour and Law (Callon 1986; Law

1991; Law and Callon 1988). It places much emphasis on the powerful actors who, this approach believes, mobilise and stabilise the global network necessary to build a project. In ANT, human actors and non-humans are treated symmetrically as sociotechnical ensembles. ANT places great emphasis on the “micro” level of analysis in which central actors make use of necessary resources, inscribe their intentions across the workplace and gain credibility remotely from other groups. It is particularly useful for understanding the relationship that central actors contribute to technological development and the way relative stability is achieved in technological innovation.

These approaches are not without criticism. Russell (1986) and Russell and Williams (1988), for example, indicate that SCOT’s focus on relevant social groups could run the risk of failing to take account of a wider spectrum of technological change which involves incremental innovation, entrenchment and negotiation of power relations amongst social groups who have different amounts of power and unequal access to resources. The complex interdependence between technological and social contexts and relevant groups requires us to take into account the social structure through which not only relations with technology but also economic, political and ideological factors underlie the process (Russell 1986). The overstatement of power and autonomy of actors could even form another type of technological determinism that considers relevant social groups as a major drive for social change (Russell and Williams 1988). Understanding technological development, therefore, should include a multi-level of stages which involves a continuous process of closing and reopening, influenced by multiple forms of negotiation amongst a wide range of players (Rammert 1997). Russell (1986) emphasises that this can be achieved by looking at the whole circuit of technological development.

“Only by scrutinizing the whole process, demonstrating and explaining the different points of access of each group to it, can we both expose deterministic myths and explain their plausibility in specific circumstances. Thus, in most contexts, the control of research and design processes by certain interests means that only a limited number of trajectories are accepted as ‘progress’, that some criteria for ‘improvement’ are taken as given and others are ignored, that ‘needs’

are interpreted, and thus that many options never surface for ‘selection’ in any conscious sense” (Russell 1986, 334).

ANT is also criticised for its lack of attention to differing power and interests playing out in broader social and economic structures. Its overemphasis on actors presumes that society and technologies are highly configurable by actors. The micro-level-centric view stems from its early studies, which examined nascent technologies in the R&D laboratory, and posed questions to help understand a complicated context in the real world (Williams and Edge 1996). The process of technological development is extremely complex, occurring from the interplay of diverse arrays of actors and factors (McLoughlin 1999; Russell and Williams 2002). The carefully selected choice of technology as a focus of the study tends to overemphasise early stages of technological development and overlook the uncertainty surrounding the technological change, which involves (re)negotiation of often contradictory interests amongst heterogeneous actors. In other words, technological development is not solely dependent on actors or actions, but involves the interweaving of the social, economic and technical forces embedded in institutional and social structures (Russell and Williams 2002). SST therefore emphasises the need to broaden the scope of the research.

“We need to map out not only their relation to the technology, but their relations to other sections of society, the economic, political and ideological constraints and influences on them, the broad historical changes affecting them and the more specific events leading them to the process under investigation. It is this structural location that largely determines their relationship to each technology with they conceive or which confronts them” (Russell 1986, 334–5).

More recent SST has widened the perspectives integrating diverse research areas under the rubric of “a broad church”, including evolutionary economics, politics, history and cultural studies, and seeks to provide a more sophisticated approach to demonstrating the diversity and complexities in sociotechnical factors influencing technological innovation (Williams and Edge 1996). The SST approach emphasises that social factors, rather than being driven by the inner logic of technologies or design, configure technological changes. The process of technological development is highly complex,

contingent upon interplay amongst diverse arrays of actors who have differing power and conflicting interests. This contradictory and uncertain process of innovation requires a broadened range of social groups and knowledge of relevant influences on innovation. Law (1987) describes the multifaceted aspect of interactivity between social and technical factors as “heterogeneous network”. In Hughes' (1986) terms, it is “social-technical systems” or a “seamless web”, which refers to all elements enabling technology to be intertwined within the structures of social, economic, political and technical spheres.

SST understands the development of technology as a heterogeneous and dispersed process in which technologies rarely diffuse straightforwardly as conceived from the outset at the design stage. Instead, technologies are subject to complex influences, unpredictable circumstances and a wide range of actors and activities. The contingency, complexity and diversity of technological innovation underpinned by SST imply the difficulty of achieving technological changes. In other words, the heterogeneous players and different power and interests involved in the technological development make the alignment and stabilisation of technology inevitably contentious and prolonged. SST stresses that the trajectory of innovation is composed of “choices” that unfold in different routes and produce different outcomes through a “garden of forking paths” (Williams and Edge 1996). In order to demonstrate how innovation proceeds in the course of complex selection processes, SST attends to the detailed processes involved in technological innovation. The detailed case studies, in conjunction with SST's broad scope, offer a useful analytical framework for observing how alignments of diverse interests lead to technological change and the negotiation process through which innovators change their strategies and modify selections in response to the particular environment (Russell and Williams 2002).

The uncertainty, contingency and complexity involved in the process of technological innovation for digital media requires a sophisticated and intricate understanding of the relationship between technology and society and the interplay amongst the heterogeneous factors and players involved in it (Williams, Stewart and Slack 2005). The recording industry was the first of the cultural industries to confront the challenges of digital technology. The trajectory of technological innovation in the music industry has

been a contested process of learning in which heterogeneous factors are influencing the (re)shaping of business settings. The possibility of digital revolution has been compounded by the major players' propensity to extend the existing framework. The SST perspective is therefore deemed appropriate to explore the dispersed and heterogeneous process of technological innovation arising from the diverse array of actors and factors in the digital recording industry.

2.2.3 Social Learning in Technological Innovation

Building upon the core concepts of SST, the Social Learning framework (Sørensen 1996; Williams, Stewart and Slack 2005) examines gradual improvements in technological changes and focuses upon reflexive practices involved in technological development. The Social Learning perspective is particularly useful for understanding why the promises of revolutionary change have not materialised. The traditional technology-driven view presumes that finished solutions will somehow match user requirements and thus can be readily applied in the market. The hype surrounding digital revolution in the recording industry can be understood in this vein. The predictions of revolutionary change in the recording industry presupposed that the possibilities enabled by the decreased costs of music recording and distribution would materialise in the market without much difficulty. However, the societal uptake and use of digital technologies turned out to be much more complex than widely assumed because the social adoption of new technologies inevitably involve decision-making processes characterised by ambiguity and uncertainty and thus inherently difficult to predict from the outset (Williams 1997).

Drawing upon the fact that the transformation of society is not achieved solely by technology, the Social Learning perspective seeks to find a discrepancy between the supply and the adoption from the learning process in which technologies are actually adopted, employed and embedded in the society. This process is characterised as “the serendipity of innovation” in which technologies are rarely diffused as conceived at the outset in the design stage (Williams, Stewart and Slack 2005). It is particularly challenging to predict the direction of technological development of radical innovations because they have no existing ground – customers, previous products or markets –

upon which to rely (Williams, Stewart and Slack 2005). The Social Learning perspective therefore moves beyond traditional studies' focus on design and deployment, and addresses the actual process of technological innovation composed of experimentation, discovery and struggles. To address the complexity of choices inherent in the cycle of technological design, development and adoption, the Social Learning approach emphasises the "learning" process taking place at the micro-level of technological innovation. Since multiple interests and visions are involved in the innovation, the process is often complicated and contested, unfolding through "negotiation and interaction between different players and thus subject to conflicts, and differences of power and interest" (Williams, Stewart and Slack 2005).

Of particular importance for the Social Learning approach is a better understanding of users. Social Learning rejects the widely believed presumption that users are sufficiently understood in technological design from the outset, and argues that consumption is an active and creative process through which products are appropriated and integrated into societal settings (Sørensen 1994). The common problems in developing digital media systems are related to the dominant "technocratic" design, which is driven by engineers with little understanding of user requirements (Williams, Stewart and Slack 2005). The social learning perspective rejects the idea that innovation is a matter of production, and perceives consumption and use as a crucial part of the innovation process. Therefore, users are not passive and adaptive receivers of technical supply, but play a crucial role in shaping and redirecting innovation. The Social Learning perspective pays great attention to understanding the complex interplay between the dynamics of technology supply and use (Williams, Stewart and Slack 2005). The use of digital technologies is becoming ever more ingrained in almost every corner of society, and the unprecedented pace of change poses an immense uncertainty surrounding the process of technological development. As the user base with its divergent demands grows, the indeterminacy of users' acceptance and building new markets is especially pronounced in the field of digital media. In this respect, the Social Learning perspective is particularly useful for understanding the diversity and specificity of user requirements and contexts.

The Social Learning perspective draws upon the studies of economic historians, which show that productivity growth was achieved through incremental innovation over a long

period through a “learning curve”. Arrow (1962) uses the term “learning by doing” to describe the productivity gain arising from the producer’s past production experience. Rosenberg (1982) advances a similar notion, “learning by using”, which refers to the stochastic process through which technology improves through producers’ knowledge of users’ experience. These notions imply that linkages between users and producers can contribute to successful innovation. The concept of “learning by interacting” emphasises the reciprocity of the innovation process through which technologies develop, informed by feedback from users and vice versa (Sørensen 1996).

To analyse the intricate process in which technologies are applied, consumed and used, Social Learning adopts the concept of appropriation to describe how technologies are adopted as socially appropriate artefacts. Two additional concepts, “innofusion” and “domestication” are essential parts of appropriation. Fleck (1988) advanced the concept of “innofusion”, which refers to “the processes of technological design, trial and exploration, in which user needs and requirements are discovered and incorporated in the course of the struggle to get the technology to work in useful ways, at the point of application” (Fleck 1988, 4). This concept refutes the widely accepted notion of diffusion of innovation as a passive process of adoption, and stresses that the implementation of technology takes place during the course of making it work. At the centre of this process lie users’ struggles to come to terms with new technologies, finding meanings or values and integrating them into their everyday life. This is called “domestication”, which refers to “the way in which technical capabilities are explored, meanings attributed and practices developed as artefacts are integrated within local social settings” (Williams, Stewart and Slack 2005). Domestication, therefore, highlights the active roles users play as “attributed agency”, constructing and reconstructing technology in the context of their own culture and social relations (Lie and Sørensen 1996). In understanding how digital technology has been reconfigured in digital music services, attention has been mostly drawn to the roles of legal regulations or the major labels, and therefore the contribution of music consumers has not been adequately recognised. Concepts such as “innofusion” and “domestication” provide a vital framework for understanding users’ crucial role in the evolution of digital music services.

Another useful concept for this study is “learning by regulating” (Sørensen 1996), which refers to the set of strategies policymakers are using to influence and control the development of new technologies. Regulation here covers not only governmental entities, but also the parties at stake in the technology and their influence in the development and the application of the technology. Developed from the notion of technology regime advanced by Rip, Misa and Schot (1995), this concept seeks to explicate how expectations, visions, rules and regulations contribute to the development of new technologies (Williams, Stewart and Slack 2005). The concept of “configurations” (Fleck 1988) helps us understand the interplay between the supply of digital technology and the specific social settings in which technology is appropriated. The rapidly changing nature of digital technology is highly heterogeneous and therefore carries the tension between the promises and what actually happens in the market. By perceiving technologies as a range of components that are assembled to configure particular purposes, the concept of configurational technology helps us understand how contradictory visions and interests are negotiated in its appropriation.

To emphasise the heterogeneity and loose coupling of players involved in the development of digital technologies, the Social Learning approach employs the term “socio-technical constellations” (Williams, Stewart and Slack 2005). This metaphor describes not only the closely organised arrays of players but also the loosely connected linkages amongst players, especially with some groups who remain on the fringe. With divergent motivations and interests, these players strive to achieve their goals. In understanding complex technologies such as digital media, it is important to understand that as a whole, these networks, linking heterogeneous and loose connections, contribute to the complete dynamics of technological innovation.

In understanding sociotechnical constellations, concepts of “intermediaries” help us map out the complex interactions of relations involved in the innovation process. The concept of “intermediaries” seeks to explain the crucial role certain players have in bridging the “generic” technological offerings and consumers’ appropriation by configuring technologies to make them relevant to consumers. The significance of intermediaries is their ability to make the constellations happen. Their roles are twofold: first, they play an enabling role for the service by, for example, lowering barriers to

access and reducing costs, which is crucial to including non-specialist users. Secondly, they play a crucial role in the services' inclusion by refining and developing new productions. The crucial traits that intermediaries require in order to make intermediation successful range from the ability to mobilise knowledge and resources to the capacity to cross different spaces and different knowledge communities. By positioning themselves to acquire "know-who" (knowing the right people), they can exert an influence on future markets and reputation-building.

What is critical for understanding the importance of intermediaries is the specificity and localisation of Social Learning processes. Williams, Stewart and Slack (2005) define this as "translation terrain", which refers to "the immediate array of players with their historical and contingent concerns and capabilities, each trying to map out their strategy in interaction with other players and in the light of their broader social, economic and cultural setting" (Williams, Stewart and Slack 2005, 86). What this signifies is the intermediaries' ability to make different constructions of opportunities in relation to specific local settings. Although digital media are often associated with universal applicability, the crucial aspect of making technologies relevant and attractive to consumers is a sufficient understanding of particular local settings. Successful intermediaries not only acquire particular experience, but also apply their learning experience in other settings. This process is highly reflexive because the trajectory of technological development is hardly predefined. The complexity of interaction and challenges arising in the process of technological development require intermediaries to negotiate and navigate choices in a changing context. To overcome the uncertainty involved in innovation and the role of innovation intermediaries in offsetting these, Nicoll (2000) emphasised their ability to build an internal sociotechnical constituency by mobilising the necessary resources and configuring users' demands.

Networked multimedia applications typically require a diverse range of resources and knowledge from infrastructure for content distribution to information about the user context (Williams 2000). Multimedia developments therefore often require mediation amongst a range of actors. The Social Learning approach therefore seeks to address the complexity of interactions amongst a wide range of players and between different phases and the broader institutional settings through the multi-layered model (Sørensen

and Levold 1992). In a large-scale technological system, institutional arrangements involved in technological innovation require intermediaries who can build inter-organisational systems. Social Learning's particular emphasis on the "meso-level" of interactions between organisations help this study to look at the process of intermediation through which varying kinds of supply are distributed, used and appropriated.

Technological innovation in the recording industry entails the complex interplay of a diverse array of factors such as digital technology, copyright regulation and conflicting interests between heterogeneous players such as labels, other intermediaries, music consumers and artists. The extended focus of enquiry of the Social Learning approach is deemed to be the best framework to observe the multiplicity of locales of innovation and the entire circle of the innovation process, through which diverging interests, motivations and power are negotiated.

2.2.4 Social Shaping of Business Models

Since Napster disrupted the logic of the conventional recording industry embedded in trading physical artefacts, a myriad of initiatives ensued that combined, through trial and error, to build a commercially viable business model in digital music networks. Understanding the disruption of the digital recording industry therefore requires us to explore not just changes in distribution technologies but also changes in business models. The discussion of business models has so far largely been dominated by 'strategic management' writers from business schools. In this section, this study will critically examine the existing discussion of business models and propose new and better ways to understand these models by taking account of the tradition of the Social Shaping of Technology and Social Learning perspectives.

1) Business Models as Calculations

Understanding the value chain of the firm has been the central focus of academic approaches to understanding business models. Value chain analysis postulates the value-

creating logic in business models. Porter's (1980) value chain framework signalled the commencement of understanding how firms achieve competitive advantage by differentiating their product or service in value-adding processes. This framework has widely been used to analyse the areas in which a firm should focus on to achieve competitive advantage in the market and to remain viable over a long period of time. Amit and Zott (2001), for example, consider value creation as a crucial element of business models and innovation. They define business models as depicting "the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities" (Amit and Zott 2001, 511). Value capture refers to the ways that value is delivered and monetised. Presupposing that other player's behaviours can be anticipated adequately and that it is straightforward to bring the other players in alignment with the plans, this approach conceptualises business models as emerging through an essentially rational calculative process. Their chief concern has been to identify archetypal characteristics that constitute a template of the way a firm operates and creates value for the parties involved (Zott and Amit 2010).

Identifying the central components of firms' logic has been another major focus in understanding business models. The core logic of a firm is understood to be to achieve competitive advantage and maximise profit. Shafer, Smith and Linder (2005) explain, "Core logic suggests that a properly crafted business model helps articulate and make explicit key assumptions about cause-and-effect relationships and the internal consistency of strategic choices" (Shafer, Smith and Linder 2005, 202). Osterwalder, Pigneur and Tucci (2005) argue that a business model is a simplified description of the way a firm's business logic works to provide value to customers and create financial gains. The importance of this concept, they argue, lies in its function of readying a firm for future innovation through the process of business model simulation. Likewise, Morris et al. (2006) indicate that a business model represents the dominant logic for the way a firm answers the critical questions of their business strategies. Therefore, from their perspective, a business model constitutes the essential part of a firm's competitive advantage, while a business model framework captures the crucial elements of decision variables and works as a vehicle to advance future innovation.

Some studies from the business school tradition have elaborated on ways to take into account a wide range of factors interconnected with business model innovations. Normann and Ramírez (1993) criticise the narrow scope of the business model as defined by the concept of value chain, and develop a concept of value constellation. Business models characterised by the value chain, they argue, explain a limited set of goals focused on “the right value-adding” strategies, and do not sufficiently capture the diverse domain of business activities. Drawing upon the fact that successful business innovation moves beyond the immediate boundaries of the business system, the idea of value constellation explains how actors reconfigure their roles, relationships and structures to reposition themselves in new ways of creating value. Stabell and Fjeldstad (1998) explain a similar viewpoint using the notion of value networks. Distinct from value chains, which represent sequential relationships within the value system through which value is added in each step away from the previous chain, value networks capture the contingent nature of industrial development and the complex constellation of value creating networking context.

“[Value networks] form coproducing layers of mediators where one network may use a lower-level network as a subnetwork...[and] horizontal interconnected value systems of similar firms that extend the scope of the network by virtual merger to gain mutual benefits from network externalities” (Stabell and Fjeldstad 1998, 435).

2) Processual Business Model Design

Some academics have sought to question the dominant analytical approaches to understanding business models as arising from rational calculative processes. For example, Cyert and March (1963) criticised the then prevalent idea that firms make optimal decisions to produce maximum profit, and instead argued that firms are constrained by limitations of information and calculations. They therefore advocate a more procedural understanding of how firms operate. Their view is that this “bounded rationality” makes it difficult or impossible for firms to make optimal decisions. Firms are also faced with imperfect environmental matching, which creates tremendous uncertainty in the speed and direction of firms’ development. The multiplicity of

interests involved in the operation of the firm also creates conflict amongst groups and individuals, which cannot always be resolved. Business models are therefore shaped in a process where multiple interests are therefore continually negotiated and renegotiated.

A similar view is expressed by Mintzberg (1987), who critiqued the approach that assumes deliberate calculations can materialise for disregarding the complex and contingent social and political processes involved in formulating and implementing management strategies. He developed a multi-pronged 5-P model: plan, ploy, pattern, position and perspective, and suggested that management strategies are refined through the process of “crafting”, which requires continuous feedback and adaptive learning, just as a potter learns to shape her clay using tacit knowledge gained by puddling and tinkering mud. He critiques the concept of strategic planning as based on three false assumptions: that prediction is possible, that strategies can be developed detached from the subjects and that strategy processes can be formalised. He emphasises that strategic thinking can hardly be developed as planned or be predicted precisely, and that the detached approach often overlooks the rich account of the process and therefore misses important nuances. Strategy-making, he argues, develops through “messy processes of informal learning”, which involve sophisticated and subtle human engagement with specific issues. Far from being conceived precisely, strategic thinking requires creativity, intuition and synthesis, which develop through a process of learning. Learning is typically serendipitous, in that inadvertent patterns arise in the process of discovering new perspectives and new combinations.

In this context, business models are “emergent”, formed in the process of refining and elaborating on the way the business operates (Mintzberg and Waters 1985). Visions can only provide a general direction, which leaves much scope for adaptation; the detailed process of business emerges en route. Underpinning emergent strategy is the process of learning what works and what does not in the market, which is difficult to fully conceive at the outset, and is thus subject to change. Openness therefore becomes the key to business strategy, which enables firms to respond to emerging changes for more cooperated and convergent actions.

Many other studies share the view that business models are developed over time in the

process. Chesbrough (2010) stresses that a successful business model is not fully formed from the outset but is developed through a process of trial and error.

“Business model innovation is not a matter of superior foresight *ex ante* – rather, it requires significant trial and error, and quite a bit of adaptation *ex post*” (Chesbrough 2010, 356).

Emphasising the need to overcome the cognitive barrier to business model experimentation, he suggests three ways to experiment with alternative business models: configuring elements of a business model by constructing maps of “component business modelling” to simulate various possibilities, employing discovery-driven planning (Mcgrath and Macmillan 1995) and evaluating key economic assumptions, creating new data and adopting an effectual attitude to develop new actions based on previous experiments.

Sosna, Treviño-Rodríguez and Velamuri (2010) provide an empirical analysis in this context. They undertake a longitudinal case study of the Naturehouse, a Spanish dietary supplement shop, and identify two central components of the way a firm survives a crisis and achieves business model innovation: trial and error of business model experimentation and the use of the entrepreneur’s character, knowledge and prowess to influence the business model innovation. Underpinning this finding are the uncertain external conditions and contingencies that a firm must learn in order to refine and adapt the model continuously to ensure that the value creation is sustainable, robust and scalable. Moving beyond the business model conceptualisation and implementation, this research contributes to understanding the dynamic perspective on business model building. Cavalcante et al. (2011) also understand the business model at the abstract level as changing a firm’s core repeated processes, and argue that: (1) the central components of a firm’s business model vary from company to company, each of which presents core repeated processes; and (2) change initiatives affect specific components of a firm’s business model, with challenges to overcome accordingly. Drawing upon this concept, Cavalcante (2014) suggests a process-based design as a tool for planning business model change. As a strategic analytical artefact, this process-based design is composed of three phases: (1) identifying the central component and the core repeated processes of the

business; (2) describing the change initiative and the impact on the core processes; and (3) analysing the main challenges and solutions to them. He argues that this process-based design allows an ex ante analysis of challenges that a company could face, and to explore alternative scenarios of change, therefore changing the business model over time in an ongoing reflective manner.

3) Business Models from a sociological perspective

A growing body of work on business models is gradually shifting from a rationalist and often normative approach to a more sophisticated sociologically-informed understanding of business models. Doganova and Eyquem-Renault (2009) define business models as a device to achieve what they describe in the business proposal. As a future-oriented tool, business models in this context are viewed as a device of persuasion to create alignment between the internal entrepreneurs' securing of commitments and the external players' investment. Displayed in the form of exhibiting something to present as a PowerPoint or business plan to potential investors, business models operate as "narratives to convince". By propelling the encounter of these two players, they argue, business models operate as a demonstration of value, linking entrepreneurs' value propositions and investors' appraisals. This draws upon heuristics advocated by Callon and Muniesa (2005) and emphasises how valuations are not a fixed concept but are constructed in a constantly changing market. Doganova (2012) describes this process as "orchestration" and "choreography", in which business models are configured according to a series of "matching, paring, and partnering". Following the encounter, the business model becomes a calculative or capitalisation device, enabling entrepreneurs to find new markets and new ventures. As scale models – miniature representations of a future outlook with which one can experiment – business models present the details of the business including main activities, targeted customers and future partnerships. In the process of circulation, business models play a performative role by enabling the building of new relationships through which the present products turn into prospective business. In contrast to the idea that business models should function to describe accuracy and usefulness, the authors argue that the business model demonstrates the "asset-becoming process: a process through which

something becomes an object of investment.” Then, as role models, business models can be imitated.

This approach has strong resonance with Baden-Fuller and Morgan (2010), who conceptualise business models as “ideal types” that can be formulated as a typology. They argue that although business models are not homologous, neither are they completely different. They suggest that this “in-between” quality of business models can provide a set of general level descriptions: “as exemplar role models that might be copied, or presented as nutshell descriptions of a business organization: simplified, short-hand descriptions equivalent to scale models...not only as capturing the characteristics of observed kinds in the world (within a taxonomy), but also as abstract ideal types (in a typology)” (Baden-Fuller and Morgan 2010, 167). The typology of business models, they suggest, could be achieved by extrapolating common features that depict the archetypes of the way firms create and capture value. Two practical ways are proposed to model the business model: scientific model and recipes. The scientific model refers to the model as functioning as a biology organism, which represents “a class of things” and serves as “real-life examples to study”. They argue this is particularly useful for making the business model “performative” and “reflexive” and therefore contributes to producing an ideal outcome. Business models as recipes can be used to give instructions on “how to do something *so that the results will come out right*” (Baden-Fuller and Morgan 2010, 166, emphasis in original).” As the ideal recipes have already been tested and proven in real life, they can be used to replicate the success with the basic recipe intact. Recipes can also be used to build a new business model with great variations and innovation, just as a chef can create an entirely new dish by arranging and combining existing recipes. The four core ingredients of the recipes are: customer identification, customer engagement, value delivery and monetisation (Charles Baden-Fuller and Haefliger 2013). Mikhalkina and Cabantous (2015) further developed this in order to identify how a certain business model can become an iconic model for other firms to take as a benchmark and to demonstrate how successful models can subsequently become institutionalised.

4) Social Shaping of Business Models

Drawing upon the framework of SST and the Social Learning approach, this study will examine the processual shaping of business models in which multiple forms of interests and visions are aligned through trial and error learning and negotiation. Through SST's focus on choices over time and Social Learning's framework of reflexive efforts to link the supply and use of technology, this study suggests the concept of "social shaping of business models" as a new method to describe the emergent process of business strategy-making in which business strategies emerge en route in the process of technologies being appropriated and domesticated in the market.¹

A few key concepts upon which this research has drawn are as follows:

Radical technological change would both allow very different ways of meeting user needs and lead to the creation of new markets. The gulf between people's everyday use of digital technology and the supply has created uncertainties about which products will be attractive to consumers or commercially viable. However, information about future users can hardly be comprehensive. It is especially difficult to prefigure users' needs with radical technologies, as there is little information about existing users. Since Napster propagated radical change in music consumption, it has become particularly difficult to comprehend users' requirements. With the ability to withhold their willingness to pay, users exerted considerable power to direct, reorient and shape the business model. The contribution that users make to business models in the digital recording industry, however, has rarely received adequate attention.

Social Shaping of Business Models attempts to provide a processual shaping of business models in which societal requirements and technological capabilities are coupled together. Drawing upon the Social Learning approach, it emphasises an understanding of how the process of users' appropriation or domestication of technologies is interweaved in the configuration of business models. A crucial concept of this framework is "innofusion", explaining how innovation in the process of an artefact is

¹ This framework was first used by Williams to investigate emergent sociotechnical changes in the digital economic environments for a research project, "The Copyright Hub and the emerging IP infrastructure" (meeting notes on 1 May 2014). As part of this thesis contributes to this research project, Williams suggested that Social Shaping of Business Models be linked to understanding the evolution of digital music services.

appropriated and domesticated (Fleck 1988). The interplay between solutions and users underscores the process in which solutions are implemented, used and useful in the technical and social contexts. In other words, a technology has to be encultured in a particular circumstance for consumers to make sense of it (Lie and Sørensen 1996; Silverstone and Hirsch 1992). The “interpretive flexibility” (Pinch and Bijker 1984) of the technology and choices users can exert in making the final decisions about the business model highlights the ultimate power that remains in the hands of users for the successful innovation of the business model. Social Shaping of Business Models, therefore, conceives business models as configurational. In the process of “configuring the users” in relation to complex and constantly changing users’ requirements, business models are discovered, refined and perfected. Business models, therefore, are not fully-formed from the outset, but instead shaped through constant reflexive activities over a long-term process of innovation from design and implementation to use of technology.

The exploitation of copyright has proven to be crucial to the success of the music business (Bettig 1996; Frith 1987; Negus 1992; Litman 2001; Towse 2004). To understand business models in the recording industry, it is important to capture the way business models evolve in relation to copyright regulations, expectations and visions amongst various players. The concept of “learning by regulating” (Sørensen 1996) is useful to capture the associated sets of rules and the way players realign their motivations, visions and expectations in broader contexts. It unfolds through two associated types of Social Learning: learning by doing, through which “trial and error” and linkages between users and suppliers are achieved; and companies reconfiguring their business model through the relationship informed by feedback from consumers, who slowly find meanings in technologies. Over the course of this iterative process, business models morph into something different from the initial design.

The complexity of goals and interests and the various exigencies involved in the process of innovation render the trajectory of technological developments uneven. The proliferation of trials and error carried out in the digital recording market underpins the unpredictability of outcomes and the complexity of interactions around the development and use of the technology. The heterogeneous players and different powers and interests involved in the development process require us to move beyond

the simplistic model (Sørensen and Williams 2002). Social Shaping of Business Models analyses business models in a broader context that includes a wide range of factors influencing the shaping of business models. It emphasises that business models are not snapshots divorced from precedent, subsequent developments or social contexts, but are deemed parts of innovation across multiple cycles of business development taking place in a “constellation” that constitutes a complete dynamic of technological innovation. In this context, business models are heterogeneous (Law 1987) and subject to negotiation amongst players of divergent motivations, interest and power.

The business of the recording industry is composed of diverse actors with different, often conflicting, interests and ideas. Thereby, the full constellation of the recording business goes far beyond the key factor, one influential entrepreneur or the legal infrastructure as predominantly discussed. It should be understood in the context of value networks, in which the contested power relationship competes and negotiates to establish a dominant business model to match their own interests. To capture the contingent nature of industrial development and the complex constellation of value creating networking context, Social Shaping of Business Models resorts to the concept of “socio-technical constellation” (Williams, Stewart and Slack 2005), which has resonance with value network analysis (Stabell and Fjeldstad 1998) and the concept of value constellation (Normann and Ramírez 1993).

2.3 Research Design and Methodology

This section describes how the research framework has guided the methodology for this study and how the research was designed. After reviewing the theoretical concepts that have inspired this study, it explains the choice of research strategy, why case study was deemed appropriate for this study and how the cases were selected. This is followed by data collection and analysis.

2.3.1 Conceptual framework and Research Strategy

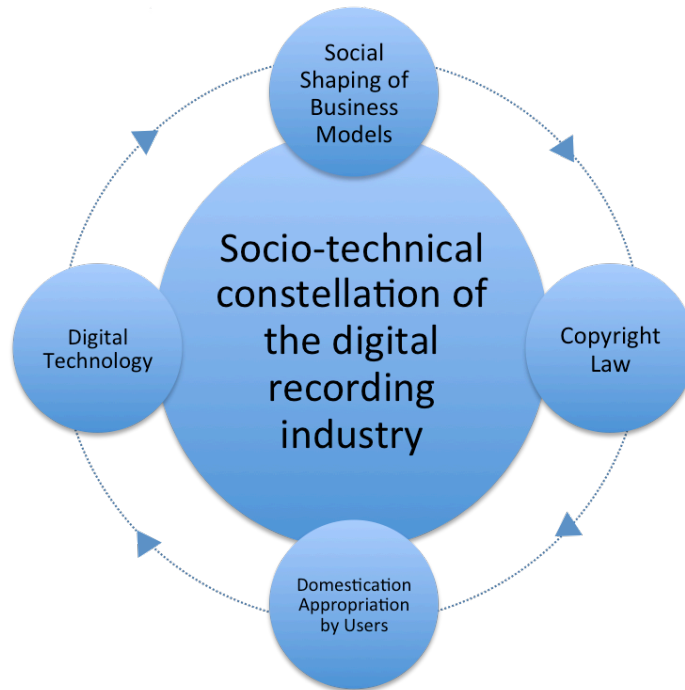
1) Conceptual Framework

The overarching theoretical framework that has guided this study is composed of two, related STS traditions: the Social Shaping of Technology (MacKenzie and Wajcman 1985; Williams and Edge 1996) (“SST”) and Social Learning in Technological Innovation (Sørensen 1996; Williams, Stewart and Slack 2005) perspectives. SST has come to understand technological development as a heterogeneous and dispersed process. The SST perspective guided this study to examine the detailed process of innovation and the uptake of a particular digital technology in the recording industry. The detailed case studies emphasised by SST, as well as its broader scope of research, served as a useful framework for investigating a multifaceted intertwining of choices involved in designing and developing technologies in heterogeneous networks. The Social Learning framework guided this study to investigate the gradual process of technological change and the reflexive efforts made by actors responding to changing circumstances.

The innovation of the digital recording industry is highly complex, arising from the interplay of a wide-ranging collection of actors and factors. The complexity, contingency and uncertainty involved in the process of innovation in the recording industry typically make the process of technological development unpredictable and protracted. To capture this complexity of choice and multiple uncertainty, a conceptual framework was

drawn up, which allows us to explore the multiplicity of actors and sites of innovation in the digital recording industry.

Figure 1. Framework for the Study of Digital Disruption in the Recording Industry



The investigation is centred around the “socio-technical constellation” (Williams, Stewart and Slack 2005), which enabled this study to examine the circuit of the innovation process in which heterogeneous players struggled to stabilise their location in relation to a changing environment. By enabling us to understand the complex networks linking heterogeneous and loose connections, this notion allows us to examine the complexity of interactions that is subject to negotiation amongst players with divergent motivations, interests and power. In understanding the constellation of the digital recording industry, this study identified four major factors: digital technology, copyright law, users and business models. This research framework allows the study to capture the interrelations and the interdependencies of a wide range of actors involved in the innovation, as well as providing a detailed understanding of the way diverging expectations, visions, sets of rules and interests are aligned in the process of innovation.

While assessing the role of copyright is essential to understand the digital recording industry, current scholarship has so far paid a great deal of attention to the law's impact on the market. Drawing upon Sørensen's (1996) concept of "learning by regulating", this study explores the process of innovation in relation to copyright regulations, expectations and visions amongst various players. To understand users' role in the innovation of the digital recording industry, this study has explored the process by which certain technologies are appropriated and domesticated in the market and the crucial role users contributed to the uptake of digital music services. This study also drew upon the SST and related Social Learning approaches as a framework to give a better understanding of the processes by which business models evolved. Exploiting SST's focus on the choices over time, and the Social Learning framework's focus on reflexive efforts to link the supply and use of the technology, this study suggests the concept of "Social Shaping of Business Models" as a new method to describe the emergent process of business strategy-making in which business strategies emerge in the processes through which technologies are appropriated and domesticated in the market.

For a more practical guideline of the constellation of the digital recording industry, this study drew upon Leyshon's (2001) concept of networks of music economy and Hennion's (1989) mediation. Leyshon's (2001) framework is useful for depicting the complex relationship amongst heterogeneous forces and the blurred interaction among the four major networks in the music industry. Drawing upon this framework, this research demonstrates how these networks are undergoing changes in the digital era. Hennion's (1989) concept of mediation guided this research to explore a comprehensive analysis of the interaction and intermingling of the diverse actors across the entire network of the digital recording industry.

2) Research Strategy

(1) Qualitative Research - Case Study

The digital recording industry has predominantly been studied by legal scholars whose main concern is focused on law's impact on the industry. The primary purpose of this study is to move beyond this prevailing account and provide a rich account of the

innovation process through which a diverse array of interests, motivations and visions involved in the development of digital technology have been reconfigured in the recording industry.

In considering our research strategy, we concluded that the complexity of the innovation process in the digital recording industry can better be discovered through qualitative rather than quantitative research methods, which aim to measure concepts, establish causality and produce replicable findings (Blaikie 2009). As Miles and Huberman (1984) point out:

“[One] feature of qualitative data is their richness and holism, with strong potential for revealing complexity; such data provide ‘thick descriptions’ that are vivid, nested in a real context, and have a ring of truth that has strong impact on the reader” (Miles and Huberman 1984, 10).

The emphasis of a qualitative study is placed on a specific case through which “lived experiences” are tapped are fundamentally well-suited for locating the meanings that people place on the events, processes and structures of their lives: their “perceptions, assumptions, prejudgments, presuppositions” (Van Manen 1990). This study therefore employed the case study methods, which are widely used to understand the complexity of the case in question (Stake 1995). Whereas experiments and histories may also be useful to clarify the ambivalence of certain phenomena, a case study is preferred in examining the contextual conditions of a complex set of contemporary events over which an investigator has little or no control (Yin 2009). A case study might not provide a basis for statistical generalisation. However, by addressing the uniqueness of the situation through in-depth observation, it can provide the basis for an analytic generalisation (Yin 2009). Its detailed mechanism also allows researchers to draw empirical evidence to support the theory (Blaikie 2009).

As such, many researchers from the tradition of SST have turned to case studies to draw analytic generalisations from single or multiple case studies. The detailed and rich account of a case study has particularly appealed to many scholars of SST in addressing the divergent choices made in the process of innovation through which negotiation

takes place in specific settings. This thesis also resorts to a case study methodology in order to demonstrate a detailed innovation process through which the alignment of different interests and negotiation power amongst diverse arrays of actors has influenced the development of digital technology in the recording industry.

(2) Case Selection

While a single case study is appropriate for a clear, extreme or unique case, multiple cases can be compelling when the cases replicate similar or contrasting results (Yin 2009). This study originally intended to provide a rich account of the evolution of digital music services through the single case of Spotify. As Creswell (2007) pointed out, qualitative research often follows an “emergent design” in which the direction of research may change or shift over the course of the data collection process. This was especially the case in the study of Spotify, which involved studying “business elites” which have been known to be “the most difficult settings for gaining access for social scientists” (Hertz and Imber 1995). Bearing in mind that much of the case selection might be subject to problems with securing access, this research initially examined 12 case studies as candidate studies. These were identified in the initial scoping stage of this research, which sought to map out the sector, any salient issues arising and the players, drawing upon published literature and expert opinion. In selecting the cases, I referred to two then-current industry reports, “The digital music industry outlook” by Business Insights and “Digital Music Report 2012” by IFPI, and one conference report, “Midem conference 2012”. “The digital music industry outlook” offered guidance on the major players of the digital music service in the UK. The “Digital Music Report 2012” was helpful in considering the major trends and changes in the music industry and the worldwide outreach situations. The “Midem conference 2012” report provided a good guide to previous conference speakers and attendees. These reports, as well as existing academic literature and news articles, suggested 12 candidate case studies: iTunes, YouTube, Spotify, Grooveshark, 7 Digital, We7, Live Nation, SoundCloud, Last.fm, Shazam, Jamendo and BitTorrent.

In the process of fieldwork, which is described in the following section, access was one of the factors that shifted the research design of this study from a single case to multiple

cases. As anticipated, gaining access to Spotify was difficult at the initial stage of data collection. As the fastest growing digital music service provider, Spotify was particularly cautious about the company's image and maintained strict public relations guidelines, which presented a formidable barrier to an international Ph.D. student. Although this challenge was overcome over time, I had in the interim secured an internship at INgrooves, a distribution company. This research experienced changes in direction as a result of access considerations. Changing research design due to access availability is not uncommon in social science research, and the obstacle of altering the research design can be turned into an advantage (Arksey and Knight 1999). At that stage I had already come to see distribution as having a considerable significance to the recording industry: Napster's largest impact was on the distribution networks, and the control of distribution was essential in overcoming the uncertainty and risk involved in the production of music in the conventional recording business. However, its full implication did not strike me until I began my internship and my understanding of the recording industry developed to a greater degree through interviews with various players. Considering the significance Spotify has to the change, this study retained the original plan to use it as a case study. As a result, the research design shifted from a single case study to the multiple case studies of Spotify and INgrooves – two leading players, with different locations in the newly emerging digital recording industry.

The trade-off between depth and breadth is one of the factors to consider in an efficient research design. If a research design stresses depth, a broader range of experiences can be explored, while studies that focus on breadth cover larger samples but can only investigate a narrower range of experiences (Patton 2001). The breadth of research concerns for this study suggested the need for a broad ranging investigation of the industry to trace the complex and interlinked relationships amongst heterogeneous players, in a context in which only the limited resources and time were available for this doctoral research. This thesis therefore had to trade depth for breadth. An in-depth single case study would have acquired a richer understanding of the innovation process involved in the technological development of a particular digital music service. As the study progressed, it became increasingly clear that an insight into the processes of the reconfiguration in two important networks of the recording industry – distribution and service – could provide an excellent, albeit not planned, option for exploring the whole

innovation process of the digital recording industry. The research design that emerged as a result of a combination of strategic planning and pragmatic opportunism surrounding research access allowed the research to acquire understandings of the evolution of the digital music industry from two different “viewpoints” (Williams and Pollock 2012). Different viewpoints in a sector can be a set of heuristics to explore important sites of technological development arise over time over multiple locations in a broader context (Pollock 2009; Hyysalo 2010; Williams and Pollock 2012). Triangulating between these provided the basis for a richer and more robust understanding of developments and the way these were negotiated amongst an array of players in diverse and changing locations in the sector.

2.3.2 Data Collection and Analysis

1) Fieldwork and Gaining Access

Data collection was conducted over an extended period from January 2013 to May 2014. Fieldwork can roughly be divided into three phases: (1) Initial stage to gather general information, to map players and potential case-study sites and develop contacts in the digital recording industry (January – May 2013), (2) Intensive fieldwork when I had a work placement and conducted considerable number of interviews (June - August 2013), and (3) Additional interviews conducted to address research questions and issues that remained unanswered (September 2013 – May 2014).

For the first phase of the fieldwork, the aim of the data collection was to cover a wide range of entrepreneurs in order to obtain a general understanding of the recording industry. To that end, Midem, the largest European annual music industry conference held in Cannes, France, was deemed an appropriate place to begin the fieldwork. During three days’ attendance from 27-29 January 2013, 12 formal interviews were conducted. Through this fieldwork, substantial information about the general situation of the contemporary digital recording industry was acquired. In early 2013, when this fieldwork was conducted, there was a noticeable optimism about the future of the recording industry prompted by increasing digital music revenues, and a growing awareness that

streaming/subscription based digital music would be an important destination for digital music consumption. Interviews with players from four digital music service providers, Spotify, Deezer, Jamendo and Samsung Music Hub, produced a significant understanding of the shaping of digital music services. The interview with Phonofile, a Norwegian digital music distribution company, provided important insights into reintermediation.

To further investigate processes of reintermediation, my next step in fieldwork focused on the independent music scene during my visit to New York. Interviews with independent music players during this fieldwork produced insights into the challenges, opportunities, negotiation processes and changing relationships with other relevant players. Although these interviews produced substantial information about new changes emerging in the recording industry, as per supervisors' guidance, a more in-depth investigation was required.

The next period of fieldwork took place at the Great Escape, one of the major British music festivals, from 16-18 May 2013 in Brighton, UK. This fieldwork was focused on new intermediaries, such as Direct-to-Fan (D2F) companies, distributors and independent music blogs. One of the interviewees during this fieldwork was Alex Branson, SVP at INgrooves. He offered me an internship during the summer of 2013. Around the same time, I was offered a working opportunity at Samsung Music Hub. Considering the significance of distribution in the music industry, as well as the guidance of my supervisors, INgrooves was selected for fieldwork.

My work placement at INgrooves lasted from July to September 2013. During this time, my responsibility involved data management: entering album catalogue data into the INgrooves' digital music distribution platform. This work placement gained me significant insight into the inside knowledge of the recording industry. Direct access to this digital music distribution platform allowed me to acquire the technical and practical knowledge required for digital music distribution. The internship also made it easier to obtain access to interview members of the INgrooves team, most of whom otherwise would have been difficult to reach. Interviews with at least one person in each department of the company allowed a very rich understanding to be developed of a

company. The informal interactions with entrepreneurs through industry social events, such as Young Guns Networks at Spotify and a SoundCloud rooftop party, allowed me to obtain an insider's familiarity with the field.

During my stay in London for the internship at INgrooves, I was also fortunate to have access to quite a few well-known music executives. This happened fortuitously when I went to a Saturday Record Fair at Old Spitalfields Market. There I met James Farrelly, then a membership manager at the Association of Independent Music (AIM). His introduction to top executives at independent music companies enabled me to obtain rich data on the intricate dynamics of the independent music arena. Through "snowball sampling" (Biernacki and Waldorf 1981), I gained chain referrals to other relevant entrepreneurs, some of whom would otherwise have been hard-to-reach.

Having acquired a wealth of data to demonstrate the multiplicity of visions and interests involved in the innovation process of the digital recording industry, as well as in-depth information on the digital music distribution networks, I had only one field left that required more exploration – Spotify. The obstacles to gaining access to Spotify were slowly overcome with the help of other significant connections I made during my research. After coming back from the fieldwork, I began to work for a research project independent of my Ph.D. I worked as a research assistant for "Historical Analysis of the Role of Copyright in Music Publishing", one of the projects funded by CREATE, the RCUK Centre for Copyright and New Business Models in the Creative Economy. Through this project, I deepened my understanding of copyright in relation to the music business and was also introduced to Will Page, a Director of Economics at Spotify, by Prof. Ruth Towse, the principal investigator of the research project. With the help of my supervisor, Prof. Robin Williams' personal connection, at the beginning of my Ph.D, I also gained access to interview David Whittle, who was the first interviewee of my pilot study about his role as Director of User Analysis at Last.fm, who later moved to Spotify. As the transcription and data analysis were progressing, two additional rounds of data collection were conducted. At Wide Days, Scotland's music convention held in Edinburgh from 9-10th April, 2014, I did a few follow-up interviews to address the questions that still remained unanswered. I finished my fieldwork with a few interviews with employees at Spotify, both in London and Stockholm in May 2014.

2) Interviews and Documentations

- Semi-structured Interviews

Qualitative interviews are appropriate for research that seeks to discover a comprehensive account of a particular phenomenon and the meaning of specific situations and events perceived by participants (Brinkmann and Kvale 2015). Semi-structured interviews are the most commonly used interview format in social research (Arksey and Knight 1999). As an in-between approach between a structured interview and unstructured interview, a semi-structured interview seeks to obtain information about a specific agenda following an interview guide of a less formal structure. Most interviews were conducted face-to-face on a semi-structured basis to ensure flexibility in replies and topics covered. For a small number of interviewees, I conducted online interviews using Skype. As the Skype interviews were also conducted on a real-time, sometimes face-to-face basis, both types of interviews therefore followed a similar format.

The overall interview schedule of questions that guided this study encompassed a number of areas: (1) interviewees' personal history and role; (2) history of the company including challenges and opportunities the company experienced in the digital age; and (3) opinions on the recording industry in general. The loosely structured interviews allowed for flexibility in exploring questions the researcher regarded most appropriate to ask and also the opportunity to ask for clarification. At the same time, it allowed informants the freedom to discuss an agenda they perceived to be more important or relevant. In conjunction with the general guidelines of the interviews constructed for the research design, interview questions were customised for each interviewee. Many of the interviewees of this research were "business elites" or top corporate executives, who had a tendency to speak on behalf of the company for which they worked. This might result in interviews simply producing "official views" (though these can be obtained through other means, for example corporate press statements or annual reports) (Hertz and Imber 1995). However, music entrepreneurs, most of who have a greater level of understanding of or passion for music than the majority of average music consumers, also tend to have strong opinions about certain subjects in which they have a great

interest. Therefore, in preparing interview questions, particular attention was paid to ensuring that the personas of each individual were sufficiently addressed.

Table 1. Guideline to Interview Questions

Stages	Questions
Introduction / Personal Background	<ul style="list-style-type: none"> - Introduction to the interview and the research purpose - Tell me your background and responsibilities at your company
Company Profile	<ul style="list-style-type: none"> - A brief history of your company <ul style="list-style-type: none"> • How did it start and how has it evolved? - Experiences in relation to digital technology <ul style="list-style-type: none"> • What opportunities and challenges has the company experienced in the digital era? • How has the business evolved in relation to the changes arose in the digital era? • What factors did the company take into account in addressing the problems emerged in the digital era?
Recording Industry in general	<ul style="list-style-type: none"> - How do you evaluate the current state of the recording industry, and where do you think it is going in the next 3-5 years?

- Documentation

In parallel with the interviews, this study also relied on online resources and documents for additional data collection. These sources were crucial for this research for two important reasons. First, they provided vital foreground to increase the reliability of the methods by triangulating the data (Yin 2009; Blaikie 2009). Secondly, they were a great source for making up for questions not addressed by the interviews and obtaining greater completeness (Arksey and Knight 1999). Documentation was particularly helpful to supplement the information that was not directly obtainable, for example, the voice of major labels and the earlier stories of the industry and interviews with important

industry figures such as Steve Jobs, the CEO of iTunes, and Daniel Ek, the CEO of Spotify. Major labels tend to be vociferous in defending their interests. Industry reports and industry news provided ample material to fill in the information required². In the case of top elites in large corporations, they are used to speaking in public and dealing with the press, and therefore sometimes give ready-made answers in interviews (Thomas 1995). In very few instances, such as a “questionnaire with unobtrusive, non-reactive measures” (Blaikie 2009, 262)’ that did not require respondents’ collaboration, other forms of data collection were employed to supplement the interviews. The resources included industry reports such as IFPI’s Digital Music Reports and MIDiA Research Reports, industry blogs such as Hypebot, Digital Music News, MusicAlly and Pitchfork, and industry news sites such as Billboard and Music Week.

3) Data Analysis

- Transcription

For the first phase of the fieldwork, I transcribed most of the interviews on my own. It allowed me to become familiar with the interviews. During my fieldwork in London, however, I undertook many interviews in a short period of time. I was also occupied with the daily work at INgrooves. Realising it would be very time-consuming to transcribe all the interviews, I relied on professional help to transcribe these interviews and reviewed them afterwards to check for accuracy.

- Data Analysis

For data analysis, this study followed an “interactive model” through which the process of data collection, reduction, display and conclusion drawing/verifying was conducted in multiple iterations (Miles and Huberman 1984). The transcribed data was coded under a few categories crafted to sort similar phrases, patterns, commonalities and differences, arising from the literature review and research questions, in NVivo. The detailed top categories are illustrated in Figure 2.2: Aggregators, Artists, Consumers,

² It was particularly prominent in dystopian views of the industry. See p.93-5

Labels (major players), Pre-digital situations, P2P technology, Digital Technology (digital technology), digital music service providers such as iTunes, YouTube, Last.fm, Deezer and Spotify (categorised under Business Model), Copyright and other new dynamics that emerged in the digital era (coded separately under Changing Dynamics, D2F, Reintermediation and Streaming). The coding scheme was modified to take on board phenomena not initially captured. In this process quotes were extracted which threw light (both reaffirming and also contradicting) established understandings.

Figure 2. Categories of the Data Analysis

Name ▲	Sources	Refere...	Created On	Created By
▶ ● Aggregators	7	47	18 Aug 2014 10:28	H
▶ ● Artists	15	55	11 Aug 2014 15:14	H
▶ ● Business Model	12	82	Today, 16:50	HSUN
▶ ● Changing Dynamics	10	34	Today, 15:33	HSUN
▶ ● Consumers	6	16	18 Aug 2014 17:40	H
▶ ● Copyright	7	17	11 Aug 2014 15:02	H
▶ ● D2F	7	28	11 Aug 2014 15:41	H
▶ ● Digital Technology	7	21	11 Aug 2014 15:51	H
▶ ● Labels	17	53	11 Aug 2014 15:10	H
▶ ● P2P	5	14	11 Aug 2014 12:57	H
▶ ● Pre-digital	3	5	13 Aug 2014 17:42	H
▶ ● Promotion	12	88	18 Dec 2014 12:42	HSUN
▶ ● Reintermediation	3	8	18 Aug 2014 10:27	H
▶ ● Streaming	10	43	11 Aug 2014 13:01	H

Reflections and other remarks were added in a separate interview note specified per interviewee. The interview note was very useful for elaborating the theme of the data, developing ideas and discussing the data with supervisors. The analysis of interviews, in conjunction with the review of relevant documents and online resources, produced a new landscape of the digital recording industry that departed from the initial prediction of the industry. This will be discussed in detail in the following chapters.

Table 2. List of Interviewees³

No	Company	Name	Position	Category	Duration
1	Last.fm	David Whittle	Director of User Experience	DSP	67:34
2	Cash Music	Jesse von Doom	Founder	D2F	54:00
3	Creative Commons	Eric Steuer	Senior Advisor	NPO	48:09
4	Spotify	Sung-Kyu Choi	Global Head of Content Operation	DSP	50:33
5	Deezer	Jerome Coic	Aritsts Marketing Manager	DSP	60:12
6	Jamendo	Martin Guerber	Promotions Manager	DSP	38:58
7	Samsung	Taejin Kang	SVP at Service Planning Team	DSP	15:58
8	Phonofile	Trond Tones	Marketing Manager	Distributor	62:58
9	Fat Beats	Tyler McWilliams	Director, Sales & Marketing	Indie Label	34:21
10	Kollector	Goran Anderson	SVP, Globabl Business Development	Digital Recognition	35:55
11	Sponsr	Paul Geller	CEO (Former VP at Groovespark)	Sponsorship	37:44
12	SoundExchange	Allie Bekman	Manager, Claims Dept.	NPO	21:32
13	Kellee Maize	Kellee Maize	Rapper	Indie Artist	38:24
14	We Are FM	Joeri Postma	Bass player	Indie Artist	24:25
15	Razor and Tie	Victor Zaraya	CEO & CFO	Indie Label	35:14
16	eOne	Bill Crowley	VP	Indie Label	78:46

³ Reflecting the fast-changing business environment, there have been many changes in the interviewees' role since the time the interviews took place. Since the interviewees spoke on behalf of the companies they worked for, the study noted the interviewees' career positions at the time of the interviews.

17	KickStarter	Yancey Strickler	Co-founder	D2F	48:32
18	A2IM	Rich Bengloff	President	NPO	39:27
19	INgrooves	Alex Branson	SVP & Marketing Director	Distributor	66:46
20	Domino Recording	Jules Gilchrist	Neighbouring Rights	Indie Label	28:17
21	TopSpin	Stephen O'Reilly	Chief Marketing Officer	D2F	25:27
22	Music Glue	Joe Porn	Squadron Leader	D2F	52:08
23	The Line of Best Fit	Paul Bridgewater	Editor	Indie blog	65:39
24	PPUK	Loz Kaye	Leader	NPO	64:05
25	Spotify	Drew Lam	Label Relations Coordinator	DSP	51:06
26	INgrooves	Quentin Chambers	Int'l Director of Business Development	Distributor	47:45
27	INgrooves	Toby Peacock	Int'l Director of Label and Product Management	Distributor	54:40
28	INgrooves	Dominic Jones	Int'l Sales & Marketing Director	Distributor	58:43
29	INgrooves	Gordon Rintoul	Client Services	Distributor	69:20
30	INgrooves	Don Goss	Client Operations Manager	Distributor	71:47
31	INgrooves	Sharon Matheson	Client Services Manager	Distributor	58:10
32	The Orchard	Scott Cohen	Co-founder	Distributor	61:07
33	CI	Kieron Faller	General Manager	Distributor	102:57
34	Beggars	Simon Wheeler	Director of Strategy	Indie Label	57:29
35	Columbia / Sony	Sam Potts	Head of Radio, Columbia Records	Major Label	58:09
36	AIM	Alison Wenham	Chairman & CEO	NPO	69:13
37	INgrooves	Robb McDaniels	Founder / CEO	Distributor	41:15

38	INgrooves	David Kent	CTO	Distributor	44:33
39	LiveNation Labs	Kyle Bylin	User Researcher	Live Performance	43:27
40	Shazam	Will Mills	VP, Music & Content	Digital Recognition	24:05
41	The Orchard	Scott Cohen	Co-Founder	Distributor	26:22
42	Deezer	James Foley	Head of editorial	DSP	54:21
43	YouTube	Derk van der Woude	Music Partnerships	DSP	31:32
44	RoughTrade	Matthias Bottcher	Director, Sales & Repertoire Development	Indie Label	37:17
45	PPL	Keith Harris	Director of Performer Affairs	NPO	38:21
46	EmuBands	Stuart Stenhouse	Operations Director	Distributor	28:39
47	EmuBands	Paul Bannon	Content and Label Relations Manager	Distributor	25:24
48	Stormcrowd	Steve Machin	Founder (Former Head of Music Services for Ticketmaster Europe)	Consulting	48:23
49	Seamont Group	Chris Montgomery	President (Former CEO of MP3.com)	Consulting	57:34
50	SonyDADC	Stuart Lammiman-Hinkle	Digital Operations Manager	Distributor	52:30
51	Spotify	Rachael McSwiggan	Team Lead, Global Content	DSP	35:31
52	Spotify	Olof Carlson	Product Development	DSP	55:29
53	Spotify	David Whittle	Director of User Analysis	DSP	56:32
54	Spotify	Sung-Kyu Choi	Global Head of Content Operation	DSP	35:58
55	Piratbyrån	Rasmus Fleischer	Former Co-founder	NPO	55:28

CHAPTER 3. EXISTING LITERATURE

3.1 Introduction

The arrival of digital technology has brought about a significant change in the way music is made, distributed and consumed. The potential of the radical transformation in the recording industry has stimulated intense debates over the way this potential should be exercised or controlled. The tension that digital technology has created is most apparent in the legal world, where the boundary between commerce and creativity has remained contentious. Considerable attention so far has been paid to legal studies, which investigated how the law has responded to technologies that have been rapidly taken up within the music sector. The far-reaching changes in the recording industry are not limited to the legal arena. Many academics have also explored the implication of the changes in other sectors such as digital economy, cultural production and the underlying dynamics of business practices. Technological innovation in the recording industry entails a complex interplay of a diverse array of factors such as digital technology, copyright regulation and conflicting interests between heterogeneous players such as major labels, other intermediaries, music consumers and artists. An analysis of these complicated dynamics in the digital recording industry can hardly be carried out without building upon a review of relevant literature. Through an overview of the way the recording industry has evolved in the context of the process of economic, cultural, legal and institutional changes, this chapter explores how the dominant discourse surrounding the digital recording industry has been developed, and then identifies gaps in existing knowledge.

This chapter is composed of three parts. It begins with Section 3.2, which demonstrates how the recording industry has evolved in the framework of technological advances, Intellectual Property and organisational practices. Section 3.3 extends the view to the perspective of the entire network of the recording industry and discusses a broader range of settings for innovation and a wider array of players involved in the innovation of the recording industry. Close attention in this section is paid to illustrating how

diverse, often conflicting, interests are negotiated. To juxtapose the changes that have emerged in the digital era (which are discussed in Chapter 5), this section focuses on the dynamics in pre-digital settings. Section 3.4 looks at the existing views on the digitalisation of music in three sub-sections. First, 3.4.1 describes how the technocentric view has created a dichotomy in understanding the digital recording industry. 3.4.2 then discusses the discourse of P2P technology's impact on the market. Lastly, 3.4.3 presents a more recent discussion of the changes in the contemporary digital music industry.

3.2 Evolution of Music Technologies

3.1.1 15th – 18th Century

1) The Invention of the Printing Press

In the mid-15th century, Johannes Gutenberg, a German goldsmith, invented a movable metal type of printing press. William Caxton, a British merchant and diplomat, introduced the machine to England in 1476, and with it brought a dramatic shift in the intellectual, political and religious landscape of the West (Feather 2006). The improved literacy made possible by the proliferation of books, pamphlets and other printed materials sparked an increased demand for new printed products, and thus the number of printers and booksellers also expanded. The ease of wide dissemination combined with the newly diversified content of books, including those containing heretical and blasphemous content, reached wide audiences. Controlling the printing industry became increasingly difficult. The British government decided to bestow privilege upon Stationers' Company, a guild of stationers, to regulate the printing of books. The first of its kind was the Royal Charter granted by Philip and Mary in 1557. The protection of the business was given only to the stationers, who, in turn, were required to check every book before printing. Publishers, whose business accompanied substantial risk, welcomed this legal decision, which could guarantee the prevention of competition. They, therefore, "were to become ardent lobbyists for decrees of censorship as a means to sustain their control of the book trade" (Patterson 1968).

2) The Statute of Anne, the First Modern Copyright Law

The monopoly enabled by the aforementioned royal privilege later caused problems such as price gouging and an enormous barrier to entry. The controversy surrounding the book trade culminated in the grant of the Licensing Act of 1662, which made it illegal to publish anything without first securing a licence from the appropriate authority. It is believed to be the linear descendant of the various printing ordinances and decrees

dating back to press regulation (Rose 1993). As problems with the monopoly intensified, the government decided not to renew the act, and the perpetual right granted to the publishers ended in 1695. In order to tackle these problems, the Statute of Anne, the first modern copyright, was created in 1709. Under this act, exclusive publication was granted for 21 years on books already published, and 14 years on books yet to be published, with a one-time renewal of 14 years. When the protection duration expired, all works were to enter the public domain.

The interpretation of the original intention of this act is still subject to debate. Scholars such as Deazley (2004) and Kaplan (1966) emphasise that the primary purpose of the act was the promotion of public interest. They believe this idea is elucidated well in the preamble of the Statute of Anne, which stated its intention as “an act for preventing the frequent abuses in printing seditious treasonable and unlicensed books and pamphlets and for regulating of printing and printing presses.” As an act regulating printers in order to prevent the printing and sales of “heretical schismatical blasphemous seditious and treasonable Bookes Pamphlets and Papers”, they argue, its concern was “the encouragement of learning” through “continued production of socially useful books” (Deazley 2006). Other copyright historians, however, try not to over-emphasise its significance. Patterson (1968) states that the Statute of Anne was nothing more than a trade regulation designed to restore order in the book trade and to prevent monopoly, and that it was reinforced when the Licensing Act was not renewed in 1695. He argues that the Statute of Anne is primarily a trade regulation statute, since it is modelled after prior acts of censorship such as the Licensing Act of 1662 and the Star Chamber Decree of 1637, which were enacted to solve the problems of monopoly. Kaplan (1966) agrees that it was designed to regulate printers in order to prevent the printing and sale of “heretical schismatical blasphemous seditious and treasonable Bookes Pamphlets and Papers.” Bently (1994) also stressed that the main purpose of the Act of Anne was to allow publishers ‘print and reprint’ books, therefore, it would be misleading to conceive the Act of Anne as a ‘copyright.’

3) Copyright and Authors

It is now widely believed that copyright should protect authors and artists, in order for them to reap profits and thus stimulate creativity. Claims about artists' earnings in the music business are often rooted in this belief. However, copyright being an author's right is a notion that was formulated over time, and scholars remain divided on the implication of this. Behind the history of the way copyright, which began as a royal privilege bestowed upon publishers, became defined as an author's right lie the so-called battles of booksellers (Deazley 2004; Rose 1993). From 1706 onwards, booksellers, who were seeking to restore the government's perpetual protection through the revival of the 1662 Act, decided to shift their major rhetorical theme. Instead of appealing for regulation by underscoring the financial risks they faced, the publishers placed authors, whose plight as artists looked more noble and sympathetic by comparison, at the centre of the debate in the petitions and pamphlets that they sent to the government (Deazley 2004; Rose 1993). Deazley (2010) perceives this shift in rhetoric as a natural strategy for publishers. He said, "[N]ot only was it reasonable that an author should have all the advantage that may possibly [be] allowed him for his writings, but, without a secure property in books, no bookseller would be able to give a consideration even for the most valuable copies of books: by which means, learned men will be wholly discouraged from propagating the most useful parts of knowledge and literature. In addition, there was also an author's family and dependents to consider" (Deazley 2010, 47).

In regards to the matter of this change, two landmark cases are worth mentioning. The first is the case of *Millar v. Taylor* in 1769. Andrew Millar, a bookseller, filed a suit against Robert Taylor for printing James Thompson's poem "The Seasons". Andrew Millar purchased the publishing rights for "The Seasons" in 1729, and its term for protection granted by the Statute of Anne had already expired when Robert Taylor began publishing it. By the decision of the Court of the King's Bench led by Lord Mansfield, an author's copyright in common law was approved. Copyright lasted in perpetuity. Patterson (1968) said that the *Millar* case decision was a watershed moment in the evolution of copyright as both a philosophy and a legal practice. He encapsulates this by stating that "the major consequence of the change of copyright from a publisher's right to an author's right, then, was this: instead of being a limited right in connection with a work for an unlimited period of time, it became an unlimited right for a limited period of time" (Patterson 1968, 18). However, five years later, in 1774, this

decision was overturned. In *Donaldson v. Beckett*, a legal action was brought to the King's Bench for the same work, "The Seasons", which was, it can be inferred, a cash cow for myriad players across the spectrum of publishing. Through this legal suit, Alexander Donaldson, a publisher in Edinburgh, attempted to acquire the right to publish the work whose perpetual right for publishing was granted to Beckett and his partners. This decision confirmed that the duration of copyright existed for twenty-eight years and the copies were in public domain thereafter. This long legal development left two important legacies: authors' rights and public domain (Feather 2007).

Opinions remain divided on this decision. Clair (2004) acclaims the Donaldson case as "the most decisive event in the history of reading in England since the arrival of printing 300 years before" (Clair 2004, 109). He describes its legal decision as "a decisive moment for the whole subsequent development of notions of intellectual property, for the price of books and access to texts, for the process of reading, and for the subsequent course of the national culture widely defined" (Clair 2004, 111). He thus argues that this decision transformed what was once a highly monopolistic industry into a much more competitive and prosperous one. The price of books decreased, the industry enjoyed a fourfold growth in production and the "ownership of books and acts of reading" increased. Raven (2007), however, counters this claim, stating that "the 1774 Lords' ruling has gained an importance in histories of the trade quite in excess of its true worth." He suggests that this ruling should be interpreted as a continuation of the earlier business output, and that it is therefore "less a 'watershed' than a point in a much longer and more complex course of development" (Raven 2007, 232).

To Patterson, the concept of copyright as an author's right is an outcome propagated by publishers, not authors, who "in their quest for perpetual copyright, promoted the idea that the author had a common-law copyright based upon his natural rights as author" (Patterson 1968, 151). He states that since the copyright stemmed from the right to copy – which meant to publish – copyright is "a right of the publisher only", and "not until after the Statute of Anne did the modern idea of copyright as a right of the author develop." He further suggests that "the failure to formulate a workable, unifying concept of copyright" is due to the change of copyright, initially a publisher's right, to an author's right. From his perspective, authors were not members of the Stationers'

Company, and they had no role in developing and shaping the stationer's copyright. Feather (2006) also argues that copyright as an author's right is a misconstrued conception advanced by the publisher to their end and deprives us of the "basis for distinguishing between the interest of the author and that of the publisher" (Feather 2006, 226).

Others believe this change of copyright as an author's right is the consequence of the romanticised concept of authors. Rose (1993) argues that copyright, far from being a moral issue, is the product of modern printing technology and the economic interests surrounding it. Through the Donaldson decision, he continues, "the representation of the author as a creator who is entitled to profit from his intellectual labor came into being through a blending of the literary and legal discourses in the context of the contest over perpetual copyright" (Rose 1993, 6). Marshall (2005) shares this idea and states that the concept of romantic authorship can be attributed to the historical and societal changes that flowered during the Romantic period. During this period, an author was elevated to a profession, and authors themselves, considered to be both artists and masters of their domain, and became the focal point of the copyright debate. He argues that this romanticism situates the commodification of art at the centre of the copyright discussion and became "the primary rhetorical tool" for both condemning copyright infringement and demanding stronger copyright protection.

4) Copyright for Music

Legal protection for music, like that of publishing, took shape over a long period of time as a result of the interplay between technological advances, power struggles and social needs. Even after the enactment of the first modern copyright law, the Statute of Anne, music was not subject to copyright protection because music did not belong to any of the three subject matters it covered: books, plays and maps (Rosen 2008). The first attempt to achieve copyright protection for music was made in England in 1777 by Johann Christian Bach (Johann Sebastian Bach's younger son), and, as a result, copyright protection was conferred upon music under the category of books and other writings (Kretschmer, Klimis and Wallis 1999). However, this decision did not lead to a common practice of legal protection for music. Music publishers by and large did not

lobby for statutory protection during this period; instead they endeavoured to strike market deals that, through strategies such as limit pricing (setting prices below the threshold of profit maximisation), prevented new entrants from establishing themselves. According to Hunter, this was because “for music publishers, the maintenance of copyright protection over 14 or 28 years was unnecessary, as most musical works would not remain in fashion that long” (Hunter 1986, 276).

The means of making a living for composers included working for churches, conducting, teaching and even marrying a rich widow in the case of Debussy (Peacock and Weir 1975). Patronage from rich noblemen, rather than royalties from copyright, had long been the honourable and (once acquired) most important source of income for composers. Some composers relied on institutional mechanisms, but most musicians, even distinguished ones such as Joseph Haydn, worked for either noblemen or churches. During this period of time, copyright was remotely related either to artists’ earnings or stimulation of creative works. In fact, substantial volumes of classical music, including some of the greatest masterpieces, were produced when no copyright protection existed (Boldrin and Levine 2002).

5) The Emergence of Publishers

The mechanisation of printing introduced an era of mass communication that led to a fundamental change in society, including the music industry. The invention of sheet music printing in 1501 allowed music admirers to enjoy music by playing what they heard at concerts or operas. The publishing business, however, required an extensive degree of expertise and upfront capital, which made an investment in it risky. Moreover, its potential customers were confined only to an elite of aristocrats, and thus it was, at best, a side business for those pursuing other enterprises (Scherer 2004). The 18th century witnessed the emergence of the middle class, whose purchasing power transformed a nation of “cultural poverty” into a “culture-hungry society” (Plumb 1973). Pianos increasingly became essential “items of respectable furniture” (Ehrlich 1985). As concerts and theatre life began to grow, distribution of sheet music for public performances in concerts or operas became an important business for music publishers. As a consequence, concert promoters and publishers began to exert strong influence

over the music that could reach the public, commercial success of songs and therefore financial gains for artists (Napier-Bell 2014). This interplay between the burgeoning music publishing business and the growth of concert culture established the industrial basis for the music industry (Tschmuck 2012a).

3.1.2 19th Century - 1910

The market structure built around music publishers lasted until the end of the 19th century, and sheet music was the driving force for the mass production of music as a commercial form (Garofalo 1999). At the heart of the music industry during the last third of the 19th century were music publishers and promoters, whose market power depended on the technological base of music concerts and the subsequent distribution of music through mass-produced sheet music (Tschmuck 2012a, 10). This market power was well manifested in the Tin Pan Alley, a collection of music publishers and songwriters who exerted great power over the fortunes of artists in the US. With their close proximity to the vaudeville theatres, they dominated the mainstream through a near perfect distribution system in which they controlled contracts with composers, distribution and the plugging of diverse avenues for sheet music (Kernfeld 2011, 18).⁴

Listening to music had long been “a temporal, fleeting experience – and a rare treat...most often heard in church and perhaps at home, if someone had talent, not to mention a piano” (Coleman 2004, 1). Edison brought music to the home by inventing the phonograph in 1877. It became possible to record sounds, which had theretofore been limited to a single performance and thus always ephemeral. The sounds, fixed in place, became multiplied and distributed to the public. Like many other technologies, however, the phonograph was not conceived in order to perform the primary utility for which it is now most popularly known. In an 1878 publication of the *North American Review*, Edison published an article on the 10 intended uses of his invention, and music – either the playing or recording of – did not even make the top three. Stenography was the phonograph’s first and primary function; sound recording came a distant fourth (Tschmuck 2012b, 11; Garofalo 1999). This initial vision is well reflected in the name of

⁴ Napier-Bell (2014) argues that music halls in the UK played an equivalent role to Tin Pan Alley.

the company Edison founded in 1878: the Edison Speaking Phonograph Company. He regarded the phonograph as “a mere toy with no commercial value”, and shifted his attention to developing electric light (Negus 1992, 21).

1) Phonographic Industry

The first commercial value of this technology was recognised when the Columbia Phonograph Corporation licensed and developed it as a “nickel-in-the-slot” machine. This first pay-per-play machine was introduced in 1899 by Louis Glass, and allowed people to listen to a recording for a nickel. It proved to be very popular. Prompted by its unexpected commercial success, other distribution companies joined the business and spread the machine to other public places such as saloons, amusement parks, retail shops and train stations. Tschmuck (2012b) suggests that this accidental innovation owes to the relative infancy of the industry, in which diverse experimentation was allowed. With the commercial success of the nickel-in-the-slot and jukebox, it became evident that the future of the phonographic industry did not lie with dictation technology but instead with the development of sound recordings.

A series of developments for the phonograph ensued, and sound recordings officially became its main function. Edison's phonography was developed from wax cylinders, which were not ideal for mass production. To produce a thousand albums, performers had to sing the same song 100 times with 10 phonography machines. Mass production of cylinders was not yet viable, and there were more demands for sheet music than for cylinders. Royalties from the sales of recorded music were not considered significant to writers or publishers (Kretschmer 2000). The next development that followed came from Emile Berliner, who envisioned the future of this technology as “a machine for home entertainment and mass production of music discs” through which artists could earn royalties (Frith 1987). He replaced the cylinder with a flat disc and named it the gramophone. A fierce rivalry between the cylinder and flat disc brought a stream of technical improvements. Edison eventually gave up the cylinder and introduced a diamond disc, but the gramophone won the competition. The creation of a master recording opened up an easy and less expensive way of duplicating and distributing sound recordings. Negus (1992) suggests that Berliner's prophecy of the technology

meshed better with the industrialisation of music because “[the gramophone] was better suited to the capitalist system of production and distribution because it was harder to make pirate copies and, hence, the companies were able to control its manufacture more easily” (Negus 1992, 22).

During this period, technological advances drove recording companies forward. This is a recurring theme in the history of the recording industry. However, it was particularly so in the early phase of the development of the recording industry. The recording companies were managed and owned by engineers and were remotely related to the previously predominant music entities such as publishing houses, theatres, artists and artist management companies (Frith 1987). The music that was released was chosen by technicians (Huygens et al. 2001), and Berliner was one of the few entrepreneurs with an interest in music (Frith 1987). As part of the “electrical goods industry”, the recording companies also had to provide a wide range of technologies from recording to consumption (Gronow 1983).

3.1.3 1910 – 1930

1) Radio

Two further technological developments, radio and sound in cinema, pushed the recording industry to become its own entertainment industry (Negus 1992). Radio eventually became an important destination for recording promotions. The cinema was an important link between songs and entertainment media (Negus 1992). In the beginning, however, radio was not conceived as a popular medium for music listening. Many artists and producers resisted having their music played on this new medium, assuming that free play of their music would displace the need to purchase their albums. At the height of his career, Bing Crosby put the label “Not licensed for radio airplay” on his records (Peterson 1990, 105). Likewise, radio stations had a great disdain for playing “canned music” (Peterson 1990, 105). However, the advent of television in the 1940s took advertising income away from radio, and radio could no longer afford expensive forms of programming. Radio stations depended on the record industry as a low-cost

yet appealing form of programme. This led to the practice of “payola”, in which record companies sent out free copies of new albums or even bribed radio DJs for airplay on the radio. Top 40 playlists were developed to make sure that listeners would stay tuned. These efforts to keep listeners loyal to stations produced an “ever-narrowing chart-based play-list” (Frith 1978). The record companies also realised that radio airplay directly correlated to an increase in the sales of a record. The two, therefore, forged a symbiotic relationship that would persist for decades. As radio became an increasingly important gatekeeper that dictated which songs would grab consumers’ attention, record companies were naturally keen to get their artists on the airwaves in order to move more units (Burnett 1996). It was not long before radio became the dominant music consumption medium, and the royalties resulting from this phenomenon became a significant source of profit for the industry (Frith 1987). By the end of the 19th century, royalties from sound recordings well superseded revenue from sheet music sales (Kretschmer 2000).

2) Collecting Societies

Prior to the invention of phonography, the only avenues by which musical performances could be monetised were theatres and concert halls: avenues that, by their very nature, were highly visible, heavily promoted and therefore easily monitored by publishers, artists and other rights holders. Performance royalty systems were common practice in Paris throughout the era predating phonograph and gramophone technology (Kretschmer 2000). In the years following the invention and proliferation of new technologies, especially radio, it became clear that although recorded sound was potentially lucrative, it was also, unlike live performance, exceedingly difficult to monitor. There was no way that individual composers could monitor each and every use of their music. Therefore, publishers, composers and songwriters attempted to form an organisation to secure an effective performance royalty system. It was kindled by an incident in Paris in 1847, when composers Ernest Bourget and Victor Parizot visited the Paris concert café Ambassadeur. There they heard, much to his surprise, Bourget’s own piece being played by an orchestra to whom he had never proffered performance permissions. They refused to pay the bill for their drinks, arguing, “You consume my music, I consume your beverages, property against property” (Kretschmer 2000, 211).

In the following legal suit, the Tribunal de Commerce de la Seine prevented the café owner from playing the works of the composer without consent, and upheld the performing rights. In the same year, the first collecting society for music, Société des Auteurs, Compositeurs et Editeurs de Musique (SACEM), was established in Paris. This society laid the foundation for utilising performing rights for works played on sound recordings; furthermore, the society and its legislative achievements, albeit in embryonic fashion, provided a practical way to monitor sound usage and distribute royalties accordingly (Kretschmer 2000). Later, in 1914, the Performing Rights Society (PRS) was founded in the UK to work on behalf of copyright holders in the music field. In the same year, the American Society of Composers, Authors and Publishers (ASCAP) was established in the US.

By the 1910s, it was clear that records would become a powerful cultural force (Garofalo 1999). The record sales of classical music in both the local and international market enabled the recording industry to blossom on a global scale (Laing 2013). The 1911 Copyright Act was enacted in the UK to grant composers and publishers control over public performance of their works. In order to collect payments for the use of sound recordings, which became possible with the introduction of the 1911 Copyright Act, music publishers established the Mechanical Copyright Protection Society (MCPS) in 1924. In the lawsuit of *Cawardine v. the Gramophone Company*, the court ruled in favour of the Gramophone Company (which later became EMI) and ordered Stephen Cawardine & Co., a café in Bristol, to pay royalties for the playing of the Gramophone Company's sound recordings. The Gramophone Company's victory laid the groundwork for subsequent changes that guaranteed royalties for rights holders deriving from the broadcasting and public performance of sound recordings. As a result, Phonographic Performance Limited (PPL) was established to administer collective management of performance rights, through which recording companies could charge a royalty when their record was used for a public performance. As the use of radio became widespread in the 1920s, revenue generated from the licensing of the rights of record recordings increased. Collecting societies were conceived as a convenient and efficient mechanism for collecting and distributing revenue to rights holders. However, it was not without its problems or critics. Kretschmer (2000) emphasises that the establishment of collecting societies resounds with the development of copyright –

which was driven by publishers, not authors or artists – in that they, in an effort to boost their own bottom lines, “used the now familiar rhetoric of authors’ rights to foster their own ends” (Kretschmer 2000, 212). Claims have been made that it led to the issues of a record-dependent music industry and the pay-per-use-driven business model, which later became problematic, especially in the digital era (Burkart and McCourt 2006)

3.1.4 1940 – 1950

1) Magnetic Tape and Multi-Track

With the 1940s advent of magnetic tape, transistor and long play technology, recording structures were forced to recalibrate and reorganise. Magnetic tape was conceived to improve sound reproduction. Not only could tape be reused and edited with ease, it allowed for a greater length of recording compared to previous mediums. It was more portable and durable, not to mention less expensive. Multi-track recording, which soon followed magnetic tape’s implementation, entirely changed the technical process of recording music and, inasmuch as it freed songs from the shackles of single-take recording, allowed artists to explore new frontiers of music production. Prior to multi-track recording, music production relied heavily, if not entirely, on the musician or musicians delivering a perfect performance for the microphone in one take. Even a single mistake meant scrapping the take and starting from scratch, which made the production time-consuming, frustrating and costly. Multi-track technology enabled artists to record sections or layers of a song, piece by piece, and combine parts to create the whole: a process known as “overdubbing”. These new splicing, mixing and editing techniques enabled musicians to overcome the previous limitations and even to create wholly unique, organically impossible sounds. The Beatles’ “Sergeant Pepper” LP set the standard for the complexity of eight-track recording technology (Frith 1986). Ironically, this increased reliance on technological advances moved control of “the creative work” from the artists to studio engineers and music producers (Toynbee 2004).

In 1947, the transistor was developed by Bell Telephone as a replacement for fragile vacuum tubes. Though initially for military uses, e.g. radar, it rapidly became adopted in commercial electronic products as it was less expensive, lighter and better for mass production. It gave portability to the phonograph and mobility to radios. It brought high fidelity into the homes and sparked the Top 40 revolution (Coleman 2004).

Another important audio technology introduced around this time was long play. Shellac, the main ingredient in gramophone records, experienced a wartime shortage and was replaced by vinyl, which was less costly but more durable (Coleman 2004). Using vinyl as their base, CBS invented high fidelity 33-RPM (rotations per minute, pertaining to the speed at which the disc revolved on the player) records that increased the duration of audio that could fit on a record. RCA created 45-RPM in response, thus creating a marketplace competition. Following the “battle of the speeds”, 45-RPM discs became the standard for the industry; they proved to be more durable yet lighter, and therefore could be shipped easily at lower cost. Following the development of a two-track system, the high fidelity stereo was brought to the home. The confluence of these technological advances coincided with the emergence of rock and roll, independent labels and celebrity culture in the music industry. The low cost and ease of use enabled by tape recording lowered the entry barrier for smaller recording companies, and thus new players entered the scene with fresh ideas, un-beholden to corporate interests (Jones 1992). The new possibilities in editing tape recordings and the emergence of home stereo systems both facilitated new, experimental music styles and allowed these styles to be enjoyed in privacy, on demand and in direct reflection of the consumer’s specific taste. Niche music and niche demography were born. The reduced cost of shipping enabled by the microgroove record bred a host of distribution companies that helped small record companies distribute their albums to retail stores around the world (Peterson 1990).

2) Emergence of Piracy and International Conventions

The widespread use of magnetic tape and television in the 1940s, the unprecedented popularity of American rock and roll in the 1950s and the “British Invasion” of the 1960s all contributed to the predominance of Western culture on a global scale. The

technological advances in recording gave rise to the emergence of independent labels, but it was the cultural force of the record that consolidated the power of the multinational recording industry. The recording industry also had to face two major financial headaches, bootlegging and home-taping, which the industry argued were responsible for the overall sales decline during that decade's recession. With subsequent advances in technology allowing even more refined bootlegging and home-taping potential, the line between commercial use of unauthorised copying and private sharing became less clear, and the industry quickly lobbied to ensure that any unauthorised use of their copyrighted works was condemned as "piracy" (Marshall 2004).

Music, by nature, easily crossed linguistic or cultural barriers, therefore, music publishers tried to seek international legal protection in order to ensure they could generate income from abroad and prevent pirated editions (Laing 2004). Even though reproduction technologies were still in their infancy, a few countries already had laws in place to deal with the reproduction of musical works by mechanical means (Ricketson 2006). Bilateral agreements were drawn up between neighbouring countries in Europe were not well organised way of securing international copyright protection (Ricketson 2006). Claims were made that mechanical recordings had cut down employment opportunities for performers and that this could bring about the eradication of the profession, but existing laws were insufficient to cover the newly emerging practice of unauthorised use of sound recordings (World Intellectual Property Organisation 1981). This developed into a major issue, feared by the recording industry, who pressed the need to protect performers against unauthorised use of their performances (Davies 1979). The remedy proposed was to establish international legal protection to monitor the use of recorded or broadcast performers (Thompson 1986).

Copyright protection for literary and artistic works was first recognised across national boundaries through the Berne Convention, established in 1886. However, the ephemeral nature of performers, and the derivative nature of performances or musical arrangements whose works are derived from an original musical composition, could not satisfy the requirements for protection under the Berne Convention (Boytha 1993; Bently 2008). After a 50-year-long gestation, the Rome Convention was signed in 1961 and came into force in 1964, with about twenty contracting states. It provided for the

protection, for the first time at an international level, of the three principal categories of neighbouring rights: performers, producers of phonograms and broadcasting organisations.

The intrinsic nature of neighbouring rights – rights neighbouring on copyright – required the collection of royalties to be exploited by way of licensing the public performance of records to the users. Collecting societies, which worked on behalf of copyright holders, enabled users to access the societies' collection of sound recordings through blanket licences. These licences, as opposed to single-use licences, saved time and therefore improved income for rights holders, who no longer had to examine each individual use on a case-by-case, micro level. The Rome Convention laid the foundation for granting the right of exploitation of sound recordings to relevant parties under the norms of copyright, and thus the economic incentive for copyright owners to control their works was born (Teller 1990). From the Rome Convention onwards, the expansion of protection for music continued. In 1992, the EC Rental Directive was legislated and enforced in European countries by the Rome Convention.

3.1.5 1960 – 1980

1) Cassette Tape and CD

The magnetic tape improved the process of recording and editing of sounds, but its reel-to-reel format was not ideal for playback (Laing 2013). The Dutch electronic firm, Philips, improved the format to a self-contained cassette to which a tape is inserted, enabling playback. With the arrival of cassettes, the landscape of popular music changed entirely (Frith 1986). It made music portable and recordable. The lowered cost and less complex method of production, duplication and dissemination of music bred new and small labels in the market. More significantly, the ability to sample enabled by this technology facilitated changes in the relationship between the creator and the public by blurring the line between the creators and the users (Goodwin 1988). This new means of control over music meant that consumers and artists could record music by themselves, making the distinction between engineers and musicians insignificant (Frith

1986). An associated product, Sony's Walkman, a portable cassette player launched in 1979, heralded the age of nomadic and private music listening and played a crucial role in cassettes becoming a sustainable music listening format (Nathan 1999). Although it enabled the recording industry to reach every corner of the world and become a transnational industry, the cassette tape was a double-edged sword. The decentralised control over the production and consumption of music enabled by this technology brought home-taping and bootlegging into popular consciousness. Frith (1986) argues that the industry realised the significance of this change only later, which is a recurring theme in the history of popular music.

The introduction of the music video in the late 1970s enhanced the importance of television and, in tandem, the imagery associated with popular music (Negus 1992). Images of artists portrayed in visual media such as film and television became an integral part of a song's popularity. The significance of visual media reached its peak in 1983 when Michael Jackson's music video for "Thriller" was released. As one of the most expensive, as well as influential, music videos, "Thriller" helped the same-titled album achieve sales surpassing 40 million copies, an unprecedented record. In the face of the financial constraints generated by the recession of this era, major labels were in need of cost-cutting measures. "Thriller" indicated that the superstar economy could solve the industry's economic woes by reaping greater income from fewer artists (Garofalo 1999). It also signalled a shift in the focus of recording companies' business from production to copyright exploitation (Garofalo 1999).

The CD was also introduced in 1982. It was far superior to the LP in many ways: crisper sound quality, greater durability and simpler usage. The barrier of buying new CD hardware delayed its market penetration, but soon it successfully replaced the vinyl LP. In fact, not only did the CD replace vinyl for new albums, the sales of back catalogues became a lucrative revenue stream for recording companies. Consumers purchased records they already owned on LP in the CD format. The major labels promoted this new format vigorously (McLeod 2005), only to realise later that it allowed users to "retrieve digital music information for new uses" and "undermine[d] the material distinction between production and reproduction on which copyright law rests" (Toynbee 2004, 3).

2) Mergers and Acquisitions

Over the past few decades, a series of mergers and acquisitions has characterised the recording business structure. A major “merger mania” began in the 1960s, with rock and roll swaying the market and independent record companies achieving unprecedented growth (Garofalo 1999). In the 1980s and 1990s, the recording industry market underwent a series of consolidations in which smaller labels were purchased by or merged with larger firms. The commercial success of American music and the rise of the superstar system bred a multinational recording business driven by US recording companies (Laing 2004). By 1999, “the Big Five” – Warner, EMI, Sony, BMG and Universal – dominated, and became the basis for the multinational recording industry (Garofalo 1999). The music industry was firmly controlled by this oligopoly of five major international record companies, which dominated 70-80% of global sales (Burnett 1996). The ability to exploit copyright was firmly established as a central strategy for profit in the recording industry (Frith 1978; Negus 1992; Bettig 1996). At the centre of the consolidation of the recording industry lay copyright, through which multinational firms’ rights-based business was structured: endogenous sunk costs led to vertical integration, through which multinationals could build economies of scale to reap profits from their own labels (Bakker 2012).

3) Copyright as an Economic Incentive

In the 1980s, the recording industry shifted its attention from international conventions to lobbying trade regulations (Laing 2004). Through subsequent international conventions, protection for neighbouring rights became consolidated. World Copyright Treaty (WCT) and WIPO Performances and Phonograms Treaty (WPPT) granted phonogram producers the right to equitable remuneration for broadcast or communication to the public and the exclusive right to make their recordings available. The recording industry’s global strategy to exploit rights has taken on increased significance (Frith 1988). As a consequence, copyright as an economic incentive has become an integral part of the global recording business (Towse 2001).

The economic justification of copyright is to provide an incentive to artists to continue to create artistic works by guaranteeing commercial exploitation and, as a result, financial compensation. The substantial financial investment required to produce music, compounded by consumers' fickle and unpredictable musical tastes, makes the music business particularly high-risk, with a high ratio of failures. This market condition is associated with the market failure that creative works carry as public goods. That is, as a public good, music is non-excludable and non-rival. Listening to music does not diminish its value or exclude its usage. By being packaged in physical formats, music is turned into a rival good. This leads to the argument that the absence of protection could result in a "tragedy of the commons" – where no exclusive right to common goods would eventually lead to the destruction of the common resource (Hardin 1968). To counteract these problems, the government can intervene and grant exclusive rights to the owner of the property as a remedy to the threat of over-consumption. Posner (1998) argued that the absence of legal protection for property rights would result in less or no incentive for investment. An efficient use of resources and continuous production is emphasised in order to ensure the recovery of the cost of development through exclusive rights. Another important economic aspect of copyright is that it is a trade of interests between costs and benefits (Towse 2004). No benefit of copyright, in other words, will reduce the incentive to produce works, because the benefit will increase the price. Therefore, in determining copyright policy, it is of the utmost importance to strike a balance between the protection of artists and the costs of copyright in order to maximise creative output (Landes and Posner 1989). However, the way to overcome the dilemma of copyright as a mechanism for incentive to create access to users while avoiding concentration of copyright ownership in enterprises with excessive market power is still a matter of dispute (Towse 2004).

From the artist's perspective, royalties generated from copyright are increasingly conceived as an important source of revenue. Under the terms of a standard contract, artists receive an agreed percentage of profit derived from record sales only after all upfront expenses – recording, marketing, manufacturing, advance etc. – have been recouped (Caves 2002). A few scholars have raised questions relating to copyright as a reward for creators. Towse and Kretschmer provided empirical research on copyright

and artists' earnings to determine whether or not copyright is economically beneficial for artists. Towse (1999) demonstrated that the different interests of authors and publishers as well as the asymmetries in power, including risk-bearing ability and information, lead to an imbalance in power among the parties involved in music. She observed a skewed distribution of royalties among individual musicians across the fame spectrum; the majority of royalties collected by PPL are distributed to top-tier musicians. Kretschmer, Klimis and Wallis (1999) identified that the bargaining power between the parties surrounding the rights granted by copyright is the determinant factor of the location of intellectual property rights. The digital technology posing challenges to the existing structure of the industry, they argued, threw up questions about the need to sustain the traditional flow of the rights. In an article, "Intellectual Property in music", Kretschmer (2000) illustrated that publishers and a few established authors were the driving force behind the evolution of copyright, and observed that the major portion of the earnings of the artists distributed by PRS are paid to a few top artists. This favourability to the few and the skewed bargaining power of the parties involved brings into question whether copyright operates under the widespread notion that it serves to help artists gain financial returns. A more sophisticated examination is essential, in order to understand the spectrum of artists that are benefiting from the copyright system and the gain a more balanced view of copyright's role in artists' earnings.

3.2 The Conventional Music Value Networks

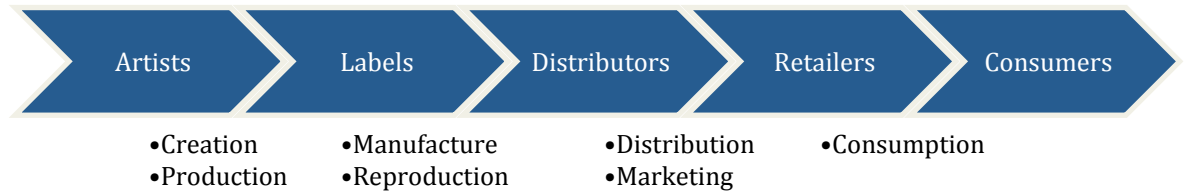
Technological innovation in the recording industry entails the complex interplay of a diverse array of factors such as digital technology, copyright regulation and conflicting interests between heterogeneous players such as major labels, other intermediaries, music consumers and artists. For an overview of the complicated dynamics of the recording industry, this section demonstrates the organisational structure and features of the industry, paying special attention to the intricate relationship amongst its diverse actors. To juxtapose the changes that emerged in the digital era (which is discussed in Chapter 5), this section focuses on the dynamics in pre-digital settings.

Value chain analysis determines the value-creating logic in an industry. The publication of Porter's (1980) value chain framework signalled a new understanding of the way firms achieve a competitive advantage by differentiating their product or service in value-adding processes. Many studies have drawn attention to the value chain in the music industry. Kretschmer, Klimis and Wallis (1999, 2001) probe the role of Intellectual Property rights in music value creation. Combining this with many other business perspective works (Hull 2004; Parker 2004; Rapaport 2003; Weissman 2010), the conventional value chain in the music industry can be shown by Figure 3. This value chain was established around the 1930s, when publishers emerged at the heart of the music business as intermediaries between composers, performers and recording companies. Concomitant with the development of new technologies, new intermediaries have been added to the chain. The basic structure of the chain, however, has changed little since the first model (Wallis 2006).

This value chain provides a useful framework to understand the process by which music is created and delivered to consumers in the market; in each of the stages, value is added. The chain begins with the creation of musical works, the right of which to exploit in most cases is assigned to intermediaries such as labels or publishing companies. When the music is recorded and manufactured, it is distributed, marketed and promoted to the final users, who purchase the products at retail outlets. In the music industry, Intellectual Property rights play a crucial role in adding value to the chain by enabling

the right of use of the contents to be transferred to the next process (Kretschmer, Klimis and Wallis 1999; Towse 2014).

Figure 3. Conventional Music Business Value Chain



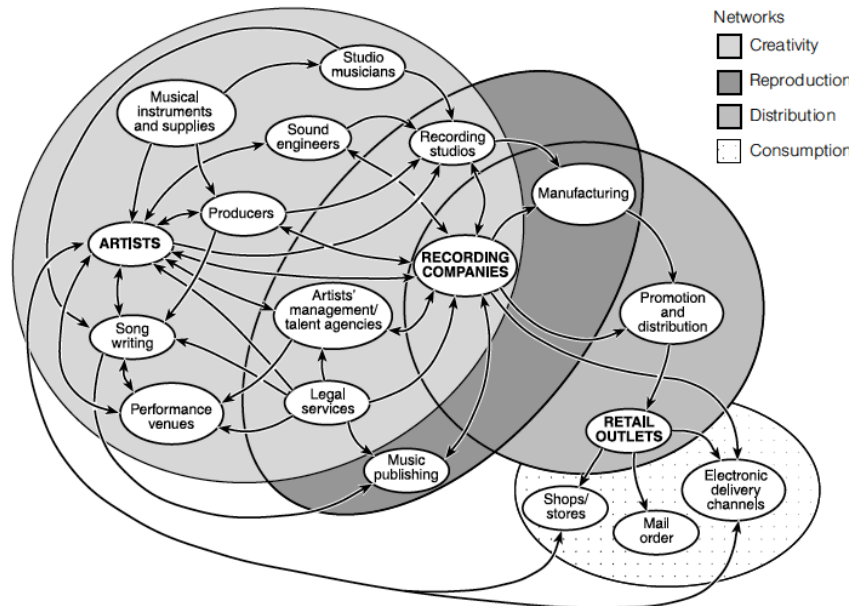
Although the value chain is useful for understanding value creation logic, it is not sufficient for comprehending the interplay between innovation actors and their interaction in the economic, cultural, legal and institutional context. In mapping out these complicated dynamics, this research drew upon Leyshon's (2001) network of musical economy, which depicts the constellations of four major networks in the music industry. Developed upon Attali's (1985) political and economic music value framework, Leyshon's (2001) value networks explore the allocation of the different functions of the industry in four musical networks. This framework is particularly valuable for capturing the complex relationship amongst heterogeneous forces and the blurred interaction among the four networks. As a geographer, Leyshon places the location at the centre of the analysis of musical value networks. By placing more focus on the sociotechnical dynamics in the recording industry, this section attempts to provide complex and intricate dynamics of the recording industry in the context of the whole network.

3.2.1 Networks of Creativity

Leyshon (2001) defines networks of musical creativity as “centres of musical knowledge, both in the sense of being a repository of the requisite technical competencies to be able to compose, perform, and record music, but also of knowledges of what different compositional, performative, and recording styles signify within a wider cultural and subculture context. They are, as such, not only centres of production, but also of interpretation. As such, networks of musical creativity influence the ways in which musical forms circulate and are recombined through acts of creativity” (Leyshon 2001,

62). Drawing upon this concept, this sub-section discusses two features within the networks of creativity that have close relevance to this research: production and the relationship between record labels and artists.

Figure 4. Value Networks in the Conventional Music Industry (Leyshon 2001)



1) Music Production

Up until the 1960s, music production was a well-structured process in which A&R agents discovered talent, developed and trained them and signed them to contracts with labels. Artists' aptitude for live performance had to be strong enough to be pressed on a disc. Therefore, artists' performance was of prime importance in the quality of sound recordings. A dramatic change in recording came with the development of multi-track recording in the 1960s (Cunningham 1998). The introduction of new mixing and editing techniques enabled the creation of otherwise "impossible music", and also brought about a drastic reorganisation of production. The studio's significance increased, as a space to separate and control both artists and sound; sound engineers became an essential part of the recording process for sound layering (Th  berge 1997). From Hennion's (1989) perspective, studios became the axis to which music's collective apparatus was anchored: the networks of creativity, therefore, became intermediated by music producers, whose role as negotiators between artists, engineers, facilities and

consumers gave them enormous power. The intrinsic value of producers, he argues, is embodied in their ability to associate with the public and thereby to produce hits. In this setting, “pop musicians have increasingly taken on the more detached, evaluative role of the producer in assessing the commercial potential of their material” (Théberge 1997, 221).

2) Relationship between Artists and Record Companies

Record companies play an essential role in the networks of creativity by providing the resources necessary for artists to focus on their artwork instead of finances or logistics. These resources include a specialised workforce including sound engineers, producers and high quality recording facilities. Normally, a record company signs a contract with an artist and provides her with an advance so she can concentrate on her career without needing to engage in part-time jobs or other means of ancillary income. All this takes a substantial amount of financial investment, which an average artist cannot afford. Just as record companies are crucial in providing the wherewithal for artists’ creative activity, artists are also instrumental in record companies’ survival. Releasing projects by established artists is often preferable because it is a safe bet that record labels will accrue money from them without much risk. These projects often generate the capital necessary to discover, nurture and launch new talent, who are, although riskier from an investment standpoint, crucial to the future of any recording company (Hull 2004). Since the music business relies heavily on the fickle nature of popular taste, it is continually essential to seek the “next big sound” (Hull 2004). If a new artist becomes successful, the label not only earns a considerable return on their investment, but also improves their own leveraging power for future projects. Since new artists do not have a proven record of success, the royalty rates and advances paid out to them are normally lower than those offered to established artists. The label, moreover, can also bind the artist to the contract during the most lucrative period of her career. Contractual agreements are common forms of sharing risk, distributing incentives and rewards between artists and labels (Caves 2002). In theory, royalties are paid to artists when the advance is recouped through the sales of albums, but in reality very few releases sell enough copies to recoup the initial investment made in production, marketing and so

forth. It is argued that less than 10% of releases sell enough copies to cover the loss made by the other 90% (Cummings 2010).

Historically, the relationship between artists and gatekeepers has often been subject to conflicts of interest over the ways in which musical products are exploited (Peacock and Weir 1975). This owes to the power imbalance tilted toward labels, with the exception of a few established top-echelon stars that command considerable leverage when negotiating deal points. These stars are the exception, however, and the vast majority of artists – especially those of the fledgling variety – have little to no say in the content of their contracts. “Take it or leave it” is the operating principle in most cases. In all contractual negotiations within the music industry, regardless of either party’s stature at the table, the bargaining power of the artist is determined by the extent to which the interested label must hedge their bets at each stage of value creation. When new music is created and produced, artists and labels negotiate their power. Artists trade their artistic talents for labels’ financial capacity and knowledge. Artists’ recorded output then becomes labels’ asset in further negotiations with other parties such as publishers, synchronisation licensing firms, advertising agencies etc. Once music is ready to be marketed, the key to the negotiation is reaching the widest possible leverage of intended audiences (Burnett 1996). This power imbalance, as well as the often insurmountable technical and logistical hurdles faced by new artists, meant that the majority of artists have traditionally been obligated to sign contracts with labels in order to elevate themselves from amateur to professional status.

3.2.2 Networks of Reproduction

In networks of reproduction, economies of scale become a crucial element of the music business. Due to the initial sunk-cost of building the manufacturing infrastructure, it is imperative to ensure mass production. This mass production can be beneficial not only to reducing the overhead cost, but also to overcoming the fickle demands of consumers (Leyshon 2001). The record labels undertake the responsibilities of providing the means of resolving the financial burdens involved in the production, manufacturing, reproduction and distribution of a record. Economies of scale, which require an enormous capital resource, put the major labels in a more advantageous position than

independent labels in controlling the market. The substantial cost involved in reproduction has contributed to the rise of the Star system suited to multinational firms.

One consequence of brick-and-mortar reproduction features is the impact on innovation and the diversity of cultural products. Some research shows that there is an inverse correlation between market concentration and diversity of popular music production (Peterson and Berger 1975). Burnett (1993) contends that market control in the hands of a few large corporations is closely related to the extent to which major labels control innovation and cultural diversity.

The internationalisation and concentration of the entertainment conglomerates have made this issue particularly contentious. For example, Burnett (1996) examined the internationalisation of the media conglomerates and their control of global distribution and demonstrated that large recording organisations are better positioned to effectively utilise and capitalise the newly emerging open modes of music production, which he defined as a “global jukebox”. On the other hand, Frith (1986) agrees that the conditions of manufacturing infrastructure contributed to the control of the major companies, but stresses the need for the divergent effects of technology. He argues:

“Technology, the shifting possibility of mechanical reproduction, has certainly been the necessary condition for the rise of the multinational entertainment business, for ever more sophisticated techniques of ideological manipulation, but technology has also made possible new forms of cultural democracy and new opportunities of individual and collective expression” (Frith 1986, 91).

3.2.3 Networks of Distribution/Promotion

The music business could be characterised as a combination of two strands – uncertainty and contingency. The uncertainty of the business stems from the features carried by all brick-and-mortar business. To overcome the uncertainty, the processes of music distribution have become more streamlined by adding more windows as illustrated in Figure 3. In the process of music distribution – manufacturing, mass production of physical products, storing products at a warehouse and finally delivering

products to retailers – “each of these technologies was initially expensive, specialized, and not accessible to individuals” (Kernfeld 2011, 14).

The distribution system, built around physical copies of sound recordings, creates high barriers to entry. It entails a distribution system with wide coverage, warehouses and storage space and thus requires a substantial amount of finance (Hull 2004). To the extent that the process of creative production entails a high level of uncertainty, it becomes crucial to exercise control over consumers’ access to the product. For recording companies who invest a significant amount of money, maximising the exposure of their products is essential to recouping their investment. The control of distribution, therefore, becomes essential to eliminating – or at least reducing – the uncertainty entailed in the investment (Hirsch 2000). This control has long been in the hands of the major labels in the form of oligopoly (Negus 1992). This sub-section describes the different approaches employed by major labels and independent labels in distributing their works.

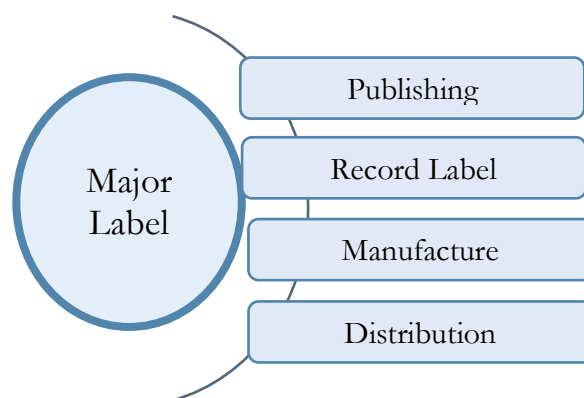
1) Distribution Networks for Major Labels

Major labels own their own distribution networks; they have to distribute large quantities of records in order to justify the large overhead of their operations. Their distribution operations are geared towards selling large quantities of hit albums by established artists. The major labels distribute not only their own product but also recordings owned by some independent labels. The major label in-house distribution systems, in pursuit of the maximum number of units, are also beholden to the largest retailers, who are in the position to order the most product (Weissman 2010, 15).

The major labels have built their own distribution systems, in which publishing, record label, manufacture and distribution units are integrated into their own business structure. Known as vertical integration, this system is defined as “the combination of technologically distinct production, distribution, selling, and/or economic processes within the confines of a single firm” (Porter 1980, 300). Companies build vertical integration “in circumstances where small-numbers bargaining would otherwise obtain and where, in sequential decision-process has optimal properties” (Williamson 1975,

104). The first and most important reason for vertical integration is economic benefits, which are achieved “by harmonizing interests and permitting a wider variety of sensitive incentive and control processes to be activated” (Williamson 1975, 104). However, other strategic issues, which are not often easily calculated in numbers, also come into play (Porter 1980, 301). The control stems from “the distribution of marginally differentiated products” and enables them to “link available input to reliable and established distribution channels” (Hirsch 1972, 646).

Figure 5. Distribution Networks for Major Labels

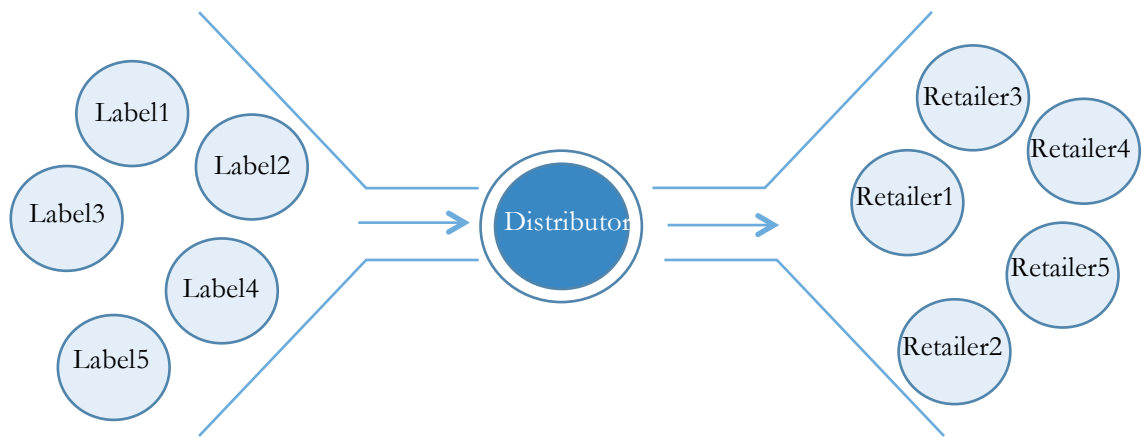


2) Distribution Networks for Independent Labels

On the other hand, independent labels focus on nurturing fewer releases, to be distributed in smaller quantities to niche retailers via independent distributors. No individual label sells enough product or has a large enough catalogue to justify the costs of self-distribution, but when combined with other labels under one umbrella, enough product can be pooled to keep an independent distributor in business (Weissman 2010, 15). Independent labels vary in size, but as a rule they manage smaller quantities of records than major labels and are not controlled by corporate shareholders. Independent distributors help independent labels achieve retail coverage for their music in markets that, unassisted, would be otherwise impossible to reach. In the conventional system, numerous and diverse distributors and retailers exist in order to cover as many regions as possible. Since the majority of independent labels do not have album manufacturing equipment, often the role of distributors begins with the manufacturing

of albums. The crucial factors influencing the relationship between labels and distributors are specialities, coverage and advances. The competitive advantages of independent labels lie in expertise in niche genres; distribution of indie albums, therefore, requires a special network and knowledge in that particular niche. Small-scale distributors in particular, known as “boutique” distributors, provide much more bespoke services for labels than comparatively larger distributors.

Figure 6. Distribution Networks for Independent Labels



In general, labels are defined as independent when they are not owned by a major label, and when their albums are sold through independent distributors (Passman 2011). In the mid-1980s, the term “independent” increasingly acquired subjective connotations of genre and style in addition to its objective characteristics (Hesmondhalgh 1997). Although “independent” music, in both scope and definition, has evolved alongside the development of rock and roll, it has always carried the connotations of “authentic”, “different” and “alternative” compared to the output of major labels (Frith 1981). The need for a more nuanced approach to this concept has been suggested (Frith 1990). Lee (1995) argues that the ideology and distribution network that distinguished independents from majors has dissolved, and moreover, major labels have appropriated the style and aesthetic of independents in their eternal quest for cool. Therefore, in his view, the current distinction between “indie” and “major” is arbitrary and nostalgic at best: a “sign post to a different era that treated the concepts of artistry, independence and audience as somehow shared” (Lee 1995, 15).

The exploitation of copyright has proven to be crucial to the success of music companies (Bettig 1996; Frith 1987; Negus 1992; Litman 2001; Towse 2004). This means that the size and range of any label's repertoire, whether major or independent, has a direct correlation to the label's profits. This has motivated many independent labels to build links with major labels (Negus 1992), and as a result, the structure of the music industry has experienced a high degree of consolidation and concentration in the past decade. During the half century following the invention of phonograph, a scant few companies – companies that held patents for technologies, such as Edison, Columbia and Victor – dominated the music business (Laing 2013). Smaller recording companies that catered to niche markets arose in the mid-1920s, but they were eventually bought by major companies like Victor, Decca and Columbia in the 1930s (Weissman 2010). From that point until the early 1950s, American popular music dominated the world's music marketplace. The sudden surge of rock and roll in the mid-1950s, combined with major labels' lack of enthusiasm, led to the emergence of independent record labels and loosened the early music business' oligopoly (Weissman 2010). However, the next 20 years saw extensive acquisitions and mergers which were built to assert control over distribution (Hull 2004, 123). After a series of acquisitions and mergers in which smaller labels were absorbed by powerful entertainment conglomerates, a tight oligopoly was firmly established by 2000 (Hull 2004, 124).

3) Marketing and Promotion

Once music is recorded, the important next step is to have it heard, known and sold. Despite the commonly held idea that the cream always rises to the top, without effective promotion it, in most cases, remains at the bottom and dissolves. Three methods of music marketing and promotion played a crucial role in the conventional system: pre-filtering, publicity and radio.

These substantial costs and the added windows of distribution led the record business to be perceived as risky. To overcome this risk, the recording industry hedged their bets on a few big hits by overproducing diverse musical products. Subsequently, the music industry became structured as a network of complex organisations in which discovery

and filtering was processed at each level of the network (Hirsch 1972). In this system, consumers' access to cultural products was subject to the selections filtered through the negotiations of conflicting interests and unbalanced power relations. Underpinning this pre-selection was the emphasis on the control of distribution channels, through which recording companies could ensure sufficient exposure for their products and in turn maximise revenue. Turow (1997) explains,

“[They] could be sure that the material their firm produced would have at least the opportunity to make its costs back in places they considered appropriate...[and] accumulate a great deal of power within the mass media system and still not be subject to restrictions on monopolies that authorities might enforce if they tried to control individual mass media industries” (Turow 1997, 687).

In this context, consumers' choices become highly contingent on market availability. DiMaggio (1977) draws attention to the way the uncertainty involved in the music business influences the creative process. Since this uncertainty arises from external conditions, he suggests, the supply of cultural goods comes as a consequence of the constant negotiations of the social, cultural and regulatory embodied in the creative process and personnel. He states:

“The market structure of an industry, in particular the degree of what economists call ‘seller concentration’ determines the degree of control over the market that firms hold and the certainty of corporate managers that their products will be sold. This, in turn, strongly influences the independence granted popular-culture creators which, in turn, affects the degree of innovation and diversity in the products that the industry manufactures” (DiMaggio 1977, 438).

(1) Pre-Selection

In his book “The Structure of the Popular Music Industry”, Hirsch (1969) investigates the industrial mechanism behind the way that certain songs become popular. By

demonstrating the interdependent relationship between record companies and commercial radio stations, he defines the recording industry as “The Top 40 Music Industry”. His pre-selection framework, shown in Figure 7, encapsulates the features of the popular music industry he conceives. He identifies four important agents that play a crucial role in this process of filtering: the A&R agent, the record company, the promoter/distributor and the radio station/media outlet. In this model, each stage of the pre-selection system entails a large amount of filtering. Wikström (2013) later summarised this:

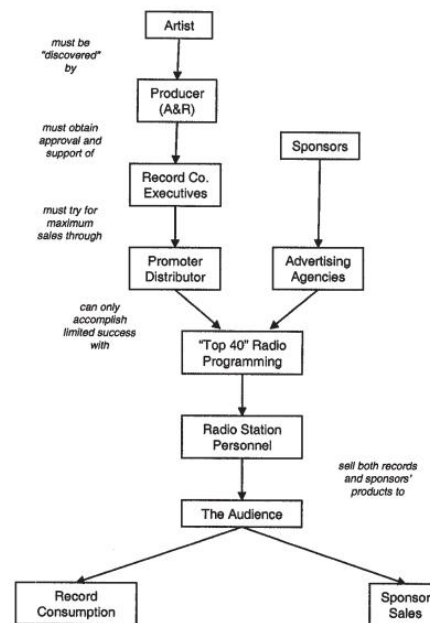
“Only a small fraction of all artists are ever able even to meet an A&R agent, and only very few out of all the acts that an A&R agent ever listens to attract the attention of the record executive. Eventually, only one artist ‘in a million’ will be heard by the mainstream audience on commercial radio stations” (Wikström 2013, 53).

(2) Publicity

The purpose of publicity is to increase the exposure of the product to the widest possible audience, normally through media coverage. The history of music promotion began with sales of sheet music for songs heard through recordings or public performances. The basic principle is to increase the odds of commercial success by providing positive impressions of albums to consumers. This means the campaign “can ‘reach’ sufficient numbers of their target market with the ‘frequency’ necessary for them to remember the message and act by purchasing” (Katz and Hepworth-Sawyer 2009, 213). The significance of publicity comes from its credibility as information rather than as a commercial product for which an advertisement is designed. Even though publicity is not influenced by market spending as much as advertising is, it would be naïve to believe that it is not somewhat affected by the power of marketing. Major labels have departments for this specific job, or sometimes hire independent publicists who have the capacity to promote their music to other promotion outlets. The extent of their capacity as publicists is directly correlated to the pedigree of their contacts within major media. Large independent labels also have their own publicity departments, but often publicity firms are outsourced for specific projects. The objectives of publicity can be

successfully achieved through the ripple effects of media exposure. In order to make maximum impact in the market, record companies usually undertake record promotion in tandem with publicity (Spellman 1996).

Figure 7. The Organisation of the Pop Music Industry (Hirsch 1969)



(3) Radio

Since its first popular use in the 1950s, radio has been the most influential outlet for our engagement with music. Frith (2002) calls it “the most significant twentieth-century mass medium” and emphasises that “radio is still the most important source of popular musical discourse, defining genres and genre communities, shaping music history and nostalgia, determining what we mean by ‘popular’ music in the first place” (Frith 2002, 201). Ever since radio emerged as a music discovery channel in the 1950s, radio airplay has been a crucial part of music promotion. The significance of the radio’s role in record sales was so great that record companies bribed disk jockeys to play their recordings. Known as “payola”, this practice was exposed and is now forbidden. The significance of the radio, however, has not withered, because of its essential ripple effect throughout media, which can ultimately lead to the success of record sales. The way radio stations choose playlists is determined by multiple factors. Not all radio stations are commercial

broadcasting stations, so not all are driven by commercial interests. As far as commercial radio stations are concerned, however, the principal aim is to generate revenue from advertisement. Radio stations, therefore, are inclined to broadcast popular music that caters to as many audiences as possible. The fact that most people tend to stay tuned to a radio station when they hear familiar music makes it difficult for radio stations to play experimental tunes (Frith 2002).

The task of getting a track on the radio in the first place is exclusive to market specialists called independent promoters, also known as pluggers. Lathrop (2007) gives a clear explanation for the way this process works:

“The placement of songs on commercial Top-40 and rock radio is handled virtually exclusively through the independent promotion system. Independent promoters establish close relationships with stations and networks that may involve making promotional payments for adding songs to playlists. And independent promoters may gain a ‘lock’ on a station or cluster of stations and become a kind of exclusive gateway between the stations and the record labels who want their songs played on those stations. With fewer ‘clusters’ around, the indie promoter with a lock on one wields a huge amount of clout and can command huge payments from record companies” (Lathrop 2007, 176).

3.2.4 Networks of Consumption

By enabling the recording of the ephemeral experience of performance, the phonograph signalled a shift in music consumption. Music listening and consumption were initially a public activity and a signal of status. Technological developments, in conjunction with societal change, have brought about significant changes in music consumption. The phonograph signalled the emergence of music listeners who enjoyed music on their own terms in time and space. The subsequent technologies of mass production and distribution enabled the industry to make music more affordable. This led to an increase in the number and strata of listeners with access to music. As a result, the demarcation between serious and non-serious music listeners became blurred. Adorno (1976) believed that the musical experience, which requires a deep emotional commitment, is

demeaned by the accessibility and affordability of music: music has become an easy pleasure, enjoyed by passive listeners whose consumption behaviour is concealed by the manipulation of taste by capitalist production. Critics of this approach place importance on the diverse social conditions affecting the music listening experience. For example, Hennion (2001) argued that taste in music is not entirely determined by external elements, but is conditioned by things “already there” as a social being. Although music is a very personal experience that functions as emotional agency, Frith (2002) stresses that musical activities are in essence a vehicle for communication and social activity, orchestrating the way we experience the world and therefore helping us understand who we are. From this perspective, the reasons why we like certain music or why certain music is popular is not an objective means of determining objective aesthetics of music, but a socially determined preference. The “popularity” of a song, therefore, is less an outcome of an absolute aesthetic definition than a socially determined collective consumption.

Since musical experience is such a collective and social activity, music is also deeply intertwined with the way we relate to society, other listeners and our identity. In other words, music listening is often a reflexive social practice in which tastes develop in the context of social relations (Hennion 2001). However, this does not mean that musical activity is confined to separate special occasions such as concert halls or theatres. Rather, music listening is an “anchoring practice”, in which music plays a role as an “aesthetic” and “affective” agency in our common mundane everyday experience (DeNora 2000). In this context, music listening is not exclusively either active or passive, but both for the majority of listeners (Bergh and DeNora 2009):

“The music is empowered in ways that in turn imbue its ‘passive’ recipients with forms of empowerment – or transubstantiation...Listening to recorded music was not predestined for the central place it eventually attained in modern life; but, in combination with cultural entrepreneurship, the increased reflexivity of modern life, and innovations in technology and distribution, it ended up being the normative mode of music enjoyment in industrialised societies” (Bergh and DeNora 2009, 115).

Nonetheless, this is not to say that consumers' choices are entirely free from market control. In fact, choices are highly contingent on market availability (Turow 1997; DiMaggio 1977). Although consumers' final decision on what to purchase and their capricious taste has always been a concern for the recording industry, their choices were constrained by many factors in the pre-digital era. First, there was a considerable limitation on consumers' access to available records. As described in Section 3.2.3, the available products were restricted through a pre-selection process and therefore audiences' decision-making was, to a certain degree, influenced by the market control mechanism. Another layer of filtering was exercised in the ease of access. Small independent retail stores remained important for music aficionados who sought niche genres of music, while large chains such as HMV or Tower Records were more accessible options for music consumption for the majority of consumers. These large chains, by way of buying power, exerted tremendous influence over the records displayed and thus influenced the "construct" of consumers' choices: their general tendency to stock the top-selling records worked as part of the filtering mechanism in which consumers were exposed to what was already popular.

3.3 Digital Technology in the Recording Industry

The introduction of the compact disc (CD) in 1982 marked the beginning of the shift from the analogue to the digital era in the music industry. The disruptive nature that this technological advance has brought was only realised later. When the CD was initially introduced, the recording industry welcomed the huge popularity it gained during the 1980s, as it appeared to be an incremental innovation – simply a shift in the recording medium for music content – which worked perfectly within the existing business framework, generating a whole new revenue stream of selling back catalogues. The possibility of multiple copying without loss of signal quality did increase the possibility of unauthorised copying of music compared to previous recording technologies such as cassette players. However, this affected only a small share of the music trade. It was only when Peer-To-Peer (P2P) file-sharing services arrived that the issue of technological innovation became particularly contentious (Ku 2002; Shirky 2001). The debut of Napster, a Peer-To-Peer (“P2P”) based digital file distribution technology, suggested the possibility of an imminent and radical transformation within the music industry.

Although Napster was the first widespread P2P file-sharing online music service, the cultural and technical framework predates Napster. In the wake of the computing industry’s growth in the 1960s, the so-called “hacker ethic” was forged, providing a set of principles and values that represented the counterculture shared by the hacker community (Allen-Robertson 2013). At the heart of hacker ethics lies a firm belief that computers can be a vehicle for a better world by enabling us to achieve freedom of information and challenge authority (Levy 2001). With a strong connotation of libertarianism, hacker ethics are situated within a value proposition that hacker ethical codes could be used to emancipate the community from the constraints of capitalism (Himanen 2001). The alternative to capitalism, hackers believed, was their subcultural values: free distribution of information and collective altruistic intention with no commercial aspiration would fulfil a wide array of social and cultural needs. These values became strongly associated with the subsequent development of P2P technology (Allen-Robertson 2013). They also influenced the formation of much of the academic and policy discussions on digital culture (Lessig 2001; Vaidhyanathan 2001; Benkler 2006). Their view is deeply rooted in the idea that unrestricted access to information and

the subsequent changes in social practices of sharing should prevail in the digital communication environment. The radical idea that music, as information, should be free on the digital distribution network stood at sharp odds to the existing industry structure, where control and exploitation of information was of prime importance. Just as ideas of hacker ethics have been drawn into “a moral binary in which hackers are either lauded or denounced” (Coleman and Golub 2008), Napster has become a conflated technological and social phenomenon, either hailed or vilified as the harbinger of the digital disruption to the prevailing structure of cultural industry. The next section explores how this dichotomous view of digital disruption in the music industry was formulated in the face of technological change.

3.3.1 Digital Disruption in the Recording Industry

1) Views on Dystopian Vision

Napster and later P2P file-sharing networks disrupted the economics of the recorded music business practices of granting exclusive rights to copy. As reflected by the accelerating pace of adoption, this change was desired by the public, but was perceived as a threat by recording companies, who had a vested interest in the legal and economic structures through which exploitation of copyright was institutionalised. Chief among the concerns was the duplication of perfect copies at a cost close to zero, which facilitated the large-scale distribution of free music through P2P file-sharing networks. The consequence of the recording industry’s slow response was immediate. Record sales spiralled downward. The radical transformation and immediate demise of the industry were predicted. The primary evidence supporting this argument was the decline in record sales: the revenue from recording sales reached its peak in 2000 and plummeted until the growth of streaming services in 2008 (Lampel, Bhalla and Jha 2006; IFPI 2009). Describing it as “digital piracy”, the recording industry accused P2P file-sharing of being the primary cause of sales loss. The rhetoric of “piracy kills the industry” was highly publicised in a public campaign, in which P2P file-sharing activity was denounced as a crime of “music theft” (Siwek 2007). The notion of a terminal crisis of the recording industry was formulated. In 2000, IFPI released a special report on piracy named “IFPI

Music Piracy Report 2000,” and decried piracy as the threat to the fiscal soundness of the creative industry as a whole. The report says:

“The spread of piracy, both of CDs and on the internet, is the greatest threat to the legitimate music industry. The future of a dynamics creative sector, of artists’ livelihoods and of hundreds of thousands of jobs are all at stake. The need for governments worldwide to provide strong laws, effective enforcement and adequate deterrent penalties against piracy has never been greater” (IFPI 2000).

The decline of record sales was frequently equated with harm to artists, musical experience and cultural creativity. For example, the Recording Industry Association of America (“RIAA”) asserted,

“While downloading one song may not feel that serious of a crime, the accumulative impact of millions of songs downloaded illegally – and without any compensation to all the people who helped to create that song and bring it to fans – is devastating” (RIAA 2007).

In a speech endorsing HADOPI law,⁵ Nicolas Sarkozy, President of France echoed this rhetoric:

“We run the risk of witnessing a genuine destruction of culture...The internet must not become a high tech wild west, a lawless zone where outlaws can pillage works with abandon, or worse, trade in them in total impunity. And on whose backs? On artists’ backs?” (Reuters 2007).

IFPI has repeatedly reported a massive decline in sales. Up until very recently, this notion of a “digital crisis” has consistently been recited to describe the economic downturn of the recording industry (Rogers 2013; Hesmondhalgh 2009; Marshall,

⁵*Haute Autorité pour la Diffusion des œuvres et la Protection des droits d'auteur sur Internet*, also known as the three strikes law, is a legal means introduced to suspend Internet access when an Internet user is found to infringe copyright three times.

Williamson and Cloonan 2013). This rhetoric of irreversible decline has become a prevalent account in understanding the digital recording industry, and has been used to lobby for strengthening copyright protection, shaping legal regulations and conducting litigations (Hesmondhalgh 2006). In addition, major labels escalated their efforts to maximise their revenue by developing “legitimate” digital music distribution systems, for example enforcing Digital Rights Management (“DRM”) technologies in the digital environment (Hesmondhalgh 2006; Burkart and McCourt 2006; Cummings 2010; Rogers 2014).

2) Views on Promising Vision

At the other end of the spectrum, views on the promising potential of digital technology produced a utopian vision of the industry. This idea was instigated by John Perry Barlow, who published the influential articles “The Economy of Ideas” (Barlow 1994) and “A Declaration of Independence in Cyberspace” (Barlow 1996). He proclaimed that information in cyberspace “wants to be free” from physical containers and is intrinsically free of the control of the existing legal framework, which is designed to regulate physical products. The distribution mechanism of Intellectual Property Law was to protect “the ability to deliver [ideas] into reality”, not the ideas itself; he claimed it was doomed to collapse on the Internet. The difficulty of applying the traditional legal regime gave rise to disputes over the controllability of cyberspace. Nicholas Negroponte, a celebrated guru of the information age, proclaimed that “[c]opyright law...is a Gutenberg artifact”, becoming redundant in the Internet age, where it would “disintegrate”, with everything capable of being digitalised being potentially “up for grabs” (Negroponte 1996, 58). Moreover, digitalisation would serve to flatten the organisational pyramid and decentralise control, therefore effectively levelling the mass media playing field (Negroponte 1996).

Other pundits and academics joined the discussion and proclaimed that digital technologies would serve to bring about an imminent restructuring and the demise of the recording industry (Kelly 1998; Mann 2000; Shirky 2001; Alderman 2002; Knopper 2009). Their focus of attention was the fact that the development of cheap and easy means of music production and distribution enabled free exchange of music over the

Internet and P2P file-sharing networks, and thus undermined the long-established legacy of the recording industry built around the physical artefact. Greenfeld (2000) also pointed to the possibility of disintermediation “bypass[ing] the rats’ nest of legal and technical problems that kept great music from busting out all over the World Wide Web”, and stated that Napster had “changed the world” by “forc[ing] record companies to rethink their business models”. Described as “a tectonic upheaval in our commonwealth”, the fundamentally different logic of the network-based economy was conceived to cause the demise of the old economy on which modern capitalism relied (Kelly 1998). That is, an economy based on plenitude and generosity – known as the gift economy – would enable artists to build their own career, with the help of fans who would provide economic support in exchange for the free digital music available on P2P file-sharing networks. One of the widely-discussed cases of the successful adoption of this new mode of music distribution was the American rock band, The Grateful Dead, who distributed their music for free, bypassing middlemen (Alderman 2002). This revolutionary approach was conceived as a threat to the recording industry, but was hailed as a means of providing ultimate benefits for artists and fans in the digital age (Alderman 2002; McLeod 2005). From this viewpoint, the unparalleled opportunities of the digital age are something that should be embraced. Therefore, the recording industry’s resistance to this new world of possibility, for example via legal measures against P2P file-sharing applications and their own fans, was criticised as “an appetite for self-destruction” that would lead to the restructuring or demise of the recording industry (Knopper 2009).

In a similar vein, Kusek, Leonhard and Lindsay (2005) refute the recording industry’s claim of the economic crisis in the digital age. They point out that the digital mobility which requires ubiquitous interoperability does not fit into the current value paradigms constructed to protect the physical product and that the obsession with control of the media oligopolies would lead to the outmoded business model that does not fit into the digital paradigm. They liken P2P file-sharing to cable television, which was once illegal but became legitimate via compulsory licensing to compensate the broadcasting companies. Proposing the vision of “music like water”, they suggest the ubiquity of music should and could be cherished with a utility structure, charging people a monthly fee similar to the charge for water or cable bills.

Other scholars have paid a great deal of attention to the difficulty of control wrought by decentralised networks. Goldsmith and Wu (2006) offered a discussion of the initial vision of the borderless world of the Internet and the contingent issues of control. Ku (2002) went further, claiming that copyright is no longer needed to encourage distribution because consumers themselves could build and fund distribution channels for digital content. He argued that in this process of creative destruction, digital technology and the Internet strike at the foundation of copyright and the industries built upon copyright by eliminating the need for firms to distribute copyrighted works and for exclusive property rights to support creation (269). He therefore argues that:

“The economics of digital technology also suggests that exclusive rights created by copyright are inconsistent with society’s interest in promoting the creation of new music and making music widely available to the public...When the rights of distributors are unbundled from the rights of creators, the case for protecting the rights of distributors cannot be supported. Under these circumstances, copyright serves no purpose other than to transfer wealth from the public and artists to distributors. In this case, the use of Napster is not theft – copyright is theft.” (Ku 2002, 305).

In this context, new opportunities such as lowered barrier to entry, including cheaper and more powerful tools of music production and dissemination are understood to level the playing field (Théberge 2001; Bakker 2005). Benkler (2006) states that digital technology and peer production offered an opportunity to reverse the long-lasting trend of the pre-Internet era typified as capital-intensive production and centralisation of information. He says:

“The modern communications medium that expands its reach by decentralizing the capital structure of production and distribution of information, culture, and knowledge...[offers] the promise of a deep change in how we see the world around us, how we come to know about it and evaluate it, and how we are capable of communicating with others about what we know, believe, and plan” (Benkler 2006, 30–4).

He stresses that the non-proprietary production enabled by digital technology offers the opportunity to shift our means of producing, distributing and consuming cultural works to a socially beneficial method. The new means of production will increase productivity by removing exclusivity and diffusing the information “beyond the circles of the wealthiest nations and social groups” and, thus, will boost social welfare, justice and human development in general (Benkler 2006, 464).

This claim has resonance with Hippel (2005), whose main concern was the impact of innovation on democracy. He states that an open and distributed user-centred system contradicts the conventional structure of business, but a democratised and user-centric system is of crucial importance in the development of innovation. The radically different nature of digital technology would require a change in traditional policy, which has tended to favour the long-held business models. However, the welfare-enhancing values that innovation could bring, he stresses, make it worthwhile to strive for this, and the net result of adapting to a user-centred system of innovation will be “an ongoing shift toward the democratisation of innovation.” To Jenkins (2006), the quintessence of the innovation of digital technology is its crucial role in cultivating participatory culture. He defines the current culture as convergence culture, in that digital technology enables the media, producer and consumer to converge on multiple media platforms. He points out that this new culture offers the opportunity for us to avail ourselves of a more democratic and diverse society through more responsive media interactivity. Inspired by these opportunities, especially the ease of remixing by normal Internet users, Lessig (2008) stresses the necessity of building a cultural commons in the digital era. In his book, “Remix”, he explains how digital technology has changed the culture from RO (Reading Only) to RW (Read and Write), which signifies the shift of consumers’ role from passive receivers to active producers. He argues that this culture, empowered by digital technology, improves efficiency and diversity and is crucial in shaping the future. Zittrain (2007) agrees that, in contrast to the ‘walled garden’ characterised by early networks, the future of the Internet lies with harnessing the power of ‘generativity’ whose resilience to change operates better in the digitally networked environment.

For a brief period of time, this vision seemed to have been an accepted as a cultural icon

and social practice, with its success owing to its easy-to-use application, immense and diverse catalogue and global content distribution network (Benkler 2006, 424). The ubiquity of the music listening experience received significant attention, with Goldstein (1994) using the term “Celestial Jukebox”. He describes it as:

“A technology-packed satellite orbiting thousands of miles above the Earth, awaiting a subscriber’s order – like a nickel in the old jukebox, and the punch of a button – to connect him to any number of selections from a vast storehouse via a home or office receiver that combines the power of a television set, radio, CD player, VCR, telephone, fax, and personal computer” (Goldstein 1994, 22).

The elevation of this practice as the heavenly cultural form is twofold: it is “perfecting the law’s early aim of connecting authors to their audiences, free from interference” (Goldstein 1994, 216) and has the potential to monetise every use of the sound, which relates to Goldstein’s assertion that “the best prescription for connecting authors to their audiences is to extend rights into every corner” (Goldstein 1994, 216).⁶ The Celestial Jukebox, where music fans can enjoy the immeasurable scope of music choices, combined with peer-review and viral impact on the Internet, would help fans to discover lesser-known or unknown music, therefore contributing to the achievement of the beloved cultural attribute where a diversity of music choices would flourish (Mann 2000; Pasquale III, Weatherall, and Fagin 2002).

⁶ This view was highly criticised by Burkart and McCourt (2006), who maintained that the digitalisation of music would serve to tighten global recording companies’ grip on the digital music distribution platform and thereby reinforce the oligopoly through the existing market strategies and copyright enforcement. As long as the fundamental power structure persisted in the music industry, they argued, the Jukebox system would not be “a gateway onto a garden of cultural abundance” but instead would “become a tollbooth into a web of privately owned and operated networks where traffic in intellectual property is carefully monitored and controlled, a walled garden of closed networks with restricted access and tightly circumscribed activities (Burkart and McCourt 2006, 4)”.

3.3.2 P2P Technology

1) P2P File-Sharing and Record Sales

Many academic and media accounts portrayed major recording companies as bureaucratic behemoths, “an industry struggling to maintain control and remain relevant in the face of digital satin” (Alderman 2002). They pressed the need to embrace the radical changes that could fully materialise the great potential of digital technology. Stating that “the genie is already out of the bottle”, they conceived this change as an important and irresistible opportunity (Kusek, Leonhard and Lindsay 2005; Benkler 2006; Cammaerts 2011). Benkler (2006), for example, stated,

“The genie of p2p technology and the social practice of sharing music, however, were already out of the bottle. First, it shows how institutional design can be a battleground over the conditions of cultural production in the digital environment. Second, it exposes the limits of the extent to which the institutional ecology can determine the ultimate structure of behaviour at a moment of significant and rapid technological and social perturbation” (Benkler 2006, 420).

As P2P file-sharing has been blamed for loss of sales by the recording industry, considerable attention has been paid to examining the relationship between these two aspects. Zentner (2005) used a panel of European countries to examine country-level differences in broadband and its impact on music sales. The analysis, combined with individual surveys, demonstrated that P2P file-sharing led to a 30% decline in music consumption. Liebowitz (2006) was adamant that P2P was detrimental to the whole of the music industry, since it negatively affected music sales. He denied the derivative impacts that file sharing could bring and argued that the network effect, if there was any, did not seem to be large enough to change the music market. He also raised doubts about the additional impact that file sharing could generate when radio already provided unlimited free music listening.

Other scholars came to contrasting conclusions. Oberholzer-Gee and Strumpf (2007) analysed a large file-sharing dataset in the US and compared it to the concurrent US weekly album sales data, proving that file-sharing had a negligible effect on music sales. Handke (2010) investigated the supply side of the business. He provided evidence that the number of albums released in the US and Germany, as well as the number of new players in the label business in Germany, had not declined in the previous decade and argued that file-sharing had not interrupted supply in the creative production of the music industry. Blackburn (2004) observed a close correlation of CD sales and file-sharing: declining sales of CDs immediately following the appearance of file-sharing in the market, and an increase in CD sales when file-sharing declined. He acknowledged the negative impact that file-sharing had had on industry sales, but at the same time observed a beneficial effect on lesser-known artists. He demonstrated that greater exposure of music through file-sharing networks contributed to more sales of music for lesser-known artists, though it was the opposite for popular artists.

This discussion of the impact of P2P file-sharing on music sales treats the point of sale as the only point impinging upon music. This proposition is primarily predicated on the pre-digital music business structure built around physical artefacts such as CD or vinyl. Other scholars, therefore, proposed an alternative way of understanding P2P technology and music sales. Marshall (2005) stresses the beneficial impact that P2P technology brought to the industry. He denounces the claim that P2P is to blame for lost sales as exaggerated rhetoric, and stresses that P2P has proven to be conducive in building fan loyalty. Gayer and Shy (2006) demonstrate that copyright enforcement could have a different impact on publishers and artists. The widespread unauthorised sharing of music, they argue, might be a bane to publishers, but could be a boon to artists. In other words, the increased exposure of the music could lead to an increased demand for live performances, which are an important source of income for artists. Likewise, the elimination of illegal copies could reduce an artist's fan base, which would be detrimental. Mortimer, Nosko and Sorensen (2012) analyse this influence on artists, paying special attention to live performances. They observed the changes in live performances since Napster. The data they provide has proved that file-sharing helped redistribute music to a wider audience. The increased awareness of artists led to an upswing in revenue from live concert performances. This was particularly stark in the

case of smaller artists, though it had little impact for large artists whose record sales have declined. This complementary impact enabled by digital technology, they suggest, should be interpreted as an indication that the losses illegal redistribution might have caused can be offset.

2) Debates on Piracy

Some of the criticisms were levelled at the unfair protection of intellectual property tilted toward the recording industry. Ginsburg (2001) points out that legal decisions surrounding copyright have been interpreted in favour of giving control over the market to authors or artists. She contends that copyright control by authors should take into account the fact that unlicensed distribution of works could benefit the public by offering more and diverse creative works. Litman (2001) questions the very notion of piracy. She emphasises the need to distinguish “unauthorised” use from “illegal” use, in that unauthorised use can bring benefits to society by facilitating dissemination of cultural products and encouraging continued creation of new works. The content industry, she argues, has ascribed a moral value to the term “piracy” for their own benefit. A similar view was expressed by Marshall (2004), who argued that piracy is a value-laden term stigmatising all types of unauthorised use of copyrighted material. He contends that there are different types of variables in determining piracy; for example, counterfeiting, pirating, bootlegging, tape trading, CD burning/home-taping and file-sharing all have different impacts and values. However, what is important to the industry, he argues, is its rhetorical power, rather than the economic effects for which the term has been used. He says:

“To a certain extent, none of the above matters. In terms of the importance of piracy for the recording industry, what matters is not its economic effects but its rhetorical impact. We will never be able to ascertain the economic effects of piracy accurately, but piracy is not primarily an economic concept: it is an ideological one. Copyright protection is not a natural right, nor is it absolute: it is a socially mediated relationship between publishers, artists and the public. The particular rights granted and withheld by copyright at any particular time reflect

wider power relations between these parties: ‘copyright’ is not a static thing, it is a constant struggle between competing interests” (Lee Marshall 2004, 197)

Over time, the so-called “war on piracy” intensified; subsequently, the coverage and duration of copyright protection to reduce piracy were extended. The impact of legal measures on file-sharing users or file-sharing services proved to be limited affecting only locally (Lauinger et al. 2013), immediate but short-lived (Poort et al. 2014), or benefiting big corporations only (Danaher and Smith 2013; Peukert, Claussen, and Kretschmer 2013). Some also raised concerns that these legal actions could stifle innovation and online sharing culture (Lemley and Reese 2004 ; Cammerts, Mansell, and Meng 2013).

Oram (2001) provides a more nuanced view of how P2P technology, as a disruptive technology, could be harnessed in a beneficial way. By bringing together experts with diverse backgrounds in P2P technology, his book discusses the potential way P2P technology could be used, practical examples of its usage and the obstacles that need to be overcome. Giblin (2011) traces the history of the court rulings on P2P technology-based services such as Napster, KaZaa, Grokster and BitTorrent. She raises questions about the applicability of two crucial grounds on which the court relied to determine the services as illegitimate: contributory and vicarious liability. She also demonstrates how the courts used an arbitrary interpretation of the liability, which, she argues is based on the physical world and is therefore mistaken.

Various researches have investigated the determinants of P2P file-sharing activity. Eijk, Poort, and Rutten (2010) examined the relevance of P2P file-sharing with legal, economic and cultural contexts. Watson, Zizzo, and Fleming (2014) developed it to take account of six factors relevant to P2P file-sharing: financial and legal factor, experiential factor, technical factor, social factor, moral factor and demographics. Brown (2015) looked at psychological factors involved in file-sharing. No research so far has identified significant deterrent of P2P file-sharing except technical factor. What this result suggests is that despite the widely perceived notion that digital music users want free music and stronger legal protection will decrease music piracy, no strong indication was observed from financial or legal factor to deter music piracy, whereas the availability of contents on P2P file-sharing networks is the main facilitator of P2P file-sharing activity.

The existing discussion on digital technology following the introduction of P2P technology has focused on the disruption of the existing market, with industry players expressing concerns about its impact on piracy. However, if we seek to understand how technological changes have affected the recording industry, we need a broader perspective. This should look at the whole system, including legal, social and technological dimensions, and, in particular, consumers' role in shaping the changes, which has rarely been discussed.

3) Technological Trajectory of P2P Networks

This section explores the development of P2P networks. Distinct from the prediction that they could be at the centre of digital music distribution, promotion and discovery, P2P networks evolved in a very different direction as a response to the court decisions relating to their precedent P2P technologies. Since the decision by Ninth Circuit about Napster⁷, which ruled Napster responsible for copyright infringement based on the “actual knowledge” of users' infringing activities, the trajectory of P2P technology has developed following the “roadmap” of the court decisions of the precedent P2P technologies. The court rulings suggested that the more decentralised P2P networks are, the more legitimate they could be. This forced subsequent P2P networks to avoid having a central control (Nasir 2005).

- MyMp3.com and Napster

Before Napster, there was MyMP3, which was purely a client-server model.⁸ Its web-based service uploaded a huge amount of albums and songs to its server and allowed users to listen to songs at the MyMP3.com website as long as the site recognised the legally purchased CDs uploaded by the users to their computers. In the case of UMG v.

⁷ A&M Records, Inc. v. Napster 239 F.3d 1004 (9th Cir. 2001)

⁸ Distinct from “pure P2P network”, a disintermediated application enabling direct communication amongst peers without gatekeepers, a client-server model is a hierarchical architecture which uses a server to initiate and control communication. For more discussion, see Wu (2003).

MyMP3.com⁹, the court ruled in favour of the record labels that MyMP3 had infringed copyright by using mechanical copies of sound recordings without permission from copyright owners. Napster improved the model by combining a client-server model with a peer-to-peer network. This meant that users searched for files from an index located on a central server run by Napster, and exchanged the files with other users. The architecture was improved to facilitate the database search and mediate connections between peers. Although the legality of Napster was not a question from the outset, after a series of litigations, Napster's illegality became set in stone (Knopper 2009). The court ruled that Napster was held for a secondary liability: Napster did not commit copyright infringement directly, but was "aiding and abetting" copyright infringement. The two legal grounds of this decision are vicarious liability and contributory liability. Vicarious liability rests on the ability to control and potentially receive financial benefit, and contributory liability is applied based upon the knowledge of infringing activity.

The precedent decision Napster relied on was the so-called Betamax decision (Sony v. Universal Studios (1984)¹⁰). Based on the fact that substantial use of the new technology "Betamax" was for a non-infringing purpose, the court held that Betamax's recording capability to "time-shift" a broadcast programme so as to watch it at a more convenient time should be considered fair use. The court ruled that although Sony knew that the technology could be used for infringing purposes, it could "merely be capable of substantial non-infringing uses". This meant that Sony could not have specific knowledge about when and by whom the infringing use was taking place. Therefore, it did not constitute contributory infringement if the product could be widely used for legitimate purposes. The centralised database on Napster, however, meant that Napster did have actual knowledge of copyright infringement and therefore a capability to block the infringing conduct. Napster's case taught important lessons to future P2P developers in avoiding contributory liability (Giblin 2011). Subsequent P2P networks, therefore, became much more decentralised.

- Aimster

⁹ 92 F. Supp. 2d 349 (S.D.N.Y. 2000)

¹⁰ 464 U.S. 417

Aimster was a file-sharing service used in conjunction with the AIM instant messaging (“IM”) service. On this IM network, users could share files with nominated “buddies”. Developed in August 2000, right after Napster’s court case, Aimster “was blatantly coded with avoidance of the US secondary liability law in mind” (Giblin 2011, 47). Like Napster, it had a central server, but it used encryption technology to make it impossible to know exact information about the file sharing and therefore keep Aimster immune from secondary liability. However, the court ruled that Aimster was liable both for contributory and vicarious liability. In the *Aimster Copyright Litigation* decision in 2003, the court held that Aimster’s primary objective was to “influence and encourage” infringing uses, and therefore it was not an “innocent enabler” like Sony. Aimster was also ruled to be liable for vicarious liability for developing encrypted communication. The court’s narrow interpretation of the Sony decision prompted much criticism that it was stifling innovation by forcing developers to “be concerned about whether non-infringing use of that technology will not only [be] ‘substantial’ but perhaps whether it will be the primary use, as well as whether she will be able to prove that substantial or primary use in court” (Lemley and Reese 2004, 1362).

- Gnutella

Justin Frankel, a Winamp developer, and his colleague Tom Pepper wrote a brand new protocol to solve Napster’s legal vulnerability. The end result was the Gnutella network, an Open Source based project which radically decentralised the system and overcame the legal throttle that brought about the downfall of Napster. Unlike Napster, Gnutella did not store the file directory on the central server, thus avoided the secondary liability that had brought down the preceding P2P networks (Strahilevitz 2003). The removal of the central server, however, resulted in a few challenges. There was no place to initiate the network. To overcome this issue, the developers enabled all users’ computers to bootstrap onto the network as mini-servers. Once connected, clients communicated with one another, rather than the central server, in order to exchange files. Gnutella’s radically decentralised network, enabling peer communication on P2P networks without any intermediation, took P2P technology to another level and successfully avoided legal liability.

- FastTrack

A new class of P2P file sharing network was born from Gnutella. Dutch programmers Niklas Zennstrom and Janus Friis developed a protocol called FastTrack; Kazaa was the client application for end users to communicate with the FastTrack network. Instead of having a central index, it used supernodes as temporary index servers, which placed FastTrack in between the centralised Napster and the decentralised Gnutella (Giblin 2011). It improved Gnutella's bottleneck problems by distinguishing nodes (ordinary users) from supernodes (the best-resourced users). By enabling users to communicate with the nearest supernodes, the system ensured that users could connect to the most powerful computers on the network. As FastTrack reached similar levels of popularity to Napster, the Dutch International Federation of the Phonographic Industry filed a suit against it. In January 2002, the hefty fines from the court ruling forced the developers to sell it to Sharman Networks (Drumm 2003). With regard to this development, Giblin (2011) says:

“Gnutella and FastTrack were each deliberately and carefully engineered to exploit the physical world/software world divide by eliminating the control that was essential to liability under the post-Napster law. Their developers had carefully followed the Ninth Circuit's ‘roadmap’ by ensuring they did not provide any ongoing service or give their providers control over the networks. Their networks were so decentralized that they could and would continue operating regardless of the actions of the defendants” (Giblin 2011, 64).

- Grokster and Morpheus

FastTrack had two other offspring; Grokster and StreamCast's Morpheus used Kazaa licenses. Grokster and Morpheus bore many similarities in technically, but the latter left more of a mark legally. Grokster and Morpheus also did not maintain any central indices. There was no centralised control over the file-sharing activity on these platforms. Their platforms were decentralised to the extent that even if Grokster or StreamCast were closed down and all the computers within the control therefore deactivated, users could continue sharing files. In the case of MGM Studios Inc. v.

Grokster Ltd.¹¹, the Ninth Circuit rejected contributory liability and held that Grokster and Morpheus could not be held liable since they did not provide the “site and facilities”. They did not have actual knowledge of infringement, and therefore could not stop particular infringements. Vicarious liability was also rejected due to the fact that the defendants could control the file sharing networks. The US Supreme Court, however, soon reversed this decision. The Supreme Court created “a new theory of liability” and concluded that Grokster had “bad intent” to induce infringement (Giblin 2011). This decision was criticised, with claims that the decision offered innovators of dual-use P2P technologies substantially more protection against the danger of secondary liability for their users' acts of copyright infringement than did the Napster and Aimster decisions (Lemley and Reese 2004).

-BitTorrent

BitTorrent was developed in 2002 by a programmer Bram Cohen. Initially it was developed to solve the slow file-swapping problem that the Jamband community experienced when sharing large files at etree.org. Its efficiency was soon discovered by other Internet users who wanted to swap other types of large files. The essence of BitTorrent's efficiency lay in its re-allocation of bandwidth usage. The problem was that there were more users downloading than uploading, which slowed down the file-sharing process. Unlike previous P2P networks, which treated all users equally, BitTorrent distinguished between those who uploaded (seeds) and those who downloaded (leeches) – a group of seeds and leeches was called a “swarm”. Once a file was uploaded, it was cut into many pieces. Everyone who shared the file was given a piece of the file, uploading and downloading simultaneously. This was to ensure that each swarm was committed to a distributing network, and to minimise the bandwidth of the original seed. This way, everyone who had a piece of the file associated with a particular torrent was sharing the file with one another, instead of downloading from a single source. BitTorrent gained a sudden peak of popularity after the Grokster decision in 2007. While efficiency had to be compromised by decentralisation in previous P2P networks, Cohen overcame this issue and ensured both high efficiency and liability resistance

¹¹ 545 U.S. 913 (2005)

(Giblin 2011). With the court's ever-expanding provision of legal protection, BitTorrent could have been sued for inducement and authorisation (Giblin 2011). The "inducement" theory enacted in Grokster case successfully closed down Limewire, a P2P filesharing website which once had 50 million monthly users, in October 2010¹². The legal victory the recording industry achieved has been so triumphant that a mere intimidation of cease and desist letter from RIAA was enough to shut down eDonkey, another popular P2P filesharing website. However, the BitTorrent software providers have never been sued for copyright infringement, because suing companies like BitTorrent would have no impact on file-sharing. Underlying problem was not only the victory has been rather pyrrhic (Bridy 2009), the entertainment industry faced the dilemma that the very legal measures they lobbied for became the bottleneck of controlling the problem they wanted to solve: Legal precedents directed the P2P file-sharing networks to be decentralised to the extent that even their own legal measures are incapable of controlling them. That is, even if the client site is shut down, the legacy users still can swap files, new clients can easily be made, and the legal measures might have to go too far-fetched to control the globally distributed files (Edwards 2011). As a result, the entertainment industry have turned to seek for different types of measures which involves "ISP co-operation" by introducing "graduated response" or "three strikes" laws for ISPs that control access to the Internet¹³, or cutting off access to torrent sites or 'cyber lockers'^{14,15}.

3.3.3 The New Music Economy

Following a period of trial and error after Napster to identify a viable model for digital music, the music industry is entering a new phase in which consumers are more

¹² *Arista Records LLC v. Lime Group LLC*, 715 F. Supp. 2d 481 (2010)

¹³ Through ISP monitoring, users receive notifications in the case of alleged copyright infringement. In the third notification, users could be subject to the Internet connection suspension.

¹⁴ Internet service hosting websites that provide file-storing or file-sharing service for media files and data.

¹⁵ For more detailed discussion on the pros, cons, and unintended consequences of 'graduated response', see Edwards (2011).

attracted to legitimate digital music services than free, often illegal, options. Central to this change is the growth of the freemium-based streaming music business service, spurred by Spotify. Spotify's allegedly "legal and superior [to P2P] quality" of music service, as well as its huge number of legal catalogues, has proved enticing enough to attract 100 million paid users. While still in their infancy, streaming music services are perceived as the solution to the recording industry's struggle to eliminate piracy and to make people pay for music. Since 2013, the revenue from digital music has become a significant source of income for the recording industry, and streaming services are the largest contributing factor to that growth (IFPI 2014).

In understanding this change, two claims have gained particular prominence. One strand of understanding places much focus on the apparent changes in the digital environment, such as the new set of opportunities enabling artists to reach out to their fans without the mediation of gatekeepers. By placing a great emphasis on discontinuity, authors of this opinion tend to conceive these novelties as a sign of transformation and celebrate them as cultural vitality. At the other end of the spectrum, there are sceptical approaches whose central point lies in the continuity of the existing framework. Their view is that the contemporary digital music business has not tapped into the revolutionary potential of digital technology; rather, it has come at the expense of preserving the old regime and therefore will ultimately lead to reinforcing the power imbalance and the legal structure suited to the small number of large record labels.

This section examines the dominant discourses on recent changes in the music industry in three sub-sections. It begins with a discussion on the changes with regard to Web 2.0 and cloud technologies by looking at media that affects the way music is promoted and the role of the user as a "prosumer" (a word combining producer and consumer). It is followed by a discourse on the implication of P2P file-sharing distribution and legitimate music distribution channels. The section finishes with a discussion on whether the changes that have emerged in the digital era have reshaped the market structure.

1) Web 2.0 & the Cloud

Many accounts see Web 2.0 as significant technology that has brought about a shift in the music business. Three major changes that Web 2.0 tools have enabled are increased accessibility to musical offerings, unprecedented degree of control over music recording and distribution for artists and flattened relationships between artists and audiences. With the rise of Web 2.0, many scholars have paid attention to the reconfiguration of the music industry resulting from these changes.

Young and Collins (2010) investigate the changes in the value chain between artists and consumers. From observation of the increased accessibility and ease of use of the tools that are now available to musicians and audiences, the authors argue that these new technologies have enabled a “seismic shift” in the music industry (Young and Collins 2010, 341). From their perspective, this shift is manifested in the entire value chain of the music business, from production, distribution and promotion to consumption. In production, affordable music production tools such as Cubase, ProTools and Ableton Live have enabled bedroom artists to produce a professional level of output. Once music is created and uploaded, Web 2.0-based services such as Last.fm or Pandora help artists to reach niche markets. On this platform, music fans are becoming collaborators in the act of musical production, an idea Jenkins (2006) calls “participatory culture”. The direct connection between musician and audience, not only via the traditional means of music itself but also through different communications channels, they denote, encourages disintermediation in the new economy. Artists such as Radiohead, Nine Inch Nails, the Arctic Monkeys and Prince are often referred to as examples that epitomise the success of artists’ careers without conventional gatekeepers’ help. These artists acknowledge that their fame, achieved with labels’ help, in their early career was crucial to this manoeuvre. Therefore, they think this new mode of communication should be understood as a “viable alternative business model” and not equivalent to the disappearance of record labels.

Preston and Rogers (2011) examine why these new opportunities are “viable alternative business models” but have not brought about disintermediation. Although there is an increased range of social networking sites and “do-it-yourself” tools available to artists and audiences, they contend, the recording industry has also been “highly innovative” in embracing these new changes (Preston and Rogers 2011, 9). They argue that the major

recording companies have adopted 360-degree deals and new licensing terms with artists, forged alliances with social media companies and embraced digital platforms for legitimate music distribution. As to the role of social networks as a promotional tool, they contend, social networks, although important, have not proved to be efficient enough to replace the traditional intermediaries: entering the mainstream market is still largely dependent on deals with major labels.

While these accounts have focused on the changes that have surfaced, other scholars have looked at different elements in play. For example, Spilker (2012) examines how digital technology has transformed the relations of music production and distribution. In order to explore how social and technical elements are weaving together to reshape the value chain, he draws upon Th  berge's (2004) notion of "the network studio," which offers artists an unparalleled degree of control over their music production at lower cost. His empirical analysis of interviews with Norwegian musicians demonstrates that home-based studios have not displaced professional studios; rather, they have rendered professional studios more significant. He interprets this finding in the context of musical networks (Leyshon 2001) or the production and consumption systems of the music industry (Burnett and Weber 1989), and suggests that the music industry has successfully guarded its stance as an intermediary. Therefore, the new digital practices, he argues, can be appropriately understood as "pre-distribution networks". Prior (2010) explores the shift of digital production from the perspective of sociotechnical terrain. He argues that a lowered barrier to entry, including cheaper and more powerful tools for music production and dissemination, has generated a wide range of options for artists to shape their career, leading to the emergence of a breed of "new amateurs" (Prior 2010). During the 20th century, the amateur remained at the fringe, pushed out by the groups of professionals with commercial interests. The new set of digital tools, he postulates, have enabled this new digital offspring of "technologically literate, seriously engaged, and committed practitioners" to be on a par with professionals in terms of sound recording standards, without the mediation of conventional gatekeepers (Prior 2010). Although some of the thresholds are indeed abolished, the author states, this new change is convergent rather than revolutionary, in that the structural continuity is still less suited to this new type of artists.

Great attention has also been paid to the changing dynamics between fans and artists. Théberge (2006) has looked into how the Internet fan club has become an important medium between fans and artists and argues that the unprecedented degree of access has enabled both fans and artists to engage with each other in an ongoing and reciprocal way. Although fan culture used to be interlinked with super stars, the Internet, he argues, has made fandom “quotidian”. He labels this new mode of relationship as “everyday fandom”, which enables fans to become deeply engaged with artists in mundane but intimate ways. This “everydayness” of the dynamics between fans and artists, he argues, renders fandom even more significant to artists’ careers. As a more diverse array of tools has arisen to help fans engage with artists, Galuszka (2015b) investigates how this new way of building a fandom is used in the new means of social media. He identifies five forms of fandom that contribute to artists’ career-building without help from record labels: sponsors, co-creators of value, stakeholders, investors and filters. In this research, he demonstrates that the relationship between fans and artists is active, ongoing, reciprocal and sometimes essential to artists’ careers. He defines this new fandom as a “new economy of fandom”, in which fans are empowered to democratise some aspects of the business structure by enabling artists to bypass the mediation of conventional gatekeepers.

There have been attempts to understand these changes in the context of the industrial development process. Wikström (2013) draws upon distinctly new features that have emerged in the digital era – enhanced connectivity and loosened control over music, music as a service and increased opportunities for amateurs’ creativity. A hallmark of these changes is the ubiquity of music enabled by digital technology, which he calls “the music in the cloud”. For him, these changes signal “the new music economy”, which has disrupted the basic principle of the conventional music industry in which the music is turned into a rival good “to create an artificial supply deficit, to control the distribution and to uphold the consumer price” (Wikström 2012, 89). Web 2.0 technologies, combined with the Internet cloud, have brought about two major changes in the interplay between audience, media and music (which he calls the “audience-media engine”). One of these changes is music fans’ greater participation in the process of music production, promotion and distribution. The diversified music listening outlets have accelerated audience fragmentation and thus disrupted “the fundamental logic of

the old music economy [which] rests on the assumption that ‘distributing’ music for free via the radio and television will stimulate the demand for the same kind of music distributed via CDs and cassettes”. In other words, the distinction between promotion and distribution outlets has become blurred, and poses a challenge to the conventional way of controlling the market. By making use of copyright, he argues, the recording industry is striving to survive the new music economy, where provision of music has become a service, not a product, and access has replaced ownership. This concept is further developed in his recent article, “A Typology of Music Distribution Models” (Wikström 2012). In this article, he classifies digital music distribution models into ownership, access and context models. He defines the context model as a service that enables users to tinker with music in ways such as searching, sharing and playlisting songs. Because the context model services leave much more room for innovation of original or creative features, he contends, the economic value of digital music can be created more from the context model than from either the ownership or access model. Although his approach provides a rich account of the way digital production and dissemination of music has been reconfigured, the discussion largely centres around the view of the benefits for major recording companies, and thus gives little attention to the underlining dynamics surrounding the complex interplay amongst other heterogeneous actors contributing to the change.

2) File-Sharing v. Legitimate Digital Distribution

As legitimate digital music distribution is making inroads towards wide scale adoption, P2P file-sharing networks are increasingly estranged from the initial vision of these developments. Many studies have drawn attention to the implications of this change. One strong strand of studies has been developed to ascertain the market growth. These studies tend to emphasise the novel changes that have surfaced through the new digital music consumption platform. Spotify, especially, has provoked an optimistic view of the future of the industry. For example, newly adjusted rights and services suitable for digital formats and the diversification of revenue streams for artists have prompted some scholars to proclaim that technological innovation has now been achieved in the music industry (Roberts 2011; Pollack 2010). They emphasise the unprecedented access to music the streaming business provides, and point out its great resemblance to P2P

services in terms of its ease of use, though it is entirely legal. Thereby, Spotify is acclaimed as “an elegant application, by far the simplest, easiest way to listen to digital music” (Pollack 2010), and even heralded as revolutionising the music industry, with statements such as “the future of music is here” (Roberts 2011).

At the other end of the spectrum, many academics have downplayed the significance of the achievements of Spotify. Teague (2012) points to the contingent pressures that Spotify has faced along the way in making its service a true revolution. Whereas the optimism surrounding Spotify centres on its legal channel of music enjoyment for listeners and economic remuneration for artists, he emphasises that its heavy reliance on the major labels’ catalogue for licensing poses limitations. In his view, as long as the major labels are acting as gatekeepers, a revolution in the industry cannot be achieved. Scharf (2011) also disregards the optimism, and argues that these trends should be perceived as “Napster’s long shadow”. By analysing how copyright has evolved since the P2P file-sharing related cases, he argues that user-friendly programmes have become prone to liability for copyright infringement. The significant impact of prior court decisions on P2P file-sharing, he continues, is that the industry’s obsession with sustaining “legitimate” business models reflected by these decisions might come at the expense of efficient mechanisms of distribution. In this context, the record companies employ strategies to suppress the potential of technology and sustain their existing business models by utilising the existing power structure.

Other scholars have explored the claim that the digital music crisis can be attributed to file-sharing. Hesmondhalgh (2009) investigates the so-called digital crisis in a long-term context and demonstrates that the early 20th century chaos is indicative of one of the recurrent themes experienced by the music industry with the development of new technologies and/or social upheavals. He claims that the rhetoric of the digital music crisis has been employed by the recording industry in order to promote the expansion of copyright protection. Besides, the downturn of record sales upon which this rhetoric rests does not represent the entire music economy. The continuous growth of income from publishing rights, for example, does not chime well with the economic crisis argument. Therefore, he argues, the argument that the digital crisis can be attributed to digitalisation is exaggerated. This exaggeration, he argues, has been deliberately

cultivated by the recording industry, and has benefited corporate interests, but at the expense of the other two stakeholders in creative industries: artists and consumers.

Rogers (2014) also questions the predominant rhetoric that the digital music crisis can be attributed to file-sharing, and demonstrates how the two main strategies – legal suits and maximising revenue from licensing platforms – played out in the development of this rhetoric. The increased revenue in other areas such as publishing and live music industry, he argues, contradicts the grim picture presented solely by record sales. The revenue from licensing structure through legitimate business models, he maintains, has purported the old music business, and therefore, the rhetoric of the digital music crisis serves to extend this model by way of “lobbying at both national and international levels for the extension and expansion of copyright control mechanisms in both real space and cyberspace” (Rogers 2014, 45) Despite the significant changes reconfigured in the digital era, he concludes that the “fundamental strands of continuity” hold firmly and will shape the future of the music industry.

While it is essential to understand how the legal regime conditioned the evolution of the digital music business, the focus on the tension between the law and business practices characterises debates over whether the law has expanded to reinforce existing power relations or the major labels’ resistance to technological change has delayed innovation. Allen-Robertson (2013) shifts the focus and probes an intricate dynamic of the development in digital music distribution with a focus on P2P technology. He traces the history of P2P technology and argues that the hackers’ ethic that predated Napster had an impact on the development of digital music distribution. His view is that liberal hacker principles were appropriated in the P2P technology system and contributed to the rise of the P2P-based digital music distribution system. These ethics were later re-appropriated by legitimate digital music distribution providers to cater for audiences whose needs were better met by P2P file-sharing networks than by the early legitimate digital music services. He explains that the conflicts between piratical ideology and the existing power framework yielded an expansion of copyright and changes in users’ expectations of digital music services. The regulation to maintain the control over users’ consumption behaviour and the parallel re-appropriation of the principles of the hackers’ user-centric commitment proved crucial to legitimate services’ survival of the

digital crisis. Therefore, in his view, the legitimate distribution architecture is a compromise between digital culture value and capitalistic corporate interests. Although this rare account of the development process of the digital distribution system in the context of technological innovation is important, its focus on legal licence management appears to limit the understanding of a broadened view impinging upon the diverse interests involved in digital innovation.

3) Market Structure

Central to the discussion of an imminent and radical transformation within the music industry is the potential of disintermediation, where traditional intermediaries will either disappear or become redundant. The growth of legitimate digital music services, in conjunction with the downfall of P2P file-sharing networks, requires us to revisit the prediction of the transformation in market structure.

In this regard, research with a focus on the role of copyright has prevailed in one strand of the discussion. The view is that expanded legal protection and recording companies' resistance to novelty produced an entrenchment in technological innovation. Wallis (2006) investigates whether the value chain in the music industry has reconfigured, and argues that there is a strong continuity of the conventional structure. Contrary to the conventional wisdom that digital networks will ensure a greater range of choices for consumers and better financial remuneration for artists, he contends that the power structure has rather remained unaffected and serves to sustain the existing market value chain. He points out that at the heart of this continuity lies the rarely changed nature of existing contracts, which reflects the power imbalance and has thus hindered the pace of possible changes in the industry.

The oligopolistic concentration of the industry was often accused of being a force for market control. Digital technology was conceived as flattening the market hierarchy by helping audiences discover new, often lesser-known, artists and music through a variety of online channels and P2P networks, and thereby providing more opportunities for unknown artists and independent labels. Klimis and Wallis (2009) find that this vision

proved to be wrong. They point out two main reasons for this unchanged market structure. First, copyright has served to maintain the oligopoly of the music publishers and record labels, whose bargaining power hinges heavily on the large and popular catalogues. They also point out that the contracts of the edifice of physical media remain unchallenged in the digital era and serve to protect the large players rather than to foster new innovations in the market.

Another notable change in the digital recording industry was the arrival of the highly expected celestial jukebox, which was celebrated as a “utopian garden of cultural abundance” (Burkart and McCourt 2006). Burkart (2014) probes whether the unlimited access to music enabled by digital music streaming services has contributed to a market structure change through diversified music consumption. Drawing upon the legal system in the music industry that is structured to preserve the traditional revenue model, he argues that the utopian idea of a celestial jukebox is “the false promise of the experience of the digital sublime, fashioned as a seamless and elegant digital enclosure” (Burkart 2014, 405). The reality of the jukebox, he contends, is manifested in the back-end technical infrastructure designed to stimulate the consumption and outmoded legal infrastructure favoured by established media companies.

In its focus on copyright in the market, these accounts treat legal impact as the central point for understanding the digital recording industry. Leyshon (2014) expands this view and takes diverse factors into account. In examining how software formats and the Internet distribution system reshaped the music industry, he uses the four networks of musical economy he developed in 2001 (Leyshon 2001). He draws upon changing relationships in four digital music economy networks, and observes new dynamics created around the recording studios. He places a focus on the way new digital affordances, such as affordable recording tools, ease of distribution on P2P networks and the shift of revenue for artists from recording sales to live performance, posed significant challenges to the conventional recording studio. The “democratised” digital music environment, in which consumers and artists are empowered to create alternative means to help artists bypass middlemen, has led to the rise of an intermediate stratum of professional musician who can shape their career on their own terms. This leads Leyshon to conclude that the digital music industry has been “reformatted”, by which

means the conventional gatekeepers' roles are being increasingly eroded and the music industry's conventional regime, propped up by "copyright capitalism", destabilised.

Although the issue of copyright and technological changes are central to the recording industry, one needs to examine the more complex interplay at work to comprehend the complicated dynamics of the market structure. Galuszka (2015) provides a rare account of the emergence of new intermediaries and the underlying dynamics in digital music distribution. Drawing upon the emergence of digital music aggregators, he demonstrates how the digital music industry has undergone reintermediation and not disintermediation. Based on the theory of transaction costs, he demonstrates that music aggregators arose in order to respond to issues in the digital music era such as high costs and the bargaining asymmetry involved in digital music transaction. In other words, the size of small independent labels' repertoires is not appealing enough for retailers to do business with them directly. Major labels still own large, commercially attractive repertoires, thus leading to the bargaining asymmetry favourable to major labels. By describing the roles of music aggregators, Galuszka describes the challenges to achieving disintermediation. For example, artists need business skills and know-how in order to digitalise music. More importantly, this reintermediation, he suggests, could have an even more far-reaching implication. The system, he argues, is structured to lead to a concentration of copyright ownership in which major recording companies are favoured over smaller labels in negotiation with digital retailers.

3.4 Concluding Remarks

From the early discussions of digital disruption in the music industry, we can extract three main themes that dominate the debates. First, digital technology will shorten the value chain in the music industry by diminishing the roles of intermediaries or rendering them redundant. Secondly, disintermediation will enable artists to connect their fans directly to digital distribution networks and retain legal rights over their own sound recordings. This will lead to the overturn of major labels' control, built through access to Intellectual Property law. Thirdly, the ubiquitous access of unlimited music, known as the Celestial Jukebox where music fans can enjoy an immeasurable scope of music choices, combined with peer-review and viral impact on the Internet, will help music fans discover lesser-known or unknown music and will therefore contribute to achieving the beloved cultural attribute where a diversity of music choices will flourish.

Despite the popularity of the topic, most scholarship has paid greater attention to the potential opportunities or challenges suggested by digital distribution networks. With much emphasis on the legal impacts on the market, debates so far have fallen within the ambit of the dichotomy between utopian and dystopian understandings of the industry. This is manifested in the focus of existing studies so far, which has been on the sales loss of material products such as vinyl or CDs, with P2P technology heralding a sense of crisis. The focus on the point of sales, in conjunction with copyright protection, neglects the complex dynamics underlying technological development. An analysis of the divergent and often conflicting interests could help us move beyond technological determinism, which treats technological innovation as a simplistic and normative account. The underlying dynamics, in particular, are of great significance to the understanding of the way prevailing sets of values and disruptive beliefs are negotiated by a variety of players with different powers and interests. Most significantly, the complex, diverse and evolving requirements of users have rarely been taken into account in understanding the digital recording industry. In this context, the emerging changes in the digital recording industry, prompted by the growth of streaming services, are not just a response to legal regulations or the lineage of P2P technology. To fully understand the complicated dynamics emerging in the digital recording industry, this research will look into the system-wide changes, which include a wide array of

realignment in legal, technological and social infrastructure and a reworking of the valorisation of music.

CHAPTER 4. EVOLUTION OF DIGITAL MUSIC SERVICES

4.1 Introduction

The radical change presented by digital technology posed a great uncertainty about which kinds of services would be attractive to digital music users, and for what, or even whether they would be willing to pay. The conflicting interests and diverging market power amongst heterogeneous players involved in the digital music business rendered the process of building digital music services full of uncertainty, complexity and contingency. This chapter presents the detailed process of innovation involved in the evolution of digital music services. It describes the trials and errors that digital music firms experienced in trying to find a commercially viable business model in the digital era. Although this is a widely discussed area, little has been written from science and technology studies' perspectives. By combining documentation and interviews, this chapter aims to deliver a new perspective on the process of digital music valorisation.

This chapter is composed of four parts. Section 2.2 traces the early history of the digital music service building process after Napster was closed down. This period is characterised by the major labels' contradictory response to digital novelty. On the one hand, they resisted the change, but at the same time, they also sought to ensure that they were not displaced by new forms of digital distribution. This section discusses two major strategies they employed to sustain their position in new dynamics, which proved to be futile. Section 2.3 then discusses how Apple's iTunes service saved digital music but could not be the ultimate solution, leaving a space for a new generation of experimentation in business models. This new experimentation is discussed with reference to two business models, YouTube and Last.fm, in Section 2.4. Having described the trials and errors in the development of legitimate digital music services, the chapter goes on to explore the technological trajectory of P2P networks. It finishes with a discussion on the growth of streaming services and its implications for the future of the digital recording industry.

4.2 After the Wild West (1999-2001)

Napster was a pioneering P2P technology-based music file-sharing service developed by a 19-year-old college student named Shawn Fanning. Its simple and easy means of exchanging files of copyrighted materials drew 70 million users at its peak. In the landmark case of *A&M Records, Inc. v. Napster*, the court affirmed that Napster was liable for contributory copyright infringement. Following the court decision, the original model of Napster was shut down. Some efforts followed to make Napster legal by developing a subscription-based model with fingerprinting technology. In the process, the ownership of the company passed to Bertelsmann, a German media conglomerate, in 2002, then to Best Buy, a US electronic retailer, in 2008 and finally to Rhapsody in 2011. None of the measures brought Napster its original fame back. Opinions remain divided on how to interpret the downfall of Napster. To David Kent, former Director of New Technology at Napster, it was a negotiated outcome formulated by the elusive concept of intellectual property law at that time.

“One thing was only a matter of timing. The thing that was only a matter of timing was the fact that Napster was entirely from the beginning to the end illegal...The problem is society did not generally recognise the importance of one of the milestones of civilisation because it was kind of for specialists. So it's kind of esoteric, and that was intellectual property laws...If Napster could have lasted long enough to avoid the consequence of legal action, the legal action would have meant nothing.”

(David Kent, former Director of New Technology at Napster, Interview, 9 September 2013)

Shutting down Napster, however, did not solve the problems the recording industry had to face. One of the key challenges was to find ways to valorise music in the digitally networked environment. Having once tasted free access to the world's unlimited music library, digital music users would not easily go back to conventional music consumption. Instead of finding ways to meet digital music users' requirements, however, the recording industry tried to extend their control in the market. Significant efforts were

made to persuade consumers of the significance of the illegality (Draho 2002; Wu 2003; Hormann 2009; Jenkins 2008; Cummings 2010). The most intensive efforts were geared towards cracking down on piracy through diverse legal measures including a public relations campaign and litigation not only against the firms but also against individual users. They also employed technological protection measures (TPMs) so as to enforce the rights of copyright owners in digital networks. None of the measures proved to have any meaningful impact on P2P file-sharing activity (Akester 2005; Bakker 2005).

While resisting new forms of distribution and seeking to reassert prior forms of copyright, major labels also sought to ensure that they were not displaced by new forms of digital distribution. A wealth of literature has developed to discuss the implication of these defensive measures, but comparatively less attention has been paid to their efforts to maintain their footage in the new digital business framework. This section discusses two of these early strategies: (1) Attempts to set legal standards and (2) Trials of their own legal digital music services. Both can be perceived as efforts to extend the industry's long-established business structure by fitting the accompanying infrastructure to the edifice of the existing model.

4.2.1 Legal Standards

- The RIO

The history of setting legal standards dates back before Napster, in October 1998, when the Recording Industry Association of America (RIAA) filed a suit against Diamond Multimedia Systems, the manufacture of a device called the RIO, the first MP3 player. The RIAA alleged that the RIO violated the Audio Home Recording Act (AHRA), an act legislated in 1992 to impose restrictions on digital recording devices and prevent the mass reproduction of digital files. While the main objective of the Act was to ensure consumers' private and non-commercial use of digital files and eliminate the ambiguity in the existing law, the Copyright 1976, through exemptions, the single exemption afforded for the computer industry left room for exploitation (Webb 2000).

The RIAA claimed that the RIO failed to incorporate the Serial Copy Management System (SCMS), a mandatory copyright protection technology for digital audio recording devices under AHRA, and thus facilitated the unauthorised copying of copyrighted digital audio files. The Ninth Circuit, however, denied the RIAA's claim on the grounds that "the Rio cannot make copies from transmissions, but instead, can only make copies from a computer hard drive".¹⁶ The court stated, "[T]he RIO merely makes copies in order to render portable, or 'space-shift,' those files that already reside on a user's hard drive."¹⁷ Put simply, the court dismissed the RIAA's argument that MP3 file usage on the RIO violated AHRA, and recognised its legitimacy.

- Secure Digital Music Initiative (SDMI)

As this effort to stamp out the proliferation of unauthorised use of copyrighted digital audio files had failed, the RIAA decided to take on their own project in order to secure technological control over the burgeoning digital recording device market. The RIAA forged a coalition of recording companies, consumer electronics and IT companies, and launched a project called "the Secure Digital Music Initiative (SDMI)" in July 1999. The main objective of the project was to set a technological standard that manufacturers can use in developing new portable devices (Quan 1999). To achieve this goal, the plan required all digital music devices to affix an SDMI-compliant label and a rights management system consisting of digital watermarking (Pollack 1999). In other words, the plan was designed to prevent any use of MP3s not approved by SDMI. The coalition, however, failed to meet the release date, most likely because of the technical difficulties (Levy 2000). In short, what it intended to do was to build an infrastructure from scratch, and this could not be achieved within the time period targeted (Knopper 2009).

Gordon Rintoul, current Client Manager at INgrooves and former employee of Napster's legalisation project, provides a glimpse of the lack of accompanying infrastructure for the digital music business at that time.

¹⁶ Diamond Multimedia, 180 F.3d at 1076

¹⁷ Diamond Multimedia, 180 F.3d at 1079

“Eventually, we did a lot of work. We got a thousand direct deals and started digitalising them. Storage was a big problem at that time. Not like today when we have 300 to 400 GBs, or a terabyte drives. At that time, one gigabyte drive was a big, big drive. So we had to figure out certain things like storage, and we had to figure out how to transfer all this content, from the UK to the US, which was a bit complicated, because most of them were over by CDs in boxes. Then we started a different process, where we put in the drives. We hadn’t dealt too much with Napster, because Napster ended up basically getting caught.”

(Gordon Rintoul, manager of Client Services at INgrooves, Interview, August 23 2013)

An additional and even more difficult obstacle to overcome was to persuade all the parties involved in the project. As retailers had continued to be the main destination for music consumption, for the project to safely launch, it was imperative to have retailers’ cooperation in place. However, retailers were not convinced by the major labels’ efforts to create a novel distribution system without retailers as part of their business structure (Levy 2000). Bill Crowley, current VP at eOne, an international media corporation, was a member of the SDMI project and observed that the conflicting interests of diverse players involved in the project caused it to fail.

“That was a colossal waste of time. This was a time to create rules and formats that could support a wide variety of future services, and at the same time provide a copy protection to minimise the ease with which music could be consumed from the beginning to the end of the chain. So now there is this computer internet service people could stream but not steal the stream and then report it back, and then the other piece of it is consumer electronics device makers who had to implement the hardware side. They had to implement all of these rules. Then there are computer makers who didn’t want to risk anything, their world is ‘hey as long as you buy this, you can do pretty much anything you want.’ So we had these brightest people from three different industry areas and three different industries and a lot of meetings and a lot of places, we ended up not very good.”

(Bill Crowley, VP at eOne, Interview, 28 March 2013)

SDMI is largely regarded as an impediment of innovation, slackening the expansion of legitimate use of MP3s (Levy 2000). In October 1999, Scheirer, a digital music analyst for Forrester Research, released an article titled “The end of SDMI” and proclaimed that the near monopoly the recording industry had aimed to achieve had failed. Eventually, Leonardo Chiariglione, the executive director of SDMI, also admitted that it was a futile effort to stop an unstoppable flow (Twohey 2000).

“We realized it was impossible to create a dam to stop this [MP3] phenomenon”

(Megan Twohey (2000) “Land of the Free and MP3,” *National Journal*, 15 January)

4.2.2 Legal Digital Music Services

As the plan to enforce an industry-wide technological measure to prevent unauthorised use of digital audio files had failed, the recording industry decided to build their own digital music services. PressPlay and MusicNet were two digital music services set up by the major labels. PressPlay was initiated by Sony and Universal, while MusicNet was led by the other majors, Warner, EMI and Bertelsman. Rhapsody and EMusic were another two digital music services that emerged during this period, independent of the major record labels.

Table 3. Early Digital Music Services

Service	PressPlay	MusicNet	Rhapsody	EMusic
Owner	Backed by labels including Sony, Universal, EMI, Motown, Tuff Gong, Virgin and Rounder	An alliance that included the Arista, Capitol, Elektra, EMI, RCA, and Warner Music	Real Networks	Set up by Mark Chasan, a lawyer and entrepreneur

		labels		
Price	Several levels of service, ranging from \$9.95 for a basic plan to \$24.95 a month for “platinum”	\$9.95 per month for 100 streams	\$7.99 for 25 downloads and unlimited streaming	\$9.99 for unlimited downloading
Pros	A platinum subscription entitled the user to stream 1,000 tracks, download 100 and burn them; the tracks were playable as long as the user kept paying the monthly fees, but if payment was stopped, the tracks became unavailable	Subscription models that allowed people to download catalogues from major labels but did not take off due to failing to agree licensing deals	Good sound quality, smooth operation	Diverse selection, all of which could be burned to CD
Cons	The ability to burn CDs allowed the music to be played on home and car stereos and in portable CD players, but it was not possible to transfer songs to a portable MP3 player	Songs could be played only for 30 days; they remained dormant in the user’s hard drive until another payment was made to put it back in the rotation – but still counted against the 100 tune download limit.	Lack of musical choices	No top-selling albums, only available for Mac

As illustrated in Table 3, PressPlay and MusicNet had the advantages of providing top-selling catalogues owned by major labels. However the price was “set artificially high” and had “cumbersome digital rights management restrictions” (Sheffner 2011). Rhapsody and EMusic were run independently of the major labels, and had less strict usages in terms of streaming. However, the major labels “collectively agreed not to do business with potential licensees” (Sheffner 2011), so these services’ incomplete catalogues could not sufficiently meet digital music users’ demands for a wide breadth of catalogue. Bill Crowley thinks this was a futile effort by major labels to extend their control, which did not fit very well with the new regime.

“Major labels had a strong desire to control the future digital business. And that included the desire to operate the streaming service. You can create that and individually own those services so that they took the retail share of the value chain as well. That obviously didn’t sit very well.”

(Bill Crowley, VP at eOne, Interview, 28 March 2013)

There was also widespread hostility amongst digital music users toward the music industry. Alison Wenham, Chairman and CEO of the Association of Independent Music (AIM)¹⁸, experienced first-hand the way it had become a social phenomenon not to pay for music when she was teaching at a university.

“When I first started going (lecturing at the Boric University, MA in 2001), I walked into a room where the attitude of my students were clearly hostile. I was the music industry and they were hostile. They had decided to break away, stick it to the man, they were going to show the industry, it was very fashionable, not to pay. It was very fashionable to be making a statement about these choices that consumers make.”

¹⁸ A non-profit organization established in 1998 in the UK to represent the independent record labels’ interests. The American Association of Independent Music (“A2IM”) is a sister organisation in the US.

(Alison Wenham, Chairman and CEO at AIM, Interview, 30 July 2013)

The subscription business model only afforded a limited number of streams, and restricted usage was not enough to bridge the gulf between market affordances and digital music users' demands for new digital music consumption. The absolute lack of attention to digital music users' requirements led the services not only to fail but later to land at number nine on the "25 Worst Tech Products of All Time" list by PC World (Tynan 2006).

4.3 Apple to the Rescue (2001-2003)

4.3.1 How iTunes Saved the Digital Recording Industry

None of the above approaches were enough to counteract the eroding business: CD sales continued to decline, label-led music services were becoming apparent failures, P2P file-sharing appeared unstoppable. When the change happened, as often seems to have been the case in the history of the recording industry, the key breakthrough was made by a technology firm, in this case Apple. It was major labels who first approached Apple, which at that time had only a 2% market share in the PC industry. But iPod, their newly developed portable media player, was growing fast, and iTunes, a media management application for iPod, needed contents. From Sony's Walkman experience, major labels learned that the integration of music catalogue and music device could bring a great synergy effect. Andrew Lack, CEO at Sony Music, said:

“My point was that the iPod was empty without the music...I felt strongly that without a dual revenue stream, music was going to struggle. If they'd stuck together, there was a chance they could have gotten somewhere. It's my greatest regret.”

(Alex Pham (2013) “The Evolution of iTunes: The Birth of a Colossus,” *Billboard*, 26 April, Available online at: <http://www.billboard.com/biz/articles/news/branding/1559631/the-evolution-of-itunes-the-birth-of-a-colossus> (sampled 15 February, 2016))

With this idea, executives from Warner and Sony approached Steve Jobs to ask Apple to take part in a consortium to develop a music device interoperable with a standard in January 2002. The discussion did not go far, but it did lead to the digital music industry gaining momentum. Two months later, Steve Jobs went back to Warner with his own vision for a music business. Apple built an infrastructure for a new business plan that it formulated with Warner (Pham 2013a). From the very beginning, Steve Jobs strove to

make sure that they had all the major catalogues. In an interview with Rolling Stone in 2003, he said,

“At first, they (majors) kicked us out. But we kept going back again and again.”

(Jeff Goodell (2003) “Steve Jobs: Rolling Stone’s 2003 Interview” *Rolling Stone*, 3 December, Available online at <http://www.rollingstone.com/music/news/steve-jobs-rolling-stones-2003-interview-20111006> (sampled 15 February, 2016))

Steve Jobs’ charisma, as well as the desperation that recording companies faced, drove three major labels to agree to license their catalogues on iTunes before its launch. Sony was included later, presumably because Apple perceived Sony, which was running PressPlay at that time, as a potential competitor (Pham 2013a).

The iTunes store debuted in April 2003, and within a week, sold one million tracks. iTunes’ remarkable success can be attributed to various factors. First, it was the first legal alternative with a wide breadth of catalogues, including all four major labels and independent labels at a reasonable price. Steve Jobs had a clear vision that giving users a better experience was a better solution than suppression of piracy (Goodell 2003). He says:

“To tell them that they should stop being thieves – without a legal alternative that offers those same benefits – rings hollow. We said, ‘We don’t see how you convince people to stop being thieves unless you can offer them a carrot – not just a stick. We’re gonna offer you a better experience...and it’s only gonna cost you a dollar a song’.”

(Jeff Goodell (2003) “Steve Jobs: Rolling Stone’s 2003 Interview” *Rolling Stone*, 3 December)

Apple also paid attention to the fact that there was room to provide a better experience than P2P file-sharing download. Steve Jobs continues:

“The other thing we told the record companies was that if you go to Kazaa to download a song, the experience is not very good. You type in a song name, you don't get back a song – you get a hundred, on a hundred different computers. You try to download one, and, you know, the person has a slow connection, and it craps out. And after two or three have crapped out, you finally download a song, and four seconds are cut off, because it was encoded by a ten-year-old. By the time you get your song, it's taken fifteen minutes. So that means you can download four an hour. Now some people are willing to do that. But a lot of people aren't.”

(Jeff Goodell (2003) “Steve Jobs: Rolling Stone's 2003 Interview” *Rolling Stone*, 3 December)

Scott Cohen, co-founder of The Orchard, an independent music distributor, thinks iTunes' success owes to the attention it paid to consumers' requirements by refining the technology.

“What Apple understood was the interface, the consumer experience. When you plugged your iPod into your computer, it makes basic assumptions that music on your computer, you probably want to transfer to your other device. And it just did it. Before the iPod, it was a difficult process to get the music to your computer and to your digital music player. The computer was like going to the C drive, under this, find this. It wasn't really a drag and drop world that we know now. It was much more challenging. Apple changed that. You just plug it into your computer. They began a level of trust with the consumers. And the device proliferated and reached the critical mass of enough digital players. Then when they launched the store, it was like, ‘Hey! If you have the iPod then you can just get the music on it.’ Why buy a CD when you can just get it there and play it on your device?”

(Scott Cohen, co-founder of The Orchard, Interview, 7 August 2013)

In addition, its a-la-carte option was breaking unprecedented industry ground; bundling had long been a method of maximising profit for the recording industry by forcing consumers to purchase an entire album (Zhu and MacQuarrie 2003). Since the commodification of music, music had been turned into a rival good in which artificial scarcity was crucial to uphold the consumer price. Paul Vidich, former executive at Warner Music, says there was a cognitive barrier to overcome in order to break this down.

“We knew we needed to alter consumer behavior in a big way. Below \$1 was an emotional threshold for people. It became an acceptable impulse purchase.”

(Jeff Goodell (2003) “Steve Jobs: Rolling Stone’s 2003 Interview” *Rolling Stone*, 3 December)

It didn’t take long until Apple became one of the largest sellers of musical content in the US (Wingfield and Smith 2007). By 2007, as a medium to experience music differently, iPod became the dominant digital music player with a market share in excess of 70% (Levy 2006). Up until 2011, iTunes remained the most successful legitimate digital music service (Druckerman 2011). Its influence in the industry is far-reaching; it was perceived to have “created a commercial superhighway that connected the artist to the consumer and rescued the industry...[and Steve Jobs] showed the music industry how to capture the value that was quickly being eroded by old-world ideals” (Nash 2011).

However, iTunes’ success attracted as much criticism as acclamation. Most criticisms are centred on the issues surrounding the DRM restrictions that iTunes initially put in place. Jobs expressed that the decision to use the DRM system was an inevitable choice in order to comply with the contractual obligations that major labels required (Jobs 2007). He says:

“The rub comes from the music Apple sells on its online iTunes Store. Since Apple does not own or control any music itself, it must license the rights to distribute music from others, primarily the ‘big four’ music companies: Universal, Sony BMG, Warner and EMI. These four companies control the

distribution of over 70% of the world's music. When Apple approached these companies to license their music to distribute legally over the Internet, they were extremely cautious and required Apple to protect their music from being illegally copied. The solution was to create a DRM system, which envelopes each song purchased from the iTunes store in special and secret software so that it cannot be played on unauthorized devices.”

(Steve Jobs (2007), “Thoughts on Music.” *Apple Website*, 06 February, Available online at: <http://www.apple.com/hotnews/thoughtsonmusic>.)

FairPlay, the DRM system created by Apple, is often perceived to be fair only to the labels, not to the consumers. Sharpe and Arewa (2006) argued that iTunes' DRM was a destructive stranglehold for the industry in that the market dominance through network effects created a barrier for competition and thus eventually restricted consumers' choices. Apple's failure to meet consumers' expectations, they insisted, would make Apple “a victim of its own success” (Sharpe and Arewa 2006, 350). As criticisms and complaints ensued, the DRM restrictions were loosened over time. It started with EMI, the major player with the least market share, announcing that they would make their entire catalogue DRM-free on iTunes (Apple Press Release 2007). In 2009, Apple extended the DRM-free scheme to 80% of its repertoire (Apple Press Release 2009).

4.3.2 How iTunes Reshuffled the Digital Recording Industry

There is a substantial amount of literature on the changes that iTunes has made to the market. Most attention, however, has been paid to the economic contribution or the legal impact of the service. What are obscured by this focus on economic and legal impact are the implications the service has had for the underlying dynamics of the digital music business.

Perhaps most importantly, it has laid the foundation for the legitimate digital music business. For a period of time since the advent of Napster, a diverse array of trial and error took place in the market. Many music companies struggled from the erosion of revenues or ceased to exist. The Orchard was one of the companies which suffered

from the downturn of the digital music business. Scott Cohen, co-founder of The Orchard, shares the difficulties the company experienced during this time:

“It was challenging because we were losing a lot of money until 2003. We never took in any investment, so it was just my business partner and I going deeply into debt. Millions of dollars of our money, you know we already spent our own money. We owed people money we couldn’t pay. That was all the way up to 2003.”

(Scott Cohen, co-founder of The Orchard, Interview, 07 August, 2013)

For companies that survived, iTunes was a new ray of hope. This was when the digital distribution system was formulated. Companies like INgrooves, The Orchard and Phonofile changed their main business model to digital aggregation. They switched their main business from digital distribution of film to digital aggregation for iTunes.¹⁹

“There’s going to be a technology partner and a marketing promotions partner in between. It’s inefficient for every content owner to make a deal with every digital music services globally. We need delivery platform, the accounting system, the legal work of making a deal with every one, the ability to have relationships. We just knew that in the digital world, we still need intermediaries. If anything, we find more intermediaries, not fewer. It just feels like there’s fewer but there’s actually more people in the transaction.”

(Scott Cohen, co-founder of The Orchard, Interview, 7 August, 2013)

As iTunes became an important source of income for labels, the relationship amongst diverse actors in the industry began to change. The most noticeable change was that iTunes replaced the role of traditional retailers. A front-page placement on iTunes has become an important promotion tool. Bill Crowley, VP at eOne, explains the significance of this change in the digital age.

¹⁹ This will be discussed in more detail in Chapter 5

“The discussion with iTunes about who’s going to be featured on the front page, who’s going to get a showcase banner on a genre page? They want to know what’s your track record. Trusted sources within those value chains, that’s not going to go away. Just like in the old days, if a traditional record company came with a persuasive story to a radio station, and the perceived willingness to support the project on a long-term, you would be more likely to get a favourable result than if any of those elements were missing. Same thing on the retail side. Things are not going to change.”

(Interview with Bill Crowley, VP at eOne, Interview, 28 March 2013)

As iTunes increasingly became a significant source of income for labels, the bargaining power also began to tilt toward Apple. One good example was iTunes’ one-way announcement that it was extending the length of the preview time from 30 seconds to 90 seconds (Masnick 2010). Don Gross, Client Operation Manager at INgrooves, expresses strong concern about this issue.

“What happens is they have allowed iTunes to have more barrel for so long because iTunes now has been there for a while, they’re making more money there, without it, they would lose some companies up to 80-85% [of] their revenue which would be disastrous and they can’t afford to be on iTunes. So they can’t afford to say no to iTunes which means there’s a whole lot of businesses and in the industry and that is now crippling reliant [on] one service. What kind of industry is reliant to one service? It’s absolutely appalling from a business point of view.”

(Don Gross, Client Operation Manager at INgrooves, Interview, 12 September 2013)

As an alternative digital music commercialisation platform, iTunes allowed labels to generate revenue from digital music, enabled users to consume music legitimately at a reasonable price and gave more opportunity to independent musicians to distribute their music online. However, its inclination to have legitimate digital music catalogues came

at the price of consolidating the existing power relationship (Wikström 2013). Arditi (2014) argues that iTunes is a system built to be favourable to major labels, at the expense of not fully tapping into the potential of disintermediation. Although it is possible for artists to distribute their music by themselves, he argues, iTunes allowed major labels to maintain the traditional network effects that stem from marketing and promotion. iTunes eventually “lends itself to concentrating power in the major record labels. The walls that digital distribution broke down have been replaced by distribution barriers in the form of iTunes” (Arditi 2014).

As a PC manufacturing company, Apple was able to weather the small amount of money it made through digital music sales, because the ultimate goal was to create significant profits by selling Apple products. Its preoccupation with creating loyalty to its products, however, meant that the choice was made to limit interoperability between iTunes Music Store and non-iPod players (Sharpe and Arewa 2006). The network effects that Apple enjoyed through its dominant market power were criticised to be “in large part wedded to its exercise of proprietary strategies that include a significant exercise of intellectual property rights” (Blankenhorn 2006, 348). Apple’s closed system, albeit optimal for Apple consumers, left many non-Apple consumers unenthusiastic (Medford 2008). Its deliberate decision to constrain consumers’ choices in part explains the unabated P2P file-sharing and the continued erosion of digital music sales revenue (Medford 2008). Eventually, it provided leeway for other services to spring up.

4.4 Emergence of New Models (2004-2007)

4.4.1 Last.fm

1) Beginning

Last.fm is the joint firm of Last.fm and Audioscrobbler. Audioscrobbler began when Richard Jones started his project in computer science at the University of Southampton in the UK. The project was to build a software program to recommend new music and connect with people who have similar music taste (BBC Technology 2003). He invented “Audioscrobbler”, a plug-in that could collect data on the music to which its users listened, and shared the application with his friends. It became widespread very quickly. Last.fm, meanwhile, was founded in 2002 as an Internet radio station and music community website, designed as an avenue for unsigned bands to have their music heard. Upon reading a newspaper article about Audioscrobbler, the founders of Last.fm met with Richard Jones. In 2005, the two companies were merged and became the current Last.fm.

Scrobbling, which stores people’s music listening history, became the unique business model of Last.fm. It helps users to explore new music and listen to tracks from their favourite artists, and enables diverse social networking functionalities such as finding out which friends have similar tastes, etc. It keeps track of what a given user listens to (the tracks are “scrobbled”, a reference to the original website’s name, Audioscrobbler.com), building a user profile of how many times and when the user listened to a particular track. That profile is then compared with everyone else’s profile to generate basic associations such as “users who like the Ditty Bops also prefer Nellie McKay and the Weepies”. This says nothing about stylistic similarity – only that if a user is the type of listener who likes one artist the probability is high that they will like another. For example, if a user likes Samuel Barber, Last.fm apparently thinks it is quite likely that they will also be fond of Faure, Massenet, and Prokofiev (Haupt 2009). Last.fm’s user-base was growing very fast through which a big network of users made Last.fm’s recommendations more relevant to users (McCarthy 2007). Its innovative

approach brought last.fm Digital Music Award in 2006 (TechRadar 2006). Later, Last.fm has experienced a few changes in the business development.

2) CBS Acquisition

In 2007, CBS, one of the biggest radio broadcasting companies, acquired Last.fm at £140m, the largest-ever UK Web 2.0 acquisition at the time. Last.fm, at that time, was “one of the most well established, fastest growing online community networks” with around 20 million active users (Kiss 2007). It is known that Last.fm’s strength in building music communities through music syndicating technology and appeal to the younger generation was enticing to CBS, who were losing audiences to internet media (The New York Times 2007).

The immediate change of the acquisition was the approach to copyright issues. Since its acquisition by CBS, Last.fm has become much more compliant with copyright laws. It used to take the approach of playing the music as much as possible until it was challenged legally. David Whittle, former User Experience Director at Last.fm, describes the approach Last.fm used to take before the acquisition as a “relaxed” one:

“Before we were run by CBS, and before the legality of the streaming of music was defined, Last.fm was more relaxed about playing music...before Last.fm was owned by CBS, Last.fm was more relaxed about some of these practices, essentially they would wait for the challenge. They could do until they were challenged. That’s no longer the case. We’re always compliant.”

(David Whittle, former User Experience Director at Last.fm, Interview, 18 Oct 2012)

As an international company, CBS took a more serious approach to the copyright licensing scheme. In February 2007, Warner Music signed a deal with Last.fm to allow its entire catalogue to be played on the service (Holton 2007). In 2008, CBS announced a plan to provide tracks from all four major labels. On 23 January 2008, Last.fm announced a “free the music” initiative, which would allow users to play music for free

up to three times (Last.fm blog 2008). The catalogue included music from all four major labels and artists were remunerated each time their tracks were played. It received an enormous amount of attention from users (Buskirk 2008).

CBS also intensified their efforts to making the business profitable and made a few changes to the business strategy. On 12 April 2010, Last.fm withdrew its free play-on-demand service and experienced a significant drop in number of users. The expensive royalties paid to the major labels are known to be the reason for this change. David Whittle, former User Experience Director at Last.fm explains:

“The difference is the on-demand-streaming service was turned off after the acquisition. And the reason for that was basically it was too expensive. So my understanding, I’m not a lawyer, but my understanding is that for on-demand streaming services, the royalty payment is much higher. You understand we have a radio product and the radio product has to comply with an American copyright act called DMCA. DMCA requires tracks which are played...they made a threshold of unpredictability, which means anything we allow our users to choose what they’re listening to, we have to be very careful about. So the immediate consequence of the acquisition by CBS was that the free on-demand service was removed. Because free on-demand service has literally been on up until 2008. Until 2008, users could find a song on Last.fm, then they could play it on-demand for free. And this was obviously a very expensive service to support. So that was turned off.”

(David Whittle, former User Experience Director at Last.fm, 18 Oct 2012)

In 2007, Warner Music signed a deal to allow its entire catalogue to be played on Last.fm, but withdrew the deal in 2008. This approach causes enormous overhead both bureaucratically and technically. The complicated nature of copyright requires a significant amount of negotiation and technical operation. David Whittle continues:

“In terms of attaining catalogue, that’s a really complicated business. It creates enormous bureaucratic overhead and enormous amount of time negotiating.

And because we're an international company, we're an Internet company, people can have an access to the site anywhere in the world, we have services in 12 languages, and we have a global audience, copyright law which applies in national level, which it does, is extremely complicated to negotiate both bureaucratically and technically. Bureaucratically, because we have to negotiate separately for every territory, for abroad territories. And technically because we have to have means of identifying somebody's location in order to determine what is allowed to listen to.”

(David Whittle, former User Experience Director at Last.fm, 18 Oct 2012)

In 2009, Last.fm announced another change in relation to the free streaming policy. From then on, users in areas other than the US, UK and Germany would be required to pay €3.00 per month to listen to the radio on Last.fm (Last.fm blog 2009). The licensing costs would be covered through advertisement revenue in those three countries. For other countries, where advertising revenue was not enough to cover the licensing cost, the subscription fee would make up the difference (BBC News 2009). As a result, Last.fm became profitable immediately. However, this measure left many users disappointed; many stopped using the service or switched to Spotify, which was an emerging service at that time (BBC News 2009). A blog poster, StudleyUK, commented,

“A word of the wise: if this charge ever comes to the UK, I'll be ditching my subscription immediately. Right now, you're just making Spotify look more and more attractive.”

(BBC News (2009) “Last.fm to Charge for Streaming.” 25 March, Available online at <http://news.bbc.co.uk/1/hi/technology/7963812.stm> (sampled 15 February 2016))

A series of restrictive measures followed. On 12 April 2010, Last.fm removed the feature to preview entire tracks. Users who wanted to preview entire tracks were redirected to other sites such as Spotify, Hype Machine or Mog, where Last.fm's scrobbling is integrated. On 17 November 2010, custom radio stations, also known as

“loved tracks radio”, was removed for licensing issues (Last.fm blog 2010). David Whittle shares the frustration he experienced from not being able to offer the service users want due to licensing issues.

“For the business, the obstacle that I think we face is the fact that we can’t offer play-on-demand. I mean, my job is to design services and products, in the music service you can’t just listen to the music? It’s very complicated. We have an enormous amount of catalogue. If you look at the website, we have millions and millions of artists and track pages, we can provide cover art from an album, but we can’t play the album, because the price of on-demand service is high. But that’s the problem from my point of view.”

(David Whittle, former User Experience Director at Last.fm, 18 Oct 2012)

Last.fm has strived to offer attractive services to users. In January 2014, Last.fm’s on-demand streaming was integrated with Spotify. Its scrobbling plug-in is provided for many other services including iTunes, Spotify, Deezer and other music services on Linux OS. Cooperation with these companies helps Last.fm to attract new users and to acquire more scrobbling information from these users, which could serve well both for Last.fm, users and the partnering companies. On 28 April 2014, Last.fm stopped providing streaming radio service and in 2015, Last.fm released a subscriber-exclusive service. However its incomplete features, as well as some technical glitches, caused some users to stop subscribing.

In summary, the innovative business model that combined free streaming of immense catalogues with music recommendation and sharing mechanism gained Last.fm a fast growing user base. Following the acquisition by CBS, the business experienced a series of changes. The most notable change was manifested in strict copyright compliance policies, which led to the falling popularity of the service. Copyright licensing issues were not the only factor that influenced the decline of the business – there were also internal conflicts between the large corporation and the “upstart” Internet company. However, the company’s strategy for coping with the challenges of the copyright

licensing issue came at the expense of compromising user experience, and in large degree contributed to the downturn of the business.

4.4.2 YouTube

1) Evolution of the Business

YouTube began as a video-sharing website created by three former PayPal employees, Chad Hurley, Steve Chen and Jawed Karim, in February 2005. Two different origin stories exist for the business: the widely known version is that Hurley and Chen developed the service after they struggled to share some videos at a dinner party at Chen's apartment, while Karim believes that it was instigated by his difficulties in finding two hotly discussed videos in 2004 - Janet Jackson's "wardrobe malfunction", in which her breast was accidentally revealed by Justin Timberlake during the performance at the Super Bowl show, and the Asian tsunami (Hopkins 2006). Regardless, the explosive response to this service reflected the impending need for such a service: in less than a year after the official launch of the service in July 2006, 65,000 new videos were uploaded and 100 million videos were viewed per day (Reuters 2006).

The essence of the business lies in allowing users to upload and share videos through which advertisements are tied to generate revenue. Whereas YouTube is not the only or the first service of this kind, YouTube gained exponential popularity due to its ease of use: instant, free and unlimited access to global catalogues, simple upload of videos in any format and easy sharing (O'Brien and Fitzgerald 2006).

YouTube's legal ordeals are well-known. The company has been sued in three major media content consuming countries, the US (Viacom), the UK (PRS for Music) and Germany (GEMA). YouTube, however, wasn't always embroiled with copyright issues. During the early days, a significant portion of YouTube videos featured user-generated content. The original, thus legal, contents kept YouTube free from concerns about copyright infringements (Breen 2007). The concept of the service's legitimacy was not solid in the beginning. This began to change as YouTube's user base increased, obliging

the service to be more alert to the concept of legitimacy. First, the increased number of users brought increased copyright infringement. There were more YouTube videos that were simple uploads of TV programmes or music videos – oftentimes without permission from the rights owners - than “user-generated” videos. Secondly, the explosive growth of the user base meant a new revenue-generating avenue. This was something that YouTube did not consider in the beginning. Derk van der Woude, who is in charge of Music Partnerships at YouTube, describes it as something that happened “all of a sudden.”

“We got this possibility of monetising content you originally didn’t plan for to get there, but you see the value of it.”

(Derk van der Woude, Strategic Partnership Manager at YouTube, Interview, 9 April 2014)

Pressured by media companies, YouTube took a few new measures to enhance the legitimacy of the service. In August 2006, they unveiled a new advertising plan providing content providers with more control over YouTube as a revenue stream. Brand Channels were created to cater for advertisers who wished to present video contents on YouTube with a consistent look and feel with their brand imagery, with Paris Hilton’s channel as the first case (Marketwire 2006). In September 2006, the deal between YouTube and Warner marked the beginning of YouTube’s official move to reify the legitimacy of its business. Under the revenue-sharing agreement, YouTube allowed Warner to identify the use of their recordings and to share the revenue generated from advertisements appearing alongside the video clips with the copyright owner (Leeds 2006). This agreement hinges on a technology that compares “audio uploaded to the site to unique attributes of copyrighted content it already knows” (Delaney and Smith 2006). Also known as “fingerprinting”, this technology resembles an audio-identification system that Shawn Fanning presented at Snocap Inc, a company set up after Napster (Delaney and Smith 2006).

Defining YouTube’s business model as a compromise over copyright issues, Delaney and Smith (2006) argued that this was “a move that could defuse the threat of legal

action against it, (YouTube) is racing to overhaul the way media and entertainment companies view unlicensed online use of their content.” This direction, perhaps, was what the market wanted. In October 2006, Google announced that it had acquired YouTube for \$1.65 billion (Google Press Release 2006). It is alleged that Google's acquisition accelerated YouTube's transition to a legitimate service, leading with measures to include advertisements on as many pages as possible (von Lohmann 2006). Google also tried to sign deals with as many media companies as possible. Companies such as CBS, MTV2 and Sony BMG joined the partnership in order to use YouTube as a revenue-sharing platform.

On 13 March 2007, Viacom filed suit against YouTube. Accusing YouTube's business model of “massive copyright infringement”, Viacom sought \$1 billion in damages (Helft and Fabrikant 2007). The basic argument was that YouTube relied heavily on copyrighted materials but “has deliberately chosen not to take reasonable precautions to deter the rampant infringement on its site”.²⁰ Viacom's evidence was that the uploaded videos “are not identified by copyright owner or registration number but rather by the uploader's idiosyncratic choice of descriptive terms to describe the content of the video – tags making it extremely impractical to identify plaintiff's copyrighted works” (Reed 2006). YouTube has “Terms of Use” which inhibits users from uploading illegal content and allows YouTube to remove content that infringes on copyright or does not comply with the terms. The nature of the service, which relies on users' uploads, has subjected YouTube to potential legal litigation. Not only is the automated process of users' voluntary “flagging” highly arbitrary and unreliable, but it is nearly impossible to expect someone to constantly police potential infringement (Hormann 2009).

In legal circles, DMCA's “safe harbour” provision has not proven to protect services like Napster, Grokster and Aimster, which are akin to YouTube in that the essence of business rests on content uploaded by users. There is a legal dispute surrounding the issue of whether or not YouTube as an Internet Service Provider (ISP) is subject to the protection of “safe harbour” provisions under DMCA. In order to qualify for immunity

²⁰ Complaint for Declaratory and Injunctive Relief and Damages || 2,10, Viacom Int'l, Inc. v. YouTube, Inc., No. 1:08-cv-02103 (LLS), 2007 WL 775611 (S.D.N.Y. 13 March 2007)

from liability for contributory infringement, an ISP must prove that it had neither actual knowledge nor awareness of facts or circumstances of infringement, and must take down infringing materials once it acquires knowledge of the infringement. The US Congress created a “red flag” test designed to investigate whether an ISP has apparent knowledge of infringement; the debate on this “red flag” test dragged on for seven years. During this long battle, Google twice got the upper hand in the courts, in 2010 and in 2012. The summary judgement in the 2nd Circuit stated, “The burden of showing that YouTube knew or was aware of the specific infringements of the works in suit cannot be shifted to YouTube to disprove” (Gardner 2014a). After the judgment, Viacom was to appeal the verdict, but a resolution between the two parties was announced on 18 March 2014 (Gardner 2014a).

Instead of the billions of dollars for damages which Viacom asked for in the first place, they received expensive legal bills. However, the legal battle did have some impact. Corynne McSherry, Intellectual Property Director at the Electronic Frontier Foundation, says, “For one thing, the case arguably pushed YouTube and others online towards copyright detection technology. The world has changed quite a bit since the lawsuit was filed. YouTube’s practices have changed quite a bit in adopting Content ID” (Gardner 2014b). As is often the case, its legal consequence remains to be seen. What perhaps is of more significance to the industry is that this legal battle ended with a settlement that “reflects the growing collaborative dialogue...on important opportunities”, as the settlement announcement stated (Viacom Newsroom 2014).

2) Controversies and Limitations

YouTube’s widespread popularity owes much to the emergence of user-generated content, which was not possible in the pre-digital era. By enabling users to upload videos, it became a platform where anyone can share their videos. By breaking the barrier to entry, it facilitated “participatory culture”, in which the traditional distinction between producer and consumer becomes blurred (Jenkins 2006). As a platform for “vernacular creativity”, YouTube allowed grassroots culture to surface from marginal to the mainstream. Viewed as a platform for the democratisation of cultural production and amateurship (Benkler 2006), YouTube is often perceived to have valorised “digital

utopianism” (Turner 2006). TIME’s acknowledgement of the power of the collective “You” signifies the role of YouTube as a “million-channel people’s network” that empowers users’ ability to change the way information is produced and distributed (Grossman 2006).

One significant consequence of it was making the service as a platform where things could go “viral”. Chris Brown’s song “Forever” was featured in the viral video “JK Wedding Entrance Dance”, which became the third most watched video on YouTube in 2009, with 60 million views. The song came out more than a year before the wedding occurred but had long fallen off the chart by that time (*JK Wedding Entrance Dance* 2009). In the wake of the video being posted, the song had a second life commercially, and once again turned into a bestseller: it rose to number four on iTunes’ chart due to this video (Internet und Gesellschaft Collaboratory 2012). Bon Jovi’s “Living On A Prayer”, the 1987 classic rock hit, also got a second life due to a YouTube video of basketball fan Jeremy Fry dancing to the song at a Boston Celtics basketball game (*Jeremy Fry - Celtics Fan Dancing to Bon Jovi Living on a Prayer at a Celtics Game* 2009). The viral effect on YouTube and Facebook subsequently caused Bon Jovi’s song to re-chart in the Billboard Hot 100, 26 years after its last appearance in the chart. A more recent example is Soko’s song “We Might be Dead Tomorrow”. It was used in the video “First Kiss”, where 20 strangers were asked to kiss for the first time (*First Kiss* 2014). The huge popularity of the video earned Soko a lot of money for the synchronisation fee. Derk van der Woude says this created room for manoeuvre.

“Most of it is organic. However, there’s room for manoeuvre. When we have the viewership of one billion monthly unique visitors, watching six billion hours, we need to harness that.”

(Derk van der Woude, Strategic Partnership Manager at YouTube, Interview, 9 April 2014)

Burgess (2009) pays attention to this aspect and stresses the converging aspects of YouTube, where both “user-created” content and videos by “traditional media” co-exist. Contrary to the weight given to the contribution of user-created content to

YouTube, she points out, these videos take up only a very small proportion of “popular” YouTube videos, while content from traditional media counts for the majority of the videos in the “Most Viewed” and “Most Favourited” sections. Underpinning this uneven distribution of value is the mechanism by which certain works rise to the top. Although YouTube is widely epitomised as the incarnation of Web 2.0, the evolution of the business, which has been as much driven by its users as by traditional media, suggests that YouTube is not immune from contested power relations between users and corporation.

A further manifestation of this change can be easily found in the music arena, especially in YouTube’s licensing deals with the labels. Its turbulent relationship with these labels enjoyed a significant breakthrough on 9 April 2009, when it announced a partnership with Vevo, a music video and entertainment platform (YouTube Press Release 2009). Despite the diversity and enormity of the catalogues on YouTube, the channel has been the number one channel on the service, generating over 2.6 billion views (Sandoval 2008). The service was borne out of an idea that Doug Morris, Universal’s chairman and CEO, had to launch a “Hulu-like” standalone music video service, in an effort to generate more revenue out of this popular channel. Established as a joint venture between Sony and Universal, YouTube’s partnership with Vevo gives YouTube enhanced legitimacy and more high-end advertisers. Vevo attracts advertisers to YouTube better than user-generated content does (Sandoval 2008). With 250 indie labels as partners, Vevo is striving to move beyond its role as a mainstream music platform and reach diverse music fans. The British band Bastille’s debut single “Pompeii” typifies the significance of Vevo as a platform for breakout artists. After being featured on the service’s home page, the song attracted 46 million views and 386,000 sales on the band’s Vevo channel (Pham 2013b), and eventually became the most streamed song of all time (Lane 2014).

Another controversy arose in relation to the power relations between YouTube and independent labels. On 12 November 2015, YouTube launched an on-demand streaming service called YouTube Music. In preparing the service, YouTube became embroiled in ferocious rows with independent labels. YouTube sent out a “template contract” giving indie labels two choices: take it or leave it. The terms were non-

negotiable, and undervalued indie labels and associated entities responded with tremendous frustration (Dredge 2014b). Independent labels argue that this uproar is less about the actual money than about YouTube's unequal approach to labels (Dredge 2014b). The typical contract that YouTube sent out to the labels included terms and clauses such as "most-favored nation", which would entitle YouTube to reduce the rate for independent labels if major labels agree to a lower rate. While YouTube argues that this clause was included so as not to affect independent labels disproportionately, independent labels regard the asymmetry in power as inevitably leading the contract to work more favourably for major labels than for independent ones. In other words, major labels would be able to negotiate a third option for payment, either a non-recoupable advance or a per-stream minimum rate on top of a percentage of revenue or a minimum per subscriber. Independent labels' lack of negotiation power for a third option, meanwhile, would force independent labels to accept the lowered rate chosen by majors. Independent labels are also infuriated that they did not get the minimum-guarantee payment that the major labels allegedly did (Christman 2014). A complaint to the European Commission, filed by the Independent Music Companies Association (IMPALA), followed (Christman 2014). YouTube eventually announced its plan to re-negotiate the terms with independent labels (Flanagan 2014). The independent labels' furor, however, was not to be easily appeased. They responded with the "Fair Digital Deals Declaration". Under the flag of the Worldwide Independent Network (WIN), more than 700 indie labels joined the initiative to voice their impending request to ensure fair treatment for indies which, they argue, will eventually help remunerate artists better (Minsker 2014). This invocation of independents' appeal for fairer treatment itself might serve as an indication of the increasing power of indie labels.

- Limitations

YouTube's business model manifests much of the potential digital technology presented: it is free and easy to share, and has an immense number of music catalogues. However, it still fell short of being a game-changer. P2P file-sharing continued unabated, friction with rights holders persisted and there was little sign of a digital music sales recovery. The appeal of free and unlimited access to music itself, although is important, proved to attract only certain type of digital music users. YouTube is a

predominant avenue of music listening particularly for the younger generation of 18-25 year olds to whom free access is significant. While this age group can account for crucial music aficionados, it does not represent the overall music consumption crowd. As far as music consumption is concerned, it takes more than free of charge access and a large number of catalogues. One of the factors that count as significant – if not more – as free is the quality of service. As a result of the copyright compliance policy, YouTube compromised a few of the features. For example, the ten-minute time limit imposed on video uploads and the poor video quality made YouTube inferior to contents distributed on P2P networks, whose compression technology supports content of far superior quality. Although its impact on music might not be as big as it is on film, this restriction led users to continue to use P2P file-sharing as a “venue” for digital music experience. Overall, the abundance of free content could not prevail over the limitations of YouTube such as the inconsistent quality of sound and the annoyance of advertisements (Jarrett 2008), and left a room for a new innovation.

4.5 Streaming/Subscription Services

4.5.1 The Decline of P2P file-sharing

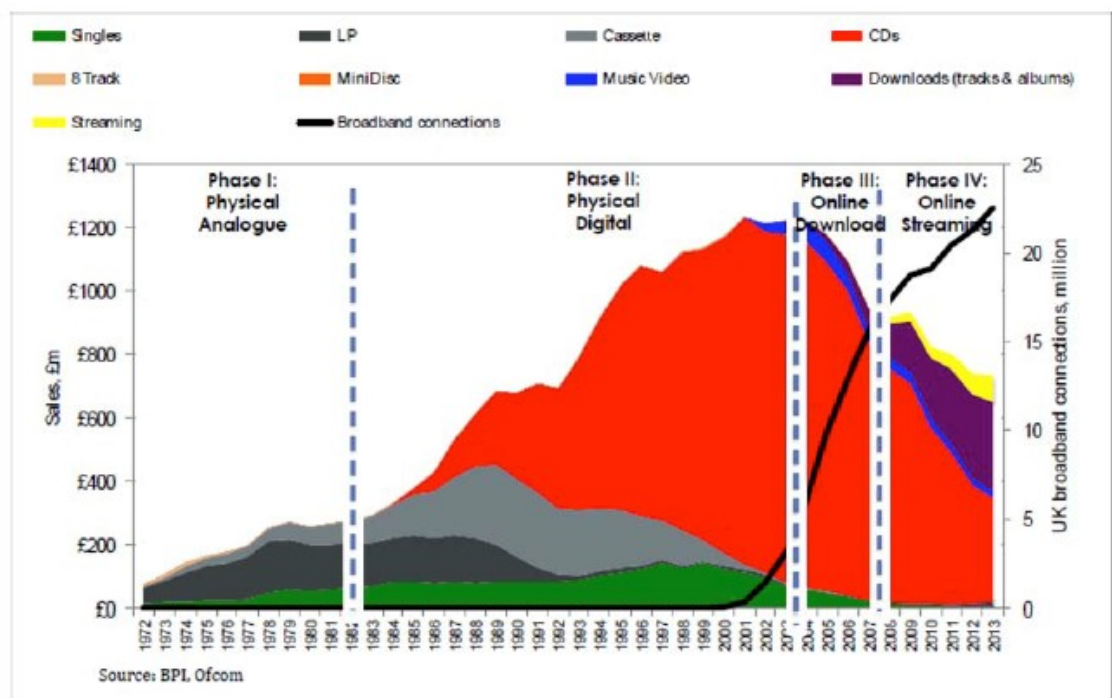
Before we discuss the significant changes that streaming services are making in the contemporary digital recording industry, this section briefly discusses the decline of P2P file-sharing. In 2013, Peter Sunde, cofounder of Pirate Bay, prophesied the “imminent death” of the peer-to-peer system (Solon 2013). Later in 2015, he stated that “the death of [the] pirate movement” had occurred (Sunde 2015). Although International Federation of Phonographic Industry (IFPI), an organisation representing the interests of the recording industry, still condemns P2P networks as “the biggest source of online copyright theft”, it also admitted a considerable decline in P2P file-sharing, with website blocking being the most effective measure (IFPI 2015).

The significant ramifications of these legal measures seem to be related to the reduced user experience in P2P technology. P2P file-sharing application developers became more preoccupied with ensuring that systems were resilient against legal allegations than meeting digital music users’ needs. A related phenomenon is the connotation of illegality that P2P technology carried. Most people are predisposed to choosing legal options rather than committing a crime. While people’s perception of P2P file-sharing, in the beginning, was as something fashionable (interview with Alison Wenham, Chairman of AIM), the activity degraded into something more dubious over time. From a business perspective, P2P file-sharing application providers rely heavily on advertisement for their revenue source. The illegality of P2P technology made it increasingly difficult to attract decent advertisement, leaving pornography as almost the only option (interview with Rasmus Fleischer, co-founder of Piratbyrån). In addition, labels distributed fake files on P2P file sharing networks, which left many P2P downloaders frustrated with failed attempts to download files (DeVoss and Porter 2006). Perhaps a more significant concern for users was the danger of malware: P2P networks were particularly at considerable risk from these threats. Along with these changes, the superior legal offerings instigated by Spotify were increasingly perceived to be a main driving force against piracy (Page 2013; Aguiar and Waldfogel 2015). The next section looks at the developments in this field.

4.5.2 Emergence of Streaming Services

Although some digital music services achieved a certain degree of success, none of the measures sufficiently addressed the recording industry's struggle to reduce piracy and regain economic growth in digital music networks. As shown in Figure 8, digital music sales continued to grow but did not offset the sharp decline in CD sales. P2P file-sharing was condemned as the main factor "choking" the digital music business (IFPI 2008). The growth of digital sales from downloads, although increasing, was still not enough to match the recording industry's prime era.

Figure 8. Sales of Music, Samuel (2015)

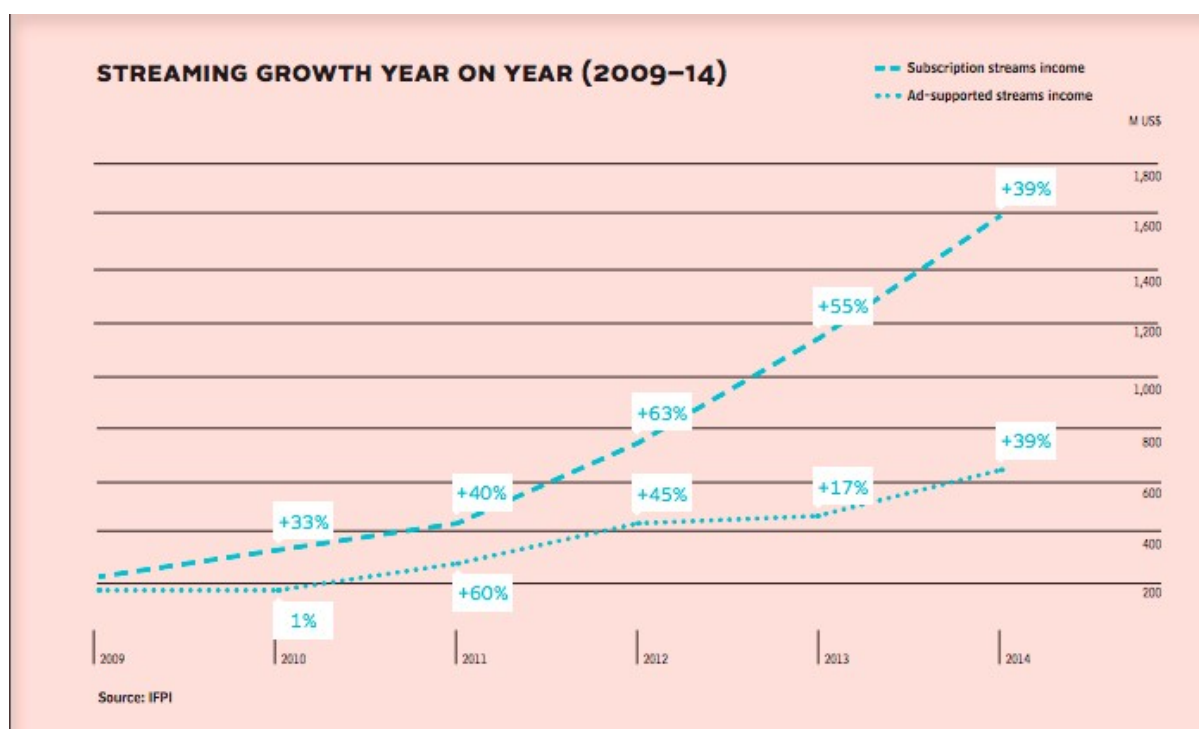


Things began to change in 2008. Central to the change was on-demand streaming services.²¹ Samuel (2015) distinguishes the history of recorded music into four phases grouped by the unique features of each phase. Phase I (up to 1983) is Physical Analogue

²¹ Marshall (2015) groups current digital music services into three types: streaming radio (webcasting), locker services and on-demand streaming.

with cassettes, LPs, singles and 8-tracks; Phase II (1984 -2003) is Physical Digital with CDs; moving into the “New World of Music”, Phase III (2004-2007) is Online Downloads, i.e. downloads from the Internet; and Phase IV (2008 onwards) is Online Streaming. Since the advent of iTunes, digital record sales have slowly increased. Samuel (2015) calls this a “new world of music”, dominated by online streaming services.

Figure 9. Streaming Growth Year on Year (2009-14), IFPI (2015)



As shown in Figure 9, revenue from streaming services has continued to grow since their inception in 2009. Streaming services are potentially signalling the economic recovery of the recording industry as a whole. The digital music report 2015 released by IFPI reported that streaming services are a major force of digital music growth, with the industry generating as much revenue from digital avenues as from physical media. The report says:

“The global recording industry is passing through a new transition in the fast-evolving digital market place. The key features of this evolution, driven by consumers, are the rapid growth of music streaming; a marked diversity of revenue streams and trends from one country to another; and a continued

evolution from traditional models of music ownership to the new fast-growing model of music access. For the first time, the industry derived the same proportion of revenues from digital channels (46%) as physical format sales (46%). Music subscription services were a major driver of digital growth, sustaining a sharp upward trend of recent years” (IFPI 2015).

1) Spotify

Currently, the most popular streaming service is Spotify.²² Spotify arose to provide an alternative to piracy. Its basic concept is to provide free access to a wide breadth of legal catalogues and to cause users to become “hooked” so that they will subscribe to a premium service, an ad-free “offline” mode. By achieving a critical mass in Sweden where the company originated, Spotify offered a solution to market entrenchment: large-scale access at low cost. It was the result of an alignment between the two biggest players in the recording industry with conflicting interests: digital music users and labels. Spotify’s freemium-based music service, with its “legal and superior quality” to P2P file-sharing, as well as its immense number of legal catalogues, have proved to be enticing enough to attract 30 million paid users at its peak. As of June 2015, Spotify has 75 million active users, of which 20 million are paid users (Spotify News 2015).

2) Deezer

Deezer is the second largest on-demand digital music streaming service provider, headquartered in Paris, France. It has 16 million active users and 6 million subscribers (Peoples 2014). The service started as a free streaming music service on a website called Blogmusik in 2006. The growing popularity of the service, however, drew attention from record labels. Daniel Marhely, who first developed Deezer, had to stop the service until he signed agreements with SACEM, a collecting society in France. Re-launched with proper agreements in place, Deezer attracted a large number of customers. Its success owes much to its partnership with Orange, the largest telecom company in France, which allowed young users to be exposed to Deezer’s service easily. Deezer,

²² A detailed analysis of Spotify’s business development is discussed in Chapter 6.2.2

although less known than Spotify in the major markets, is more global than Spotify. It took a strategic decision to target markets with high mobile phone uptakes, which the company perceives as the largest attraction for streaming services. Since streaming services are relatively new in these regions, Deezer put efforts to help users make sense of this new mode of music listening experience. Jerome Coic, Artists Marketing Manager at Deezer, who worked for Orange France before joining Deezer, believes that mobile phone integration and the offline mode are key factors in users' satisfaction.

“In the region where Spotify is being provided, the concept of streaming service is widely accepted. In different regions, it's very new, and we have to explain that. I think mobile phone integration is what makes the users to switch to premium service. And the offline mode. When we explain the user API, at some point, they understand that they're only paying for the subscription, they have the access to music, and do not own it. But the offline mode on mobile, which allows users to download and listen to them even in offline mode, this model is a bit more tricky for some users to understand, but once the users see what they can do with it, then it makes them to subscribe to the service. In France, you have three months free services with no restrictions, and now we are trying to have a new service which will be available internationally, and we make sure we provide a trial period so the users understand it. It's about a lot of teaching and educating.”

(Jerome Coic, Artists Marketing Manager at Deezer, Interview, 30 January 2013)

Deezer now plans to launch in the US (Peoples 2014), but the licensing fee for the major labels is another consideration they have had to take into account in developing their business strategies. Jerome Coic says the hefty royalties required to launch in the US stopped Deezer from targeting other markets.

“We can't provide the service in the US because the royalties for the recording companies are very high right now. We decided not to go to [the] US in the beginning and to be able to take care of all the other countries.”

(Jerome Coic, Artists Marketing Manager at Deezer, Interview, 30 January 2013)

From early on, Deezer paid a special attention to helping their users discover new music so as to offer a distinct experience. James Foley, Head of Editorial at Deezer, explains that music curation at Deezer is conducted by combining the algorithm and the editors' choices.

“A lot of the services that are subscription streaming services, we have the same price point. So if we are going to change, the margins are tight. So if we are going to offer a different experience, at the same price, that experience has to be very different. So we have to play to our strengths, which are an innovative tech team, a product team and the experiences and the knowledge of our editors. So that is really why the changes have been rolled out...There are 50 plus editors around the world but also an advanced algorithm researched by our R&D department in Berlin and it is a way of combining those so that we can provide an unique, personalised music service to all of our users around the world. That takes information from not just the advanced algorithm but also real people picking music.”

(James Foley, Head of Editorial at Deezer, Interview, 10 April 2013)

3) *Apple Music*

While Apple appeared to remain “the last defender” of the download music business, it was becoming increasingly clear that “streaming services like Spotify will overturn the music ownership model that Jobs fought to preserve” (Weinman 2011). Prompted by this change, Apple launched a music streaming service called Apple Music on 30 June 2015. Early in 2014, Apple Music purchased Beats Music, which had originally arisen as a competing streaming music service to Spotify named Daisy. Beats Music aimed to challenge its competitors by providing a solution to “a problem that most music fans may not realize they have: deciding what to listen to” (Sisario 2014). Apple Music uses Beats Music for personal music recommendations in its live radio station, a feature distinguishable from Spotify. Apple Music hired BBC Radio 1 DJ Zane Lowe as a music

curator (Thorpe 2015). After three months' free trial, 40 per cent of users cancelled their subscription, leaving 6.5 million paying subscribers, a drop from 11 million (McIntyre 2015). Despite Apple Music's emphasis on new music discovery, Spotify is credited as "light years ahead of Apple Music" in terms of fresh sounds, while Apple tends to feed listeners popular and familiar sounds (Mitroff 2015). Still, uncertainty abounds as to the future of digital music services: the majority of users might prefer to stay in their music comfort zone; music discovery might not be as crucial as music service providers assume; or new forms of service will overtake the current streaming service model.

4.5.2 Issues

1) Artists' Earnings

Amidst the growing optimism emerging in the industry, however, disputes remain over whether artists are sufficiently compensated for their work. Two claims have gained particular prominence. First, that music on streaming services is undervalued, and secondly, that a fair compensation system is required. The argument that music is undervalued has been magnified in the wake of a few celebrities' vociferous critique. Thom Yorke, lead singer of Radiohead, denounced Spotify as "the last desperate fart of the dying corpse" (Dredge 2013b), while David Byrne, lead singer of Talking Heads, raised concerns that "the Internet will suck the creative content out of the whole world until nothing is left" (Byrne 2013). More recently, Taylor Swift withheld her repertoire from Spotify, arguing that Spotify's meagre pay-out was not a proper price for her artistic work (Swift 2014). Pundits and academics have also joined the debate. According to Lalonde (2014), the current model of digital streaming services devalues music: the free advertisement-based services give away music, and the subscription fee is considerably lower than other equivalent services such as Pay-Per-View ("PPV") or Video-On-Demand ("VOD").

While streaming services have largely been blamed for the paltry amount of royalties generated by pay-per-stream, some of the focus shifted to labels when the contract between Sony Music and Spotify was leaked in May 2015 (Singleton 2015). This revealed that a considerable amount of money generated from streaming services, such

as upfront payment, equity stakes and streaming rate, remain in the hands of labels and are not paid out to artists. The market power skewed toward the major labels appears to persist in the digital age and this arguably leads to an “unfair” distribution (Erickson 2015). This is manifested in the fact that 70% of streaming revenue goes to the labels, and no streaming services have proved to be profitable, despite continuous growth (Tschmuck 2015). This is linked to another major problem: lack of transparency (Hirschhorn 2015). The opaqueness of the negotiation between services and labels, and the contracts between artists and labels, is said to be a primary impediment to remedying the problem (Rethink Music 2015). This has led to a desire to build a “fair” compensation scheme and create a “virtuous” value chain in the music industry (Lalonde 2014; Rethink Music 2015; ECSA 2015) in a context where every “listen” can be tracked globally. One argument is that a centralised global digital music database could help ease the problems relating to fragmented use of digital music repertoires, revitalise the digital music market by providing better services to consumers and ultimately compensate artists better (Ghafele 2014).

2) Playlist – Digital Playola

Streaming services have enabled an untrammelled garden of digital music choices. As this platform is increasingly becoming an important destination for digital music consumption, the changing demographics of the users have resulted in new demands in terms of the ways their music choices are presented to them. The solution that digital music services have invented to deal with digital music users’ new requirements is curated playlists. As it has turned out that playlists in streaming services can ensure songs’ popularity, concerns have been raised about whether streaming playlists will become a “Playola”: “[S]treaming playlists will become like radio playlists: reachable only by labels and artists with the resources to afford robust promotion” (Peoples 2015).

4.6 Concluding Remarks

This chapter has discussed the actual process of innovation involved in building a commercially viable business model in the recording industry, as well as the post-Napster early trials, characterised by major labels' resistance to digital novelty and independent players' efforts to embrace the change. Neither of the approaches proved to be effective in solving market entrenchment. A technology firm, in this case Apple, provided a new approach of pay-per-track download at a fairly low price for a wide breadth of legal catalogues. Although it was successful to a certain degree, piracy continued unabated. This left a space for new experimentation. Through the cases of Last.fm and YouTube, this study showed how companies with more or less the same business model, in this case an advertising-based free music service with unlimited access, experienced different fates as they coped with challenges differently. The chapter then reviewed how the technological development of P2P has strayed from its initial prediction. The legal measures the recording industry employed guided the development of P2P technology along a certain path by forcing developers to follow the precedent court decisions. Along with these changes, socio-technical elements such as digital music users' perceptions of P2P technology, as well as business practices, resulted in a decreased attraction to P2P file-sharing. What appears to be crucial to reduced piracy are superior legal offerings to P2P file-sharing. As Spotify's freemium-based streaming service began to make a significant change in the market, other services such as Deezer and Apple Music are making inroads to offer better experiences to digital music users. Although these services are increasingly perceived to be an attempt on the part of the recording industry to eliminate piracy, and to signal a potential recovery of economic growth for the recording industry as a whole, issues such as artists' earnings and "Digital Playola" are yet to be resolved.

CHAPTER 5. DIGITAL MUSIC DISTRIBUTION NETWORKS

5.1 Introduction

This chapter analyses the evolution of digital distribution networks have evolved since Napster by combining the documentation and the interviews. After a period of transition, iTunes laid the foundation of the digital distribution infrastructure. The direct distribution system between major labels and iTunes allowed major labels to maintain their control. The influx of new demands catered for by independent labels accentuated an emergence of new intermediaries. Digital Music Distributors, as these new intermediaries would soon be dubbed, started as simple digital music aggregators but later, as the digital market continued to grow, came to play a crucial role in shaping digital music convergence. At the other end of the spectrum, a range of services emerged to tap into the affordances of digital networks in order to bring democratic production and musical diversity. Amidst the overall uptick of digital services in general, unexpected problems within the digital music economy arose and new solutions were devised to combat them; the sheer abundance of music choice afforded by new digital services sparked a resurgence of the old model. This chapter ends by describing the complex value networks involved in the contemporary digital music industry.

5.2 Foundation of Digital Music Distribution Infrastructure

5.2.1 Lack of Infrastructure

The predominant discourse surrounding digital revolution prompted by Napster includes implications that technological possibilities are tantamount to the technological implementation. This account, however, fails to take into account the most crucial aspect of technological development. Radical technological innovation rarely follows predicted development trajectories due to the lack of matching innovations, instead is subject to conflicts and struggles amongst a diverse array of players (Sørensen 1996; Williams, Stewart, and Slack 2005). Napster, novel though it may have been, was not a thoroughly thought-out technology. It failed to become an enabling technology or reach adolescence, primarily because, at the time, there existed a tremendous amount of technological, social and cognitive constraints to overcome. Because Napster was a radically emerged technology, the surrounding infrastructure spread out slowly, only after years of learning processes by heterogeneous players.

Many interviewees witnessed this radical change in the music industry first-hand. Scott Cohen, co-founder of The Orchard, a digital music distribution company, was one of the pioneers of the digital music business. He started the company in 1995 with his business partner Richard Gottelher. As their business as a record label did not go well, they began looking for alternative ways to promote the artists on their label. The Internet was a new medium they decided to use. They contacted music fans on the Internet by sending emails to the users of AOL, a popular Internet Service Provider in the 1990s that offered everything from chat rooms to bulletin boards and rudimentary search functions. Although the users they contacted represented tiny niches, the rarity of email usage at that time earned them a 100% response rate. They were intrigued by this novel way of delivering music, and set up a new digital music company called The Orchard in 1997, the first digital music distributor. They fought bitter battles during the early years and even teetered on the brink of bankruptcy at one point. The hardships that Cohen experienced provide an insight into the lack of business infrastructure during this phase. He explains that from the Internet connection to storing music files,

the infrastructure at that time was far from ready for a commercialisation of the music business.

“The biggest challenge was to even explain digital to people that were not even connected to the Internet. Most people did not have Internet access in the ‘90s. Broadband didn’t exist. The second challenge was how do we even get the things inside the computer. I mean, all these seem so obvious now, but it wasn’t obvious back then. Delivery was slow, painful and expensive to encode catalogues of music. Storage was also expensive. The amount of storage that I have on my MacBook compared to what storage was in the ‘90s would have been tens of thousands of dollars.”

(Scott Cohen, co-founder of The Orchard, Interview, 7 August 2013)

Napster changed this to a certain degree. But the initial reaction of people in the industry to the new digital music business during this period was one of hostility. Scott Cohen continues:

“Not only were they resistant to it, they were actually fairly aggressive with their views that what we were doing was something bad...Then you’d begin to get the business models in early 2000s. But most of those were kind of Web 1.0 models which were just like the old world replicated online.”

(Scott Cohen, co-founder of The Orchard, Interview, 7 August 2013)

A project to commercialise Napster was another episode that demonstrates the lack of infrastructure during the early phase of the digital music era. While major labels were gearing up to pursue litigation to take down the service, independent labels wanted to embrace the new opportunity. One of the examples of this effort was a project initiated by a group of organisations representing independent labels’ interests. IMPALA, the Brussels-based Independent Music Companies Association, and AIM (“Association of Independent Music”) struck a deal to use Napster’s repertoire, enabling consumers to listen to diverse independent music legitimately and compensate the artists at the same

time (IMPALA 2001). However, this ambitious project proved to be an incredible challenge due to the unprepared digital music infrastructure. Helen Smith, the Executive Chair and Secretary General at IMPALA, was in charge of the legal side, and Gordon Rintoul, who currently works for INgroove's Client Services, took on the technical side. Gordon Rintoul says that it required a considerable amount of work and time to turn Napster's P2P platform into a commercial platform:

“There were mechanics that needed to be looked after at that point. Because there were a thousand record labels with all of this content on CDs, and then you had Napster which was a Peer-to-Peer platform, the question became how to make it into an actual commerce-based platform? Even the simplest thing like how to handle the data - there were no spreadsheets like what we use now. We figured out that we could put the data into Excel sheets so we can move them into XML and import them into the database. And out came the core concept of gathering data through Excel sheets, which we use today. At that time, Napster required five fields of data, because they hadn't thought yet of the flipside of how everything's paid for. They only thought about how to get the content onto the platform. We started looking to standardise everything - Excel sheets, data sheets, how publishing would be paid for; we had to look at how a label would be paid, how to deal with individual rights, different territories, all those different things. That took three years of work. Three years of solid work.”

(Gordon Rintoul, manager of Client Services at INgrooves, Interview, 23 August 2013)

This layout has established the foundation for the digital music transaction format and is still largely in use. What this anecdote highlights is the fact that not only was Napster's domestication in the hands of a few recording companies (Spitz and Hunter 2005); there was also a fundamental lack of “matching innovations” (Rogers 2014).

5.2.2 Beginning of Legitimate Digital Music Distribution Infrastructure

1) Major Labels' Path

Unpredictability and high risk have characterised the music business. The process of music distribution – manufacturing, mass production of physical products, storing products at a warehouse and finally delivering products to retailers – “each of these technologies was initially expensive, specialised, and not accessible to individuals” (Kernfeld 2011, 14). As the process of creative production entails a high level of uncertainty, it becomes crucial to control consumers’ access to the product. For the recording companies who invest a significant amount of money, maximising the exposure of their products is vital for recouping their investment. The control of distribution, therefore, becomes essential to exerting power by deciding which product will be selected and reducing the uncertainty entailed in the investment (Hirsch 2000).

Initially, most labels distributed their albums through their own sales and distribution team, who would contact individual stores. As the volume of records increased, the major labels built their own distribution system in which publishing, record label, manufacture and distribution units were built into the business structure. Known as vertical integration, this system is defined as “the combination of technologically distinct production, distribution, selling, and/or economic processes within the confines of a single firm (Porter 1980, 300).” The lowered cost involved in music production and the barrier to distributing music suggested by digital technology was conceived as having the potential to revert this system. Alison Wenham, Chairman and CEO at Association of Independent Music (“AIM”) explains what it means to lose control over the supply for major labels:

“The majors at this point have not been used to this idea that they were losing control of the distribution, the control in supply chain and when you control the supply chain, it’s like a possession is nine-tenths of the law. If you control the supply chain, you control the why, the where, the when and how much. If you don’t control the supply chain, you don’t control any of that. And the majors were

absolutely terrified of that.

These are companies who have grown up super fast, produced very big businesses, and it was very big profits. Think about it as a jumbo jet. It's a big piece of machinery. And somebody is telling you to land it on that piece of marshmallow, because it will probably be alright. Well, they couldn't risk that. Not with their shareholders, not with their businesses."

(Alison Wenham, Chairman and CEO at AIM, Interview, 30 July 2013)

Figure 10. Digital Music Value Chain for Major Labels



Four major labels at that time, Universal, Sony BMG, Warner and EMI, controlled the distribution of over 80% of the world's music. To ensure that iTunes had all the catalogues from the major labels, Apple had licensing deals in place. Although the details of the negotiations between Apple and the major labels might never be made public, the result is well known. iTunes allowed major labels to build a direct digital distribution system, a system favourable to major labels at the expense of not fully tapping into the potential of disintermediation (Arditi 2014). This could also be understood as an extension of their control over the supply chain in the digital era. One manifestation is the fact that major labels could negotiate retail price with iTunes directly, while independent labels or individual artists could not. However, the major labels' lack of expertise in technical knowledge turned out to be the bottleneck for continued control, which is discussed in Section 3 in 5.4.2 and Chapter 6.2 in more detail.

2) Independent Labels' Path

In the conventional system, numerous and diverse distributors and retailers existed in order to cover as many regions as possible. Rich Bengloff, President at The American Association of Independent Music (“A2IM”)²³ recalls this and says:

“Back then, instead of having one distributor of music, you may have some whack the hits, do your distribution, southeast, Big State distribution in the Texas, Oklahoma area, CD one stop northeast doing in the northeast, a variety of different distributors.”

(Rich Bengloff, President at A2IM, Interview, 27 March 2013)

The most efficient way to target fans of independent music is not as same as with mainstream music. Bill Crowley, VP at eOne, explains that the cost involved in targeting nationwide audiences is not well-suited to independent labels.

“Our strongest suit is urban genres, hip-hop, R&B, also rock, heavy metal, Christian gospel. Some people call them niche or speciality genres. It’s not a broad mainstream teen pop feel. The issue with those kinds of genres in the US especially is that to effectively market and promote to that audience, to do it nationally is a huge investment. You have to deal with all the gatekeepers, radio gatekeepers etc. Things get expensive very fast. Since you have to reach the entire population, you spend on reaching people that who are not our audience anymore.”

(Interview with Bill Crowley, VP at eOne, Interview, 28 March 2013)

Therefore, distributors came into the market to help independent labels distribute their albums to diverse retailers.

When Napster emerged, the independent labels’ response was different from that of the major labels. Alison Wenham, Chairman and CEO at AIM, emphasises that digital technology was regarded as an opportunity, rather than a challenge, by independent

²³ A2IM is a sister organisation of AIM in the US.

labels.

“When Napster came along, we were in a position to embrace Napster. We felt that it offered a fantastic global platform to music lovers. We felt that the technology had jumped off the box quickly and fundamentally these people were not cynical pirates who created a platform to rip people off.”

(Alison Wenham, Chairman and CEO at AIM, Interview, 30 July 2013)

After all, independent labels didn't have much to lose.

“We would say, ‘well we will try it, we will see, because what do we got to lose?’ What do we have to gain, what do we have to lose? We can try. We are very innovative, we are very agile, with very low overheads, we are curious, we are inquisitive and we will try all sorts of things. Go back over the development of genres, music genres; they all come from independent sector.”

(Alison Wenham, Chairman and CEO at AIM, Interview, 30 July 2013)

iTunes, equally, was an important new avenue for independent labels. Unlike major labels, however, independent labels could not afford to build direct distribution channels with the digital music service providers. This brought about a considerable restructuring of digital music distribution networks.

- Emergence of Independent Digital Music Distributors

Perhaps the most significant change in the independent digital music distribution networks has been the emergence of a new breed of intermediaries: digital music distributors. Consolidated Independent (“CI”) was established as a digital music delivery platform during this period. Kieron Faller, General Manager at CI, describes independent labels' lack of knowledge in digital technology as the driving force behind CI's business as a platform:

“They [founders Paul Sanders and Philip Crewdson] saw that there was going to be a need on the independent side of the industry for technical infrastructure. They could see that the majors could afford to have their own systems, because they had the capital to invest in infrastructure and they could kind of manage the technology. Each individual, independent label had no way of doing that, because they didn’t have the funds and they didn’t have the expertise.”

(Kieron Faller, General Manager at CI, Interview, 30 August 2013)

The biggest client for CI’s system is Beggars Group.²⁴ The observation that even companies like Beggars Group need technical support for digital music delivery, drove CI’s founders to build an infrastructure for independent labels.

“Even the larger kind of independent labels were very used to physical distribution and they will likely to find it difficult to make the transition across. So the founders saw that a way to approach the issue would be for there to be a centralised infrastructure hub, an infrastructure and service that then dealt with the technical requirements of getting content from one place to another, and effectively spreading the cost of that, across a range of independent clients. So each individual independent label was itself, buying a small fraction of the infrastructure cost. And that’s really proved correct.”

(Kieron Faller, General Manager at CI, Interview, 30 August 2013)

A parallel demand, in tandem with the labels’ need for assistance, came from digital music service providers. Napster took the unlimited music access genie out of the bottle, and digital music service providers were compelled to cater to consumers who sought niche products. Since most independent labels are specialised to provide niche genres of music, and are autonomously owned and operated, the process of acquiring

²⁴ Once an underdog at the vanguard of a fledgling post-punk movement, Beggars Group now looms tall as the biggest independent record label in the world, whose roster includes powerhouse acts like Adele and Vampire Weekend. It owns four major independent labels: 4AD, Matador Records, Rough Trade Records and XL Recordings.

their vast but disconnected catalogues on a case-by-case basis was an immense task. Dominic Jones, Marketing Director at INgrooves, explains how digital music users' demands for independent music catalogues gave rise to the emergence of independent digital music distributors.

“So the majors always had the power because of their standing to do directly. Most of the independents always have to get together and say, look we are 25% of the market, don't ignore us. But because of the fragmentation, because of they are made up of 3000 labels, this much is difficult to deal for a company to do with the retailer unless they get together or unless they go through a recognised distributor, which is how independent distribution was born really.”

(Dominic Jones, Marketing Director at INgrooves, Interview, 5 August 2013)

Phonofile is a digital music distributor founded in 1995 in Norway. Trond Tones, Marketing Manager at Phonofile, explains that the demand for a middleman who can collect and manage digital music data opened windows of opportunity for companies like his.

“The companies (digital music service providers) wanted to roll out music services. They needed a lot of catalogues. And to get the catalogues, they wanted partners who help them collect these catalogues and send them over in a right format with the right metadata. It would take years and they probably need to hire a huge number of people, and once they attain the catalogues, they won't need all the employees. So they said let's outsource this. That, I think, was a natural thought. And then it became the digital music aggregators. As the digital technology developed, the early aggregators have become digital music distributors.”

(Trond Tones, Marketing Manager at Phonofile, Interview, 29 January 2013)

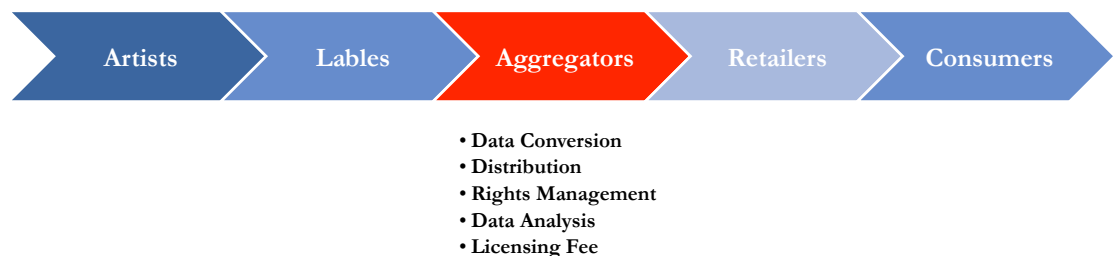
Digital music distributors also serve a crucial role on a practical level, just as intermediaries for a franchised grocery store would. Scott Cohen captures the nature of

independent digital music distributors.

“It’s no different than if you go to a grocery store here, Tesco. They don’t deal with every farmer. A farmer doesn’t come to the store and say, ‘I brought some tomatoes and apples.’ They can’t do that. These companies that distribute all the produce are the ones that deal with all the farmers. They put it all in one big warehouse and then they ship it to all the stores. The people like iTunes, Amazon, Spotify and the hundreds of others...their customers are not their suppliers. They want as few suppliers as possible. They’d want to be able to talk to us once a week. If there are thousands and thousands of suppliers, then they don’t know what they should be featuring on their homepage. They just don’t know because they can’t have individual conversations with their five thousand suppliers.”

(Scott Cohen, co-founder of The Orchard, Interview, 7 August 2013)

Figure 11. Digital Music Value Chain for Independent Labels



While the barrier to pre-filtering their selection has been abolished, digital music service providers still feel the need to manage the quality of their content. This is where digital music distributors fit into the equation. Dominic Jones says:

“We are the conjugate to the market for our labels...There’s no way that any of those retailers could, physically -- there’s not enough time in the day to hear from 3,000 independent labels and three majors. Just couldn’t happen. So they need a filter and those filters are distributors or aggregators.”

(Dominic Jones, Marketing Director at INgrooves, Interview, 5 August 2013)

- Technical Assistance

Besides the lack of funds and expertise to build an online transaction infrastructure, independent labels were also not equipped with the skills required for digital business. Many tools were developed in the digital age which lowered the hurdles to reproducing, distributing and promoting digital music; these tools, although beneficial in many ways, produced the false idea that digital transactions can be easily managed and maintained by anyone, regardless of background or training. Contrary to this belief, however, most labels quickly came to realise that they needed professional help in this highly technical arena. FatBeats, a hip-hop vinyl distribution company, distributes their digital albums through INgrooves. Tyler McWilliams, Sales and Marketing Director at FatBeats, explains the lack of expertise and the economic consideration were the main reason to choose to rely on aggregators for digital distribution.

“We didn’t do it ourselves because we simply don’t have the staff [who can take care of digital distribution]. Our time and energy is focused on physical distribution, and it’s easier to simply use their service at the expense of some margin. To put simply, the cost of using an aggregator is less than the cost of an additional full time employee.”

(Tyler McWilliams, Sales and Marketing Director at FatBeats, 29 January 2013)

Gordon Rintoul, who is in charge of the digital distribution client at INgrooves, affirms that technicality is not labels’ main subject of concern.

“First and foremost, labels have never been good at that. Never. You will now have to go back and look all the older albums and look at the spelling mistakes on the back of them when the old like you know when it’s the actual vinyl. Look at all the spelling mistakes and errors etc. They’ve never been good at it. Labels’ emphasis is on the creative side -- the creation of the music, the ethos and the

artists behind it. So there's not very much attention to detail. That's always been the problem."

(Gordon Rintoul, manager of Client Services at INgrooves, Interview, 23 August 2013)

Digital music distributors' main responsibility was originally converting files from physical formats into digital formats using metadata. Metadata is the information used to identify the unique attributes of an audio file. It is composed of the song title, name of the artist(s), name of the album, music genre, ISRC,²⁵ publisher and price. For the communication of metadata, the XML format has been widely used.²⁶ Although it widely used today, metadata was a novelty to many people in the music industry at the outset of the digital business. Alex Branson, SVP at INgrooves International, shares an anecdote.

"Essentially the problem was there were these record companies...and then technology companies came along, and said to the record companies, 'Okay, this is great. We like your music. Can you send that to me in a particular file format, and can you send me the data in XML?' And guys in the record companies were like 'XM what? Can I send you a word document? Is that the same thing? Can I send you a CD?' There was a long period of time when people were literally doing this. Here's a box of CDs, and if you're lucky you've got a spreadsheet with data typed out."

(Alex Branson, SVP at INgrooves, Interview, 16 May 2013)

The problems caused by labels' deficiency in attention to detail persist in the digital age. Don Gross is a Client Service Manager at INgrooves, and is in charge of clearing metadata before sending files to digital music service providers. Gross is often startled to find many labels making simple mistakes on what appears to be crucial information

²⁵ The International Standard Recording Code. As an international identification system for sound recordings, it helps manage digital music rights.

²⁶ It is in transition to Digital Data Exchange ("DDEX").

for the labels.

“The biggest problem with it is the labels themselves or the artists dealing with their own data. The number of labels and artists who can’t spell their own names is frankly shocking. You just think that some people don’t seem to care about their own data. They don’t seem to understand that it has value and this is what people are going to see on the store and read on the websites in all aspects.”

(Don Gross, Client Service Manager at INgrooves, Interview, 12 September 2013)

Digital music service providers’ technical standardisation requirements in metadata constitute another layer of technicality that often frustrates labels. While its standardisation effort could prove to be useful in some senses, it sometimes works against artists’ creativity. Sharon Matheson, Label Manager at INgrooves says:

“Metadata has to be so standardised now for iTunes. We know an artist’s named DENA and the name is spelled capital D, capital E, capital N and capital A, but in iTunes that comes up capital D, and lower case for ‘ena’ (Dena). It’s very different in all the branding. So metadata standardisation is both a blessing and a curse.”

(Sharon Matheson, Label Manager at INgrooves, Interview, 11 September 2013)

In summary, the growth of digital music business sparked by iTunes laid the foundation for digital music distribution infrastructure. Major labels who had sufficient funds and market power built a direct distribution system with digital music service providers. On the other hand, independent labels’ lack of capital and technical expertise in the digital music business gave rise to the emergence of independent digital music distributors.

5.3 DIGITAL MUSIC CONVERGENCE

Over the years following iTunes' launch, the digital music business slowly began to show signs of an important revenue stream potential. On the one hand, recording companies were making strenuous efforts to maintain their conventional business. On the other, diverse services were springing up supplying a range of tools for artists to tap into the new opportunities suggested by digital technology. However, as the market matured, unexpected issues arose to pose barriers to wider adoption.

5.3.1 Direct-To-Fan (D2F) Revolution

A range of tools for Do-It-Yourself (DIY) media production and distribution has been perceived as a force for bringing the digital revolution to fruition. It was propagated by the legacy of Napster and the P2P networks, which is “regarded as community empowerment, the reinvigoration of shared passion for music, and a re-signification of intellectual property infringement, especially copyright” (Reia 2014). At the centre of the discussion of DIY's potential to democratise musical production, distribution and consumption is its ability to bypass conventional business frameworks and facilitate subcultures that, for a long time, could only exist in the margins.

The distant history of DIY goes back to the 18th century, when, in the wake of new technological developments, a number of musicians began expunging the patronage system – in which aristocratic benefactors bankrolled the creation of artworks – and pursued new careers as self-employed musicians (Scherer 2004). A more recent example of DIY initiative in the world of music came in 1977 when the post-punk band Desperate Bicycles released their single “Smokescreen/Handlebars” on their own, without the assistance of any label. Since these experiments, DIY began to carry the connotation of a revolutionary approach – “to fuck the system” – through the empowerment of individuals (Dale 2008).

The digital DIY movement can be categorised into three phases. The first was propagated by Radiohead, one of the first bands who tapped into this new opportunity.

When their contract with EMI ended in 2007, Radiohead released their seventh album, “In Rainbows”, on their own by allowing fans to download the songs on their website at a “pay-what-you-want” price – anywhere from zero to £99.99 for handling fees and anything in between. During the first 60 days of the album’s release, their website logged over 3 million visits. The net revenue they earned from this album was £2.67 on average, which far exceeded what they would have received from their contract with a major label (Green 2008). This experimentation was succeeded by Trent Reznor of Nine Inch Nails, who, although having enjoyed multi-platinum sales in the 1990s, has outspokenly criticised the music industry for “ripping people [artists] off”. He has encouraged fans to download his songs illegally, condemning the music industry for exploiting consumers’ willingness to pay by “forcing” them to purchase physical products (Moses 2007). These experiments and criticisms, however, remained limited to select well-known acts and did not become a mainstream adoption. P2P networks and musicians’ websites were the main avenue for these experiments.

Technological advances in DIY, fuelled by social networking tools, permitted artists to expand their DIY activities to include the power of Internet communities. Artists breaking out via so-called Web 2.0 tools can be categorised as the second generation of DIY. These tools of disintermediation slowly made inroads for unknown artists who either did not want to sign contracts with labels or simply did not have the ability to do so. MySpace earned Lily Allen, a pop singer, the badge of “the social networker of the decade” (Swash 2009), and Connor Oberst emerged as a breaking new musician through YouTube. A plethora of new digital music avenues also arose to enable musicians to distribute and promote their music for free, legally. Jamendo and Megatune allowed self-releasing artists to distribute their music under Creative Commons License (“CCL”) on their platforms.

The lowered barrier to entry and widened adoption of legitimate digital music services spurred a wide range of innovation in DIY tools. Some companies provide tools that help artists connect with their fans directly without having to do deals with labels – also

known as Direct-To-Fan (“D2F”) services. D2F takes in various forms: crowdfunding services, artist management companies, and digital music distributors.²⁷

1) Crowdfunding

Throughout the history of professional musicianship, the success or failure of a career has depended to a large extent on the financial capacity of the artist. The high cost of reproduction and distribution, in particular, rendered most artists subordinate to their label. Although the shrinking overheads in music creation alleviated this burden in the digital age, digital tools did not entirely eliminate the importance of financial support in an artist’s career. The means to overcome financial constraints, however, changed. Enabling a direct link between artists and fans, crowdfunding services arose as a platform where artists could launch their own project on their own terms without the need for a financial middleman. Fans interested in seeing the works of their favourite artist come to fruition could pledge funds directly. Companies like Kickstarter, PledgeMusic and Indiegogo are the pioneers of this concept. Kickstarter covers a variety of works, whereas PledgeMusic and Indiegogo specialise in music.

Kickstarter’s business idea was sparked by the personal inspiration of the original CEO of Kickstarter, Perry Chen, to put on a concert during Jazz Music Festival in 2002. The idea was consolidated when he met Yancey Strickler, the current CEO of Kickstarter, in New York. They became convinced that their idea had merit when they met a group of friends who wanted to pursue their career as artists but could not, due to their own financial limitations. PledgeMusic, meanwhile, emerged to provide an answer for artists struggling to earn a living in the age of declining album sales; it enabled consumers to participate in the creation of a record in exchange for a pre-order (Ingham 2014). By liberating artists from financial dependence on labels, this and other D2F platforms have contributed to catalysing innovative changes.

²⁷ Companies exemplified here are not exclusively categorised as one of the three forms. Often their roles cross over. For example, PledgeMusic does not exclusively provide crowdfunding; it also serves as artist management. The major roles of the companies were used to categorise them in this research.

- Participatory Platforms

Principally, these platforms serve as a pipeline of collectivism through which fans become important collaborators in the production of content. On such platforms, users become a crucial part of the design process by participating in the early phase of the project. Fans' further engagement is achieved as a form of barter economy in which users opt to receive something in return. Benji Rogers, CEO of PledgeMusic, said in an interview with *Music Week* that it is vital for artists to find and cultivate an engagement with hardcore fans who want to engage deeply with the artists they admire.

“Years ago I used to bartend with some of The Hold Steady in the East Village and I just couldn’t get them interested in Pledge. But when they eventually tried it and saw the reaction from the fans, they were like, ‘Wait, our fans love this, and this is stuff we do for free anyway!’”

(Tim Ingham (2014) “Living on the Pledge.” *Music Week*. 26 September, sampled 15 February 2016)

From one viewpoint, this platform is “reminiscent of the Artists and Repertoire (A&R) function traditionally played by the recording industry” (Galuszka 2015b). The deep engagement enables fans to feel responsible for and become very attached to the artists' projects. It can raise or manifest fans' loyalty to artists and willingness to spend money on the project. The generative values created on this platform offer a special embodiment of the project that is “better than free” (Kelly 2008). In the music arena, this is manifested as an answer to the music industry's long-fought battle with piracy. Yancey Strickler observed that direct engagement with artists makes users part of an artist's career by providing financial support.

“Some people think Kickstarter is the most effective anti-piracy tool, because you're asking for upfront fees for all different things, and we exist only if you pay. There's another part of it. You're being a patron of some work that you love. So I illegally downloaded this Radiohead album, but on Kickstarter I'll give 50 bucks, because I want to make up for that. Also, it does feel different now

when your money is paid directly for someone versus iTunes where you really don't know what percentage of \$9.99 goes to the artist.”

(Yancey Strickler, CEO of Kickstarter, Interview, 27 March 2013)

- Artists' Empowerment

Financial independence also means liberation from creative control, which often resides in the hands of labels. These platforms, therefore, empower artists to choose what they think is best for their career while retaining all ownership and rights therein. Among the numerous musicians who launched their career through Kickstarter, Amanda Palmer is one of the most well-known cases. As a former member of the Dresden Dolls, she launched her orchestral solo recording project on Kickstarter in 2012 and raised \$1.2 million from about 25,000 fans. Her project was hailed as proof that social media could bring about changes in the music business (Clark 2013). For Palmer, this is a platform for “an emerging middle class of artists who don't have to be superstars”. In an interview with *Forbes*, she says,

“Success is no longer getting on MTV or being Madonna or Prince. We're now finding you can have a sustainable life in which you get to make art for people – which actually sounds much better”.

(Dorie Clark (2013) “Amanda Palmer: Proof That Social Media Is The Future Of Business.” *Forbes*, May 9. Available online at: <http://www.forbes.com/sites/dorieclark/2013/05/09/amanda-palmer-proof-that-social-media-is-the-future-of-business/> (sampled 15 February 2016))

For others, it is a platform for rising to become a major label act. Thanks to their success on PledgeMusic, the Headstones, a Canadian hard rock band, signed a contract with Universal, wearing “PledgeMusic” logo T-shirts (Ingham 2014).

- Modern Patronage System

Although platforms like Kickstarter and PledgeMusic might appear to be novel progeny of the digital age, we can in fact trace the roots of their core D2F concept back to the 15th century, when the first private patronage relationships emerged. Up until the 18th century, most composers earned their bread from diverse sources, and securing support from noble and wealthy patrons allowed artists to focus exclusively on creating masterworks instead of facing the humdrum distractions of workaday life. Yancey Strickler thinks that Kickstarter exists in the continuum of the patronage system that potentially transcends, if only in the sense of creative quality, the prevailing industrial complex that caters to the lowest common denominator of mass media:

“We’re very much of a legacy of patronage and subscription system, which is how a lot of authors published their books. For the last 70 years, we’ve been at a war where mainstream culture was primarily subsidised by corporations for reasons of making money. Looking at the history of mankind that is a very small period. I think the development of this ability to extend beyond nobility and royalty of church is obviously a positive thing...Some of the dynamics of this system is original, but the notion itself is something that has long been a part of the culture of civilisation. And I think that’s part of why it’s managed to be accepted in a relatively short amount of time. There is something distantly familiar about it. In a sense, it does make sense.”

(Yancey Strickler, CEO of Kickstarter, Interview, 27 March 2013)

To a large degree, composers supported by nobles faced pressure to create works that catered to their patrons’ tastes. In an open-ended participatory platform where anonymous consumers are the sponsors, artists can brave their creativity in whatever form it takes. Yancey Strickler thinks Kickstarter is in line with this principle.

“If there’s one place purely preserved for this (creativity), it still will be the big stage. It’s not about making judgments on who’s worthy of creating art, and who’s not. It’s just the idea that there are opportunities for people to be creative and make things. I think the world needs a place like that. And that’s the ground that we want to create, protect and preserve.”

(Yancey Strickler, CEO of Kickstarter, Interview, 27 March 2013)

Yancey Strickler also suggests that funding from the crowd can have an even more far-reaching influence on the culture by liberating the forms of creation, which used to be restricted by commercial interests.

“I think more interesting things that can happen is that the forms that are at stake can change. The album in a form is very interesting. The album is not made of twelve songs, because the artists determined it’s optimal to express their set of musical thoughts. Album has twelve songs, because that’s something they put on a record, and a record was the way that music could be shared, and a record had to be sold in stores.

So if you change what the initial funding is and change the questions behind it, with time you can change the form itself. If I’m raising money from my fans, rather than from a record label, they don’t care if my album is 72 minutes or if it’s three minutes, or if it’s an opera that will be performed in a church in Scotland once every 17 years and it will last for two days. And now that people agreed with me that that is a worthy idea, then I can do that, regardless of what the market may feel. That long-term opportunity to change the form to evolve is something exciting to me.”

(Yancey Strickler, CEO of Kickstarter, Interview, 27 March 2013)

2) Self-Distribution

Central to the notion of democratisation in the digital era is the decentralisation through which the hegemony of large major recording companies could penetrate the market more efficiently and rapidly by spreading the risk of investments over several artists through the economies of scale (Burke 2011). In the music industry, this market power built a barrier for entry meaning that only a fraction of albums could be recorded, distributed, promoted and finally displayed in the store (Hirsch 1972). Jeff Price co-

founded TuneCore in 2006 to provide artists with an avenue for easily distributing their music and generating revenue. Now a former CEO of TuneCore, Jeff Price shared his views on the changes this new means of distribution had brought on Hypebot, a blog on music and technology trends. In this article, he describes the expensive and highly hierarchical structure of physical distribution in the pre-digital era.

“Physical distribution is an expensive, inefficient, costly endeavor of trucks, warehouses, shrink-wrap, inventory systems, finance systems, employees and more. The only way to get distribution was for the artist to do a deal with an entity that had this pre-existing infrastructure – another function of the major labels. In addition, physical retail stores could only stock so many releases before they ran out of room. It was only the majors with their pipelines and money that had access to the shelves of stores like Walmart, the number one music retail outlet in the United States for a period of time.”

(Jeff Price (2012) “How Technology Destroyed The Traditional Music Industry” *Hypebot*, 17 September, Available online at: <http://www.hypebot.com/hypebot/2012/09/the-end-of-the-new-music-industry-transformation-how-technology-destroyed-the-traditional-music-indu.html> (sampled 15 February 2016))

Digital technology, however, significantly lowered this barrier. Literally anyone, professional or amateur, who had their own digital music products could distribute their music on online retail stores. Services such as TuneCore, CD Baby and EmuBands help unsigned artists distribute their music on digital music services. Jeff Price admits that removing the obstacles created by shelf space limitation does not amount per se to an immediate rise to stardom, but companies like TuneCore can reduce the trouble involved in the dissemination (Sisario 2012).

“I’m not going to promise anyone they’re going to be a star. I am going to promise that if you pay me a fee for the service, I will distribute your music to the places you want it to go, and I will deal with all the hassles that come along with that.”

(Ben Sisario (2012) "TuneCore Chief Shakes Up Music With His Own Words" *The New York Times*, 6 May, Available online at <http://www.nytimes.com/2012/05/07/business/tunecore-chief-shakes-up-music-with-his-own-words.html> (sampled 15 February 2016))

-Equal Exposure

Outlets for music have long been considerably limited. This was the case for fledgling artists in particular (Price 2012).

"Most of the twentieth century, exposure in the commercial radio, television and print magazines was virtually impossible if an artist was not supported by a record label".

(Jeff Price (2012) "How Technology Destroyed The Traditional Music Industry" *Hypebot*, 17 September)

Although there still exist certain forms of media that are not equally accessible to unknown artists, Jeff Price emphasises that a number of new outlets such as social networking sites offer a cheap and accessible means of exposing works.

"There is now equal access to music discovery outlets – YouTube, blogs, Slacker, Pandora, Spotify, digital music stores' discovery features, Twitter, Facebook and other social networking applications are open to everyone, not just the elite few artists signed to labels. The only media outlet not open to everyone is commercial radio, but with that going the way of the 8-Track over the next few years, the last stranglehold of the traditional music industry will be gone."

(Jeff Price (2012) "How Technology Destroyed The Traditional Music Industry" *Hypebot*, 17 September)

-Transparency

Traditionally, the high risk and the uncertainty in the success of a recording have produced an imbalance in the relationship between record labels and artists. Burkart (2010) summarised:

“To make many small financial commitments to artists and bands as a way to search for the big hits, which will be more heavily financed, and tightly controlled by contract. The economies of scope and scale required to sustain this business model required bureaucratic hierarchies with gatekeepers at every level. Therefore, new artists’ access to channels for financing, music production, distribution, and marketing is highly restricted” (Burkart 2010, 22).

This power imbalance, skewed toward the labels and often caused by the complicated nature of contractual terms, has largely been the root of the conflict between artists and labels. Transparent and straightforward accounting, therefore, is especially appealing to artists. In his book “How Music Works”, David Byrne, lead singer of the American band Talking Heads, says the great advantage of direct distribution is transparency in sales records.

“I prefer to get accounted to monthly by TuneCore (as opposed to quarterly by Redeye), and for a onetime flat fee of twenty-five dollars rather than paying 10 percent monthly fees. The big advantage for anyone supplying the digital service providers [download stores like Amazon and iTunes] direct or via Tunecore, is you get paid monthly. Over the last twelve months we’ve averaged over \$3,000 per month in income from iTunes sales on that record” (Byrne 2012, 241).

Significantly, for some artists, it proved to be lucrative.

“Within three weeks of the digital files being available online on our own websites, we sold enough to cover our recording costs, which added up to \$49,000, and included travel, the mixing engineer, graphic design, flights, and extra musicians. Based on my own experience, that seemed amazing to me. With

a standard record deal, it would normally have taken six months to a year to recoup those costs. And then there would have been other miscellaneous costs to recoup - the music video (there wasn't one), that open bar after the concert, the car service to the airport" (Byrne 2012, 242).

3) Artists' Management

Although it is a tremendous achievement for anyone to make their albums available online, being a professional musician entails a lot more than putting out albums. Artists' careers, let alone stardom, is intimately bound up with the creation of fandom. The concept of fandom emerged in the early 19th century, with remarkable virtuosi such as Paganini and Liszt whose ineffable charisma, on top of their talents, captivated audiences (Théberge 2006). Geographical obstacles, however, afforded fans only limited means to express their admiration (Galuszka 2015b). The Internet changed this. The unprecedented degree of access enabled both fans and artists to engage with each other in an ongoing and reciprocal way (Théberge 2006).

Companies such as TopSpin, ReverbNation and Music Glue provide tools for artists to harness the benefits that digital technology has brought. Founded in 2006 by Shamal Ranasinghe and Peter Gotcher, a co-creator of Pro Tools,²⁸ TopSpin provides tools for artists to manage their career and connect with fans directly without having to sign contracts with labels. Stephen O'Reilly, Marketing Manager at TopSpin, explains the background of TopSpin as a continuation of Pro Tools.

"Pro Tools was a company about how to create music. And then almost the next step was how do you distribute your music to your fans, and how do you grow your audience, and turn those audiences into customers for artists to make a living. That was the vision of the company."

(Stephen O'Reilly, Marketing Manager at TopSpin, Interview, 17 May 2013)

²⁸ Pro Tools is a digital audio workstation enabling people to record their music. By displacing the need to record albums at a professional studio, Pro Tools is regarded to have precipitated the digital revolution in music production.

- Fan Building

For emerging artists, these tools are used to create their fan base. Stephen O'Reilly emphasises the significance of creating a fan base in the early phase of an artist's career.

“When bands are starting out, they're not in the business of selling music, they're in the fan acquisition business trying to acquire fans, acquire people who'd be interested in your brand, and then be passionate about you. We always recommend that you have two thousands of email addresses before you worry about selling some music. Because when you got that audience, then you can turn on the top in the commerce.”

(Stephen O'Reilly, Marketing Manager at TopSpin, Interview, 17 May 2013)

- Fan Engagement

Ian Rogers, who was CEO for TopSpin until he moved to Beats Music in 2014, thinks the company's contribution is to cultivate an environment where all strata of artists can actively engage with their fans.

“I think another difference between the proverbial yesterday and today is that we're moving from a mass market to mass niches, so you have to know what the first niche is that you're targeting and then go after it. You don't put the music out there and see who adopts you; you have to know when and how and where you fit.”

(Bobby Owsinski (2011) *Music 3.0: A Survival Guide for Making Music in the Internet Age*. Second edition. Music pro Guides. Milwaukee, Wis: Hal Leonard Books. p. 243)

This is possible because digital technology has made it possible to glean more accurate data on almost every aspect of an artist's career; managing their career requires a

different set of skills. The tools artists can use include collecting fans' email addresses, building their websites, selling merchandise products and ticketing their gigs or concerts.

- Autonomy

Music Glue, a D2F platform provider headquartered in London, proved to be a crucial platform for career development for artists such as Mumford and Sons, Enter Shikari and Ben Howard. Joe Porn, Squadron Leader at Music Glue, observed the great potential this platform could bring.

“The ability to sell directly to the customers has the potential to change everything because you are generating direct income yourself. You are setting your own prices. You are, hopefully, creating an ecosystem and the environment. Your customer comes to you and purchases from you – they like your music or your brand as you are. So, depending on doing certain things, you could seek great success. You make yourself heard in various ways and good life, one is writing good music, or building a fan base. There are lots of things you can do.

It's maybe not as romantic as signing to a record label and flying around the world and doing all that stuff. It's quite most bands' life. Actually, if you love playing, you love listening to music, if you can make a living from it, fantastic. I like doing what I'm doing and I make a living from it.”

(Joe Porn, Squadron Leader at Music Glue, Interview, 18 May 2013)

In summary, the D2F platform is gaining increasing attention in academia. The revolutionary potential of this platform prompted some scholars to produce an optimistic vision of the future. Others claim that it is overstated, calling it “fan exploitation” and stating that “fanancing” is leading to a new business model for the financing of artistic projects free from studio or network intervention (Scott 2014). There also is a growing awareness that the impact of this platform remains only in cultivating subculture, and that it has not been adopted by the mainstream (Galuszka

2012; Rogers 2013; Reia 2014). In the next section, this research will discuss the underlining dynamics lurking in the digital music industry that pose challenges to this potential being realised in the market.

5.3.2 Attention Economy

1) The Promise of Celestial Jukebox and the Reality

For a long time, music consumers' choice of music depended largely on the availability in the market. Napster undermined this system. As far as legitimate music consumption is concerned, however, the recording industry has held its grip for a period of time. iTunes provided a wide variety of music at a reasonably lowered price. However, it was still a world where legitimate sale of choice was limited. Until recently, the number of catalogues on digital music services was crucial to attracting more customers. Attaining catalogues from labels, especially major labels, was a major challenge for many digital music service providers, and it was not uncommon to see companies close their businesses due to lack of catalogues. Kieron Faller, General Manager at Consolidated Independence ("CI"), an independent music distributor, recalls this time:

"There was a period I think, until a few years ago, where people like iTunes and Spotify and Deezer, particularly, if these services were launching, they would say –we've got 50 million tracks. We've got 20 million tracks. We've got 25 million tracks. Whatever. And it was kind of – the bigger the number, the better at that point."

(Kieron Faller, General Manager at CI, Interview, 30 August 2013)

Whilst some other services, such as YouTube or Grooveshark, could be credited for presenting an immense number of catalogues, the debates on the legality of these services fell short of achieving ubiquitous listening. Then Spotify, with its close-to-unlimited access, changed the playing field entirely. The subscription-and-advertising model that afforded users unlimited access achieved remarkable success and enabled

almost everything to be available online with less friction of legality. This legal and unlimited access to music acclaimed Spotify as “exactly what music fans had been waiting for, fulfilling the long-sought dream of a ‘Celestial Jukebox’ – a service that makes every song always available, freely and legally” (Pollack 2011).²⁹

-Tyranny of Choice

While the celestial jukebox is generally regarded as a boon to world culture, it posed a new challenge: abundance of choice. Defining it as “Tyranny of Choice”, music industry analyst Mark Mulligan states, “30 million tracks (and counting) is a meaningless quantity of music. It would take three lifetimes to listen to every track once. There is so much choice that there is effectively no choice at all” (Mulligan 2014). The abundance of choice has not only become meaningless, it has also created confusion. Kieron Faller says:

“People haven’t worked out the usability problems. If you are on Spotify and you surf for Frank Sinatra, that’s 500 albums. No one actually wants to see that list of 500 albums.”

(Kieron Faller, General Manager at CI, Interview, 30 August 2013)

Kieron Faller thinks the frustration of pre-Spotify consumers with the difficulty of access to music has now been replaced by the annoyance of finding the right track.

“I think that’s one of the key challenges for streaming services particularly. And they are starting to address, but how do you clean out that annoyance? It’s just confusing, and the same with sound-alike stuff, for example, like karaoke. And you just want one good version of each track on the platform. But in terms of rights, it’s actually quite difficult and complicated to decide. Why should you prefer one record label’s “Best of ...” to another? How do you make that choice? Are you allowed to make that choice?”

²⁹ For more discussion on ‘Celestial Jukebox’, see p.98-99.

(Kieron Faller, General Manager at CI, Interview, 30 August 2013)

In the wake of this challenge, Spotify embarked on new tasks to purge incorrect or infringing contents. Rachael McSwiggan, the Team Lead of Content Operations at Spotify London, is in charge of this task. She explains Spotify had to come up with a guideline and ensure labels followed it to ensure a better user experience.

“The more labels we take on, the more territories we launch, the more important Spotify becomes, we realised we have to have one. We could create the best user experience possible. Artists’ names are spelled correctly so someone searches it, then they can find it.”

(Rachael McSwiggan, Team Lead of Content Operations at Spotify, Interview, 3 October 2013)

2) The Long Tail and the Attention Economy

The significance of the argument of Celestial Jukebox should be viewed in the context of the Long Tail economy. Popularised by Chris Anderson (2006), Wired Magazine editor, the Long Tail theory was perceived to bring a shift in the cultural economy. The lowered cost of production and distribution in cultural products would remove the constraints of physical shelf space and distribution and therefore bring a shift “away from a focus on a relatively small number of ‘hits’ (mainstream products and markets) at the head of the demand curve and toward a huge number of niches in the tail” (Anderson 2006). In other words, through the lowered barrier of entry, products catering for minority tastes become available and consumers are given more diverse choices. The collective sum of consumption of these diversified niche products would make up enough market share to surpass mainstream music consumption. This unprecedented opportunity of individual expression would pose a threat to the conventional business model, Anderson (2006) suggests, and would be ultimately conducive to cultivating creativity and cultural diversity. Many interviewees agreed that some of these opportunities had materialised. Rich Bengloff, President at A2IM, agrees that the traditional barrier to entry has been eliminated.

“Traditionally the only way to monetise was to get into the physical retail and that’s how it worked. You had to buy a corporate advertisement into retail. Whether it’s promotion or monetisation, we had no access. Things moved forward and the good news is now everybody has an access, especially direct access to fans which we never had before.”

(Rich Bengloff, President at A2IM, Interview, 27 March 2013)

However, the current status quo is not as romantic as predicted. Indeed, it came with unexpected challenges. Rich Bengloff continues:

“The bad news is everybody has access, so how do you get noticed?”

(Rich Bengloff, President at A2IM, Interview, 27 March 2013)

Contrary to the belief that aggregate demand for marginal taste would constitute an attractive economy to compete with hit-driven business, the majority of less well-known artists still suffer from obscurity. Although the barrier to making an album available on the shelf has been removed, a new barrier has surfaced for artists. Dominic Jones, Marketing Director at INgrooves, stresses that the barrier to entry approximates to the barrier to getting on people’s radar in the digital era.

“I suppose it’s going back to the physical world because we have CDs and vinyl. The biggest hurdle to overcome is getting record shops to want to stock it in the first place. Because you actually have to sell them physical things and you have to ship them from one warehouse to their warehouse and to their shop and convince them that people are looking through the door are going to buy it. In the digital world I think it is very different because you are shipping them a master file, everything you have and with a few exceptions, most of the large retailers will take everything that you want to deliver to them.

The hurdle with digital is getting the most profile for it and making sure it is in the homepage or a genre page or on a newsletter. If you look at iTunes, you have got that much space. But then they have little scroll-y things. Well...you could scroll forever if you wanted to or if they wanted to scroll everything, but having one of those banners on iTunes gives you all the advantages other people haven't got."

(Dominic Jones, Marketing Director at INgrooves, Interview, 05 August 2013)

The quintessence of the issue is how to grab audiences' attention. In contrast to what is commonly believed, the digital music sphere does have competition for a limited space. The difference is that the limitation that was closely related to physical space in the conventional setting is replaced by the limitation of virtual space - attention. This is what economist Herbert Simon (1971) predicted at the dawn of the electronic age.³⁰

"When we speak of an information-rich world, we may expect, analogically, that the wealth of information means a dearth of something else – a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention, and a need to allocate that attention efficiently among the overabundance of information sources that might consume it" (Simon 1971, 40–1).

Scott Cohen, co-founder of The Orchard, explains why the contemporary music business model based on subscription/streaming belongs to this category.

"If you look at services like Spotify, they're not in the streaming business, a delivery mechanism, they're not in the ad business or subscribing business, they're in the attention business. It's really about how much time we spent on a given artist inside the service! And if you can get somebody to spend five minutes a week, an hour a week on your stuff, the implicit message is that they

³⁰ Benkler (2006) termed this 'The Babel objection' to describe the conventional editorial power that can continue to exist to control the visibility of digital contents.

can't spend their time on somebody else's. You can't listen to two songs simultaneously. In the attention economy, the game is can we get people to pay attention to your stuff, instead of somebody else's."

(Scott Cohen, co-founder of The Orchard, Interview, 07 August 2013)

In the digital music industry's case, the plenitude is the catalogues and the scarcity is people's attention. In the midst of the geometric increase of music catalogues, the way people's attention is allocated is a matter of cultural creativity and diversity. The next section expands this view and examines how this digital convergence is bringing changing dynamics to the entire network of the digital recording business.

5.4 Changing Value Networks

Digitisation has been argued to have provided an opportunity to disintermediate the value chain. By allowing artists to bypass intermediaries and reach out to their fans directly, disintermediation could render intermediaries unnecessary or obsolete. This shortened value chain was expected to repair the long-sustained problems in the music industry, including: (1) the power imbalance skewed toward major labels, which caused improper compensation for artists, and (2) the majors' control over the distribution system, which resulted in a lack of cultural diversity and inflated price of consumer products. As many have observed, digitised distribution did not necessarily lead to a diminished chain or function of conventional intermediaries. Rather, the recording industry is experiencing "the changing patterns of intermediation" (Kretschmer, Klimis and Wallis 2001), or what Leyshon (2001) described as "reintermediation". Not only is the contemporary music industry replete with "fundamental strands of continuity" (Rogers 2014, 34), it is also witnessing new patterns enabled by digital technology. This section critically analyses the gap between the technological expectation and the materialised technology, and provides a comprehensive understanding of the changes in the value chain and networks of the music industry.

5.4.1 Changing Value Networks

Value chain analysis postulates the value-creating logic in an industry. Porter's (1980) value chain framework signalled the commencement of understanding how firms achieve competitive advantage by differentiating their product or service in value-adding processes. To understand the contingent nature of industrial development, Stabell and Fjeldstad (1998) developed a value network analysis. It is widely used to capture the complex constellations of value creation networking context. Many studies have drawn attention to apprehending the value chain and value networks in the music industry. Leyshon's (2001) value networks, above all, provide a useful framework for understanding how the four major networks in the music industry were configured in the pre-digital era and the first infancy of the digital era. The allocation of the different functions of the industry in the four musical networks is particularly valuable in

depicting the complex relationship amongst heterogeneous forces and the blurred interaction among the four networks. Drawing upon this framework, this research demonstrates how these networks are undergoing changes in the digital era.

- D2F Networks

The most pronounced changes can be found in D2F networks, which were extremely limited before digital tools became available. The diverse platforms enabled by D2F technologies greatly improved artists' autonomy by affording the capacity to create, promote and distribute music on their own. This alternative means of digital tools are undergoing experimentation in all four networks, enabling a direct relationship between artists and fans throughout the entire process of music production, distribution, promotion and consumption. Some artists choose to brave the vicissitude of DIY throughout the whole process, but D2F tools are not exclusively used by DIY artists. Some labels harness these tools for artists who are signed to them.

1) Networks of Creativity

Networks of creativity are composed of players involved in music composition, production and recording. Traditionally, recording companies played a vital role in providing artists with access to specialised labour and facilities. In exchange for a contract, labels offered the wherewithal to work with professional record producers, sound engineers and session musicians, and to use the recording studios for both rehearsals and actual recordings. Signing contracts was essential for labels to ensure they would recoup their investment in highly risky projects, of which less than 10% would actually make a profit.

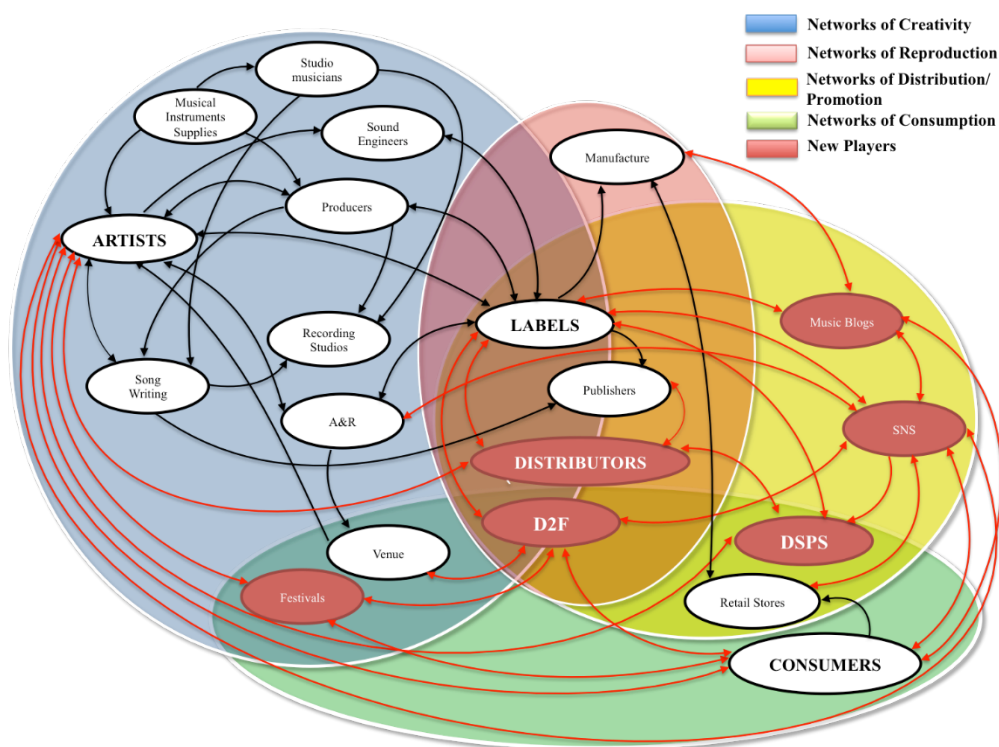
The most distinct change in networks of creativity has been the possibility for aspiring artists to record music in their bedroom. This lowered barrier to entry, including cheaper and more powerful tools for music production and dissemination, has generated a wide range of options for artists to choose their career, leading to the emergence of what some have called a breed of "new amateurs" (Prior 2010). What this perhaps signifies is a need to distinguish the different motivations, goals and

commitments of a diverse array of artists or new amateurs. This is manifested in the continued importance of the previous gatekeepers. For example, access to professional help with music production is not a prerequisite for some artists, who have the capacity to produce their music on their own. Highly skilled engineers and highly qualified studios, however, can still make a difference in quality (Spilker 2012). Alison Wenham thinks the new changes in the digital era have fostered creativity in the recording industry, but that the abolished entry barrier has made quality control even more important than before.

“This is a golden period for creativity. Because you have so many choices on how you want to run the business side. The creative side is the creative side, that is sort of K in the equation, that won’t change. That is something that’s been coming and it is been evolving for centuries and it will continue.”

(Alison Wenham, Chairman and CEO at AIM, Interview, 30 July 2013)

Figure 12. Digital Music Value Networks



While new technologies enable artists to bypass this process, its impact still remains in the margin of subculture (Galuszka 2012; Rogers 2013; Reia 2014). As Kretschmer, Klimis and Wallis (2001) rightly pointed out, “This strategy could be followed only by artists with well-established fan bases and sufficient capital to be able to mount marketing campaigns to draw audiences to their websites.” Especially in the attention economy, most artists struggle to attract enough fans. Matthias Böttcher, Director of Sales and Repertoire Development at Rough Trade in Germany, says:

“As an unsigned artist, you can place your music on iTunes, for example. But in almost all cases, you’ll get no visibility, and no promotion. That is what legitimates still the existence of the labels. Impact of owning rights proved to be minimal.”

(Matthias Böttcher, Director of Sales and Repertoire Development at Rough Trade in Germany, Interview, 09 April 2014)

2) Networks of Reproduction

Networks of reproduction used to be a highly capital-intensive area of the music business through which large-scale production and logistics purported the brick-and-mortar infrastructure. As the demand for physical products has significantly reduced, these networks have undergone a tremendous reconfiguration. Most major labels closed down their own reproduction units. Sony DADC used to handle reproduction for UMG, Sony, and EMI until February 2012, when Anderson Merchandisers acquired US distribution rights for CD from Sony DADC. This means that 82% of global CD distribution is handled by one company. Only Warner’s reproduction is handled by Cinram (PR Newswire 2010)

Many independent labels’ reproduction units have also been closed down or downsized. Wikström (2013) suggests that the record industry has seen a 25% reduction in its workforce since 2000. Besides laying off employees, labels strove to generate revenue from other sectors. Victor Zara, CFO at Razor and Tie, an independent label in

Brooklyn, shares his experience of overcoming the difficulties brought about by declining sales.

“One of the things was diversification of revenue, and diversification of musical genre. That way, if we’re in publishing, merchandise and recording music, licensing, we’re able to have different revenue streams coming from all different sources. That’s one thing we’ve been doing.

Second thing we’ve been doing is, revenue has been challenged in all of these areas, so when you can sell Celo Disc for \$18 for consumer and \$12 for wholesale, physical wholesales were down and streams pay down to a penny. I think the way you have to deal with that is by way of managing cost strongly. So by all means you have to keep your overhead reasonable. Really watching marketing spends, being careful with the type of events you pay. Of course, the challenge of that is there’s still competition to you to work with the best talent, and so ultimately may or may not work out. The competition for the best people, competition for the best talent, I think, that creates a dilemma.”

(Victor Zaraya, CEO and CFO at Razor and Tie, Interview, 28 March 2013)

One interesting change is the rise of vinyl consumption, which gave rise to the growth of vinyl reproduction. This is striking, especially considering the continued decline of CD sales. Vinyl sales reached £20 million in 2014, a notable leap from £3 million five years previously, and the highest sales since 1996 (Beaumont-Thomas 2014). More details will be discussed in the section on the networks of consumption.

3) Networks of Distribution / Promotion

(1) Networks of Distribution

As discussed in Section 3.1, major labels built direct distribution systems with digital music service providers, while independent digital music distributors emerged to help

independent labels' digital music transactions. As the digital music business grew, a considerable restructuring took place in the networks of distribution.

- Major Labels' Struggles

Through a vertically integrated system, majors have long kept a tight grip on the distribution of music products in the market. Faced with digital disruption, major labels were "terrified" by the idea of losing this control³¹. To maintain it, they took all measures believed necessary. The efforts to maintain their tight hold on the legal and regulatory frameworks are well-known. What is less well-known is the way their grip was loosened on technological frameworks.

The direct distribution system that major labels built with iTunes lasted for a period of time. However, when the amount of digital music transactions increased, major labels realised that their outmoded system was failing to address their needs efficiently. Sony and Warner had to outsource their distribution to Sony DADC. The problem was especially acute with Universal, the largest label in the world. Universal's outsourced system from Oracle was imposing a tremendous burden; as a result, they conducted market research and decided to use INgrooves' distribution system.

- Windows of Opportunity for Independent Music Distributors

This struggle lends itself particularly well to the argument over how the independent sector's nimble approach could champion the major labels' monolithic fashion in the digital context. The partnership underpins the often-overlooked side of digital music business history – the majors' struggle to maintain their supply chains, which served as a crucial means of control in distribution. On the flip side, the struggle that majors faced has opened up opportunities for independent players. As far as technical possibilities are concerned, this is a first in the history of the modern music business; the industry is now seeing a level playing field where independent labels use the same distribution platform as the major labels. Soon, this asymmetric partnership between major labels and independent players led to a restructuring of the industry.

³¹ See 5.2.2 section 1) for more information.

(2) Networks of Promotion

Prior to the arrival of digital technology, networks of promotion were structured to overcome the substantial costs and risk of the bets the recording industry hedged on a few big hits. The recording industry was composed of a network of complex organisations in which discovery and filtering was processed at each level of network (Hirsch 1972). In this system, consumers' access to cultural products was subject to the selections filtered through negotiations of conflicting interests and unbalanced power relations. The decentralised network enabled by digital technology diversified the avenues where people could discover music. This section looks at recent changes in the networks of promotion.

- Diversified Promotion Channels

So-called Web 2.0 technologies took digital music promotion to another level. MySpace arose as the first legitimate digital music promotion avenue where artists voluntarily uploaded their music for free; musicians such as Lily Allen and the Arctic Monkeys successfully used this platform to create buzz on their pages. YouTube facilitated user participation to contribute to improved exposure of diverse music. In conjunction with the growth of streaming services, music promotion outlets have grown. Berlin-based music sharing platform SoundCloud has become an increasingly important music promotion outlet. Shazam, a British music service, helps people discover music on the go. Using so-called fingerprint technology, Shazam matches the identified song to a database and enables users to find the searched-for music on their favourite digital music services. Shazam has proven to be a hit predictor of the music that people listen to.

As Wikström (2013) states, "The connectivity of the network is radically improved. The barriers that previously stopped everyone, except for a few resource-rich players, from distributing information to members of the network have almost completely disappeared" (Wikström 2013, 92). Significantly, this increased connectivity has blurred the distinction between distribution and promotion and the weak link between exposure

and sales (Wikström 2013). Faced with the potential problem of an increased marketing budget with uncertain sales return, record labels are striving to maximise audience reach.

- Music Discovery

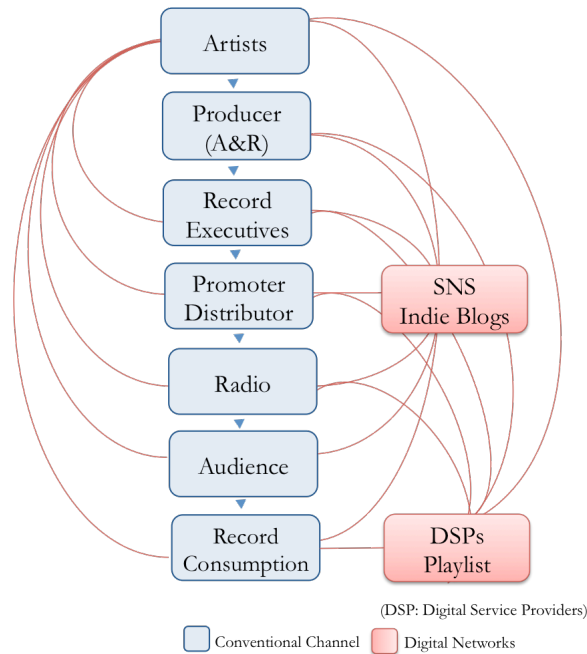
As an increasing number of consumers began to enjoy unprecedented access to music, the presumption proved to have missed a crucial aspect of music consumption. While people's music taste is complicated and immensely diverse, the majority of people who listen to music need guidance on the music to which they should be listening. In his book "The death and life of the music industry in the digital age", Rogers (2013) confirms that the majority of music consumers tend to be uncritical and occasional purchasers of popular hits.

"This consumer band is largely uncritical and by virtue of the fact that the people within it only purchase music on very rare occasions, it is the easiest market for record executives to satisfy. While it is not essential to sell to this mass market in order to achieve commercial success, it is this segment of the consumer base that generates the biggest hits, essential to sustaining the major labels" (Rogers 2013, 174).

While the digital music discovery is still nascent and has just begun to envisage music consumers' needs, the importance of publicity as a trusted source of information still remains paramount in the digital era. There is a strong convergence of old and new media in this sphere, where the importance of publicity as a trusted source of information still remains paramount and new promotion channels that emerged in the digital era are becoming an important source of music discovery. Figure 13 illustrates this change. The linear process of music discovery from artist to record companies was modified from the organisation structure of popular music drawn up by Hirsch (1969). This process emphasises that "each object must be 'discovered', sponsored, and brought to public attention by entrepreneurial organisations or nonprofit agencies before the originating artist or writer can be linked successfully to the intended audience" (Hirsch 1972, 640). While this structure continues to exist, new discover channels such as social

network sites (“SNS”), independent music blogs, and streaming playlist on digital music streaming services are creating new digital music discovery dynamics.

Figure 13. Digital Music Discovery Networks



According to Nielsen Music 360 Report 2015, radio remains the number one destination for people’s music discovery, followed by friends/relatives and online/video sharing websites. Amongst the diverse avenues through which digital music users discover music, this study looks at three major sources: radio, online music blogs and streaming music players.

-Radio

Before the advent of radio, the only way to discover music was to go to a performer’s concert at a music venue. As radio became a basic home appliance used in almost every household, it brought “a feeling of connectedness” through everyone listening to the same tune on the radio (Taylor, Katz, and Grajeda 2012). The popularity of radio soon became deeply interlinked to the recording business, for which radio airplay played a central role in disseminating new records (Hirsch 1969; Peterson 1990). The significance of this role is manifested in the recording business practice called “payola”, through

which recording companies bribe DJs on commercial radio station to guarantee radio play of their records.

Despite the increasing importance of new platforms for music discovery, and the increased connectivity and diversified outlets for music listening, airplay on commercial radio still remains essential for music discovery. Sam Potts, Head of Radio at Columbia Records, thinks that radio is important for two main reasons: (1) the ripple effect through which radio influences other media, and (2) the wide variety of listeners.

“Radios are still the number one sort of discovery mechanism for new music and have been for some time and I think more than ever. At the moment, stations like Radio 1, for example in the UK, are really, really important because it has a ripple effect throughout the rest of the industry and that could help with life, it can help with TV, it can help with press, it can help with all sorts of other areas of the business. So, it’s really important. Also, the reach of radio is huge. Radio listening actually went up in the last couple of years. We reached the vast majority of the UK population through radio. So, it’s a really, really important part of the overall.”

(Sam Potts, Head of Radio at Columbia Records, Interview, 13 September 2013)

The majority of consumers want to have it dictated to them to what music they should listen, and unlimited access to music has not changed that trait. Even the most engaged music aficionados need this direction. Sam Potts continues,

“Sometimes you don’t know whether you like that music until you are told maybe why you should like it, and having someone explain to you why something is important or why they think it’s good or has a certain degree of passion or some sort of selling mechanism could make a difference between someone liking the song or not liking it really, or of seeing it or hearing it in a very different way. I think, as long as radio is the best in doing that, it will be the best style.”

(Sam Potts, Head of Radio at Columbia Records, Interview, 13 September 2013)

Emphasising the crucial role that radio plays in the success of the record business, Hirsch (1969) described radio airplay as the “lifeline” of a record company. Although radio is not the only channel through which people discover music, the significance still continues. It means that songs with more airplay add great weight to their popularity. In conventional recording business settings, radio airplay followed a Top 40 pre-selection filtering structure. But have the diversified channels of music discovery affected which songs receive airplay? New media such as Spotify Play or the Shazam Chart is now taken into account to determine airplay (interview with Sam Potts). What this suggests is a way to redirect the plugger’s attention. However, the plugger’s role still remains crucial. Sam Potts says:

“The plugger’s reputation is obviously important too because if you come in with a record and you say, I think this is really good, this is going to be really big. If you are someone that they’ve trusted in the past and someone who has been right in the past... that’s really the integrity and you need to be able to formulate arguments in a way that is true to your eyes but also works and convinces and persuades the gatekeepers of the radio to play it.”

(Sam Potts, Head of Radio at Columbia Records, Interview, 13 September 2013)

- Emergence of Music Blogs

One particular change is an emergence of new media in the publicity sphere that reflects the voices of music enthusiasts and consumers. These tools include indie music blogs such as Pitchfork, Brooklyn Vegan and Stereogum (in the US) and Drowned in Sound and Line of the Best Fit (in the UK). By leveraging the abundance of content enabled in the digital age, these independent music blogs have emerged to provide a rich archive of music commentaries. Although most of them were prompted by Napster’s sudden oversupply of music, their significance has become heightened in the streaming age. Rich Bengloff, President of A2IM, thinks these diversified media outlets are especially helpful for promoting independent music.

“For publicity things were goods, now they are much better because of Brooklyn Vegan, Dali and Pitchfork, and all the online. There’s hundreds of online blogs. Before you only need to get only one selection, especially with mobile fourth generation phones out there, and the search engines are much better.”

(Rich Bengloff, President at A2IM, Interview, 27 March 2013)

Pitchfork is currently the most influential arbiter out of all the indie rock music critic websites. The site began in 1995, when Ryan Schreiber, a nineteen-year-old high school graduate, began posting reviews of indie music and interviews with bands he persuaded to contribute on a website. Music was the only thing that captivated Schreiber, whose parents were busy with their work. He worked as a night-shift telemarketer in the evenings so as to manage Pitchfork during the day. As Napster and its progeny enabled an untrammelled garden of music abundance, the website began to grow, and Schreiber moved to an office in Chicago and started to offer freelance reviews and sell advertising space. Its significant role lies in discovering new acts. Clap Your Hands Say Yeah, a Brooklyn unsigned band, was an example of a Pitchfork-picked breakout artist. Pitchfork is one of the chief music reference points for independent music lovers, with 2.5 million monthly unique visitors and 400,000 daily visits (Lindvall 2010). The role of tastemakers in the digital age remains crucial (Rogers 2013). Many interviewees acknowledged that their importance is ever heightened by the increasing growth of streaming business, especially because of the abundance of content.

“Pitchfork media, it's just a great website/blog that if they give you an amazing review - probably the most important medium for indie rock. The question is can [you] get them to even listen? Yes. Can you get them the answers? No. There’s too much shit out there.”

(Scott Cohen, co-founder of The Orchard, Interview, 7 August 2013)

The Line of Best Fit is an independent music blog in the UK. Paul Bridgewater, an editor at The Line of Best Fit, thinks the role of independent music blogs is equivalent to the test bed of new talents, which is the traditional role of A&R. In this way, independent music blogs are an essential part of the entire system of promotion. Paul Bridgewater says:

“Outside we’re known as a natural vehicle for publicising content and bands. We have to try and test a formula for three or four bands for the last few years that have gone through really good things. So it was low risk for them. It is like we are almost like partners in the process of the artist development. In other words, indie blogging is becoming an essential part of the promotion system. It’s like a whole kind of network, an organic network that has been developing outside of the rim of labels. Where blogs and sites feed into these things and labels kind of see what rises at the top.”

(Paul Bridgewater, Editor at The Line of Best Fit, Interview, 17 May 2013)

However, as the significance of blogs has increased, concerns have been raised as to the authenticity of finding real gems. Carter and Rogers (2014), for example, argue that broadened editorial coverage and the insurmountable power it can have has obscured its appeal for finding up-and-coming aspirants, which is chiefly achieved through defiance of the mainstream.

- Streaming Playlists³²

With streaming services’ pervasive adoption by the market, they are playing an increasingly influential role in promotion. For example, as Spotify has morphed from a streaming service to a mainstreaming one, their choice of front page features and selections for Spotify-curated Browse playlists serve to create momentum for songs’ popularity. Meghan Trainor’s 2015 song “All About That Bass” garnered a critical momentum for popularity when it was added to a Spotify-curated playlist (Page and

³² More details on the development and the implications of streaming playlist are discussed in Chapter 6.3.

Ning 2015). How do curators choose which songs to add to the Browse list? Major labels no doubt negotiate with the retailers directly. For independent music, independent digital music distributors, such as INgrooves, choose priority tracks each week and send them over to DSPs so they can be added to the list.

5) Networks of Consumption

CD sales have been in decline since Napster's appearance on the market. Most large retail stores have closed down. After many years of struggle, iTunes remained the number one digital store for some time. This began to change with the striking growth of streaming/subscription-based services. Power has shifted from mega-size retail stores to digital music service providers, who have taken up the role of filtering.

- Uptake of Streaming Service

In January 2015, Spotify reported 12.5 million paying users, 15 million subscribers and 60 million active users (Spotify Blog 2015). Despite streaming services' increasing contribution to music sales revenue, the music industry reported a decline of 2.9% in 2014 from the previous year. Mulligan (2015) probes the fragmentation of music consumers in the digital music era and demonstrates the shifting patterns in music consumption: music aficionados, who make up 17% of music consumers, used to constitute 61% of music spending.³³ The lowered barrier to music consumption has turned some of the majority of passive listeners into paying customers. It has, however, also reduced the massive amount that music aficionados used to spend. On the other hand, this data is based on record sales, and thus does not include live music. The ripple effect of the increased adoption of paying consumers has not yet been explored.

- Increase of Vinyl Consumption

³³ For music user fragmentation, read <http://www.midiaresearch.com/blog/view/music-consumer-segmentation-from-lagging-indicators-to-leading-indicators.html>.

Amidst streaming services' increasing growth, the music industry is witnessing the comeback of vinyl, a medium presumed long dead. Tyler McWilliams is a Sales and Marketing Director for FatBeats, a hip-hop vinyl distribution company, and has seen the ebb and flow of vinyl. He thinks the revival of vinyl's popularity is a response to a missed experience in a digital era where music has become disposable.

"I can certainly agree from personal experience that the plants are getting really overloaded. Even now with our office across the street from a pressing plant, our wait times are longer than ever. It's great the demand for vinyl is increasing.

Once upon a time, listening to music was more like watching a film. You put on the record, you took special care to take this item out of your sleeve, take care not to put your finger prints on it, you put it on the platter, to pick up the needle, you put it down. And you adjust your stereo system to make sure the volume levels are right. You sit down, and listen to your album beginning to end. So it was more of a commitment to the music.

In the age of digital downloads and streaming, there is an experience that is lost in the process. Music is disposable, and consumed in small little bites. You listen to a song, switch the song before it's even over, skipping around. So, music listening is no longer such an immersive experience."

(Tyler McWilliams, Sales and Marketing Director at FatBeats, 29 January 2013)

Cassette tape is another physical music medium that is on the rise (Smith 2013), with CD being the only physical music product that continues to decline. Tyler McWilliams explains that this is due to the product characteristics of CD, which is partly digital and therefore lacks the unique experience carried by physical media.

"Vinyl is a manifestation of audio files on a physical disc. It has a different sound that is not replaceable by digital file. It's a needle dragging on a groove that manifests sounds. Therefore, the physical aspects of it cannot be replaced by digital file, whereas the audio on a CD can be replaced."

(Tyler McWilliams, Sales and Marketing Director at FatBeats, 29 January 2013)

Despite the surprising growth rate, vinyl, once a populist medium, perhaps would not be considered so today. So far, vinyl consumption has remained in the hands of niche consumers who have distinct tastes in music or value certain qualities in music listening experience. Tyler McWilliams says:

“It’s now a collector’s medium. It is what I would call a more upper-class kind of product, almost a bourgeoisie product, a niche product, because there are cheaper alternatives. Digital downloads are much less expensive than vinyl. CDs are much less expensive than vinyl. And you can still buy CDs. So today’s vinyl consumers are choosing to spend more consciously, because they want higher quality and a more attractive product. Like buying vintage wine vs. yellow tail, or eating at a restaurant vs. cooking your own food, or buying Versace vs. Old Navy. It’s a choice for quality. So the average vinyl consumer now is someone who has almost fine taste.”

(Tyler McWilliams, Sales and Marketing Director at FatBeats, 29 January 2013)

- Increase in Festivals

The developments in music technologies have long been associated with the eclipse of live music. Primarily, the growth of live music owes to decreased revenue from recorded music. Live music is increasingly perceived as a “a means of survival” (Larkin 2006), and artists have been advised to perform more live concerts to generate revenue. Krueger (2005) calls this the Bowie Theory, coined for British singer-songwriter David Bowie’s caveat to musicians that “[m]usic itself is going to become like running water or electricity...You’d better be prepared for doing a lot of touring because that’s really the only unique situation that’s going to be left.” Its importance is reflected in the soaring price of concerts and festivals (Krueger 2005) and concentration by a few firms such as Live Nation (Holt 2010).

Frith (2007) makes a major contribution to the idea of the renewed interest in live music as being more than just a means of survival. He reverses the prevailing idea that “[c]inema organists were made redundant by talking pictures; pit orchestras were replaced by pre-recorded tapes, pub singers by jukeboxes, dance halls with dance bands by discos with DJs” (Frith 2007, 2). He argues that live music “has expanded the boundaries via technologies of amplification and festival events with large audiences.” As Toynbee (2006) described, 'phonographic orality', or recorded sound, has always defined the way the majority of music listeners associate with popular songs. Live music has served as an important economic driver for artists (Holt 2010), and musicians' associated products such as merchandising and recordings have thus increased musicians' revenues. Record companies have adopted a new strategy, called 360 deals, to generate revenue from live music (Marshall 2013). Over time, stadium filling superstars have tended towards individual concerts. Festivals remain geared to less known artists who cannot afford the heavy cost involved in touring, in addition to a few known artists who can guarantee good ticket sales. Some niche or boutique festivals are expanding their horizons to attract diverse audiences. Latitude Festival in Suffolk, UK, for example, has introduced yoga, volleyball and jogging sessions. It is worth noting that people are willing to pay extensive amounts to participate in festivals. Will Page, Director of Economics at Spotify, is both amazed and frustrated by this.

"The Reading festival, which is targeted to students, is charging £240 per ticket for two day[s] entertainment in a field at Reading. And [what] I am trying to charge on Spotify is £120 a year for every song on the planet. Can you explain to me how that happened? £240 for two days at Reading!"

(Will Page, Director of Economics at Spotify, Interview, 06 March 2013)

For music aficionados who are keen to know where their favourite artists will perform, new services such as Songkick, Concertsin and Bandsintown keep them posted about future events happening near their location. "Technology helps the live industry by increasing audience development, diversifying the means of engagement with participating fans and building loyalty, but also by driving additional revenues through simplifying ticket, merch, and even music purchase processes" (Govor 2013, 65).

Streaming services are also becoming an important destination for festivals, and are actively used pre and post-festival by users to prepare for upcoming festivals they will attend and to reinforce their music experience after the festival (Kjus and Danielsen 2014).

5.5 Concluding Remarks

Through the evolution of digital music infrastructure, this chapter detailed a process of reintermediation, in which a new breed of intermediaries has emerged to solve unexpected problems that have arisen in large-scale digital music transactions. The chapter then advanced the way the convergence of novelties and continuity have produced new conditions in the digital recording industry. D2F tools have suggested new opportunities to allow artists to develop their career without conventional gatekeepers. However, the sheer abundance of content enabled by the removed entry barrier has given rise to the new digital music ecology of “attention economy”. Underpinning this change are digital music users who, in the face of unlimited access to music, want their choices dictated to them. In the expanded view of entire networks in the digital recording industry, we observed how this convergence is bringing changing dynamics to the four major networks of creativity, reproduction, distribution/promotion and consumption. The chapter finished by discussing three distinct changes arising in digital music distribution networks: (1) new demands from diverse players have brought about reintermediation, (2) new opportunities suggested by digital technology are changing relationships between artists and labels and (3) music users’ unchanged tendency to consume top-selling catalogues, in conjunction with the continued market power of the major labels, is bringing about a resurgence of market control.

CHAPTER 6. CASE STUDIES: INGROOVES AND SPOTIFY

6.1 Introduction

This chapter provides an in-depth analysis of two case studies, INgrooves and Spotify. The two cases address the innovation process in two different locales of the industry, with INgrooves focusin on a digital music distribution system and Spotify on digital music services. Section 6.2 reviews the case of INgrooves. This case study demonstrates the detailed process of the emergence of independent digital music distributors and their changing roles in relation to the diverse array of players in the market and in light of emerging circumstances in the digital music networks. The following section, 6.3 enquires how Spotify arose as a commercially viable business model. After describing the company's strategies to solve market entrenchment and its efforts to align the diverse and conflicting interests in the market, it moves on to the changes Spotify has made in the digital music recording industry, as well as the paradoxes it has created.

6.2 INgrooves

6.2.1 Evolution of the Business

1) *Beginning*

Robb McDaniels³⁴, an American by birth, was brought up in London during the early years of his childhood. At the age of sixteen, living in the US, he visited London to see one of his best friends, and was smitten by the music culture deeply ingrained in Londoners' life: everyone he met had a set of decks in their bedroom and was DJing almost as a daily habit. The most unforgettable of all was the Notting Hill Carnival. There, the DJs who played music on the rooftops were worshipped as rock stars (*This Week in Music - Interview with Robb McDaniels* 2012). It prompted him to become a professional DJ later, but he soon discovered that it was not particularly easy to enamour people to his music. Putting his passion for music aside, he deviated to the finance world, working as an insurer at Marsh & McLenna. Despite all his promotions, but he felt misplaced in the finance world (Greenburg 2012). McDaniels says:

“I would go into the bathroom before meetings and just be like, ‘What am I doing? This just doesn’t feel right.’”

(Zack O'Malley Greenburg (2012) “INGrooves: Proof You Can Make Money On Music, Even If You’re Not Apple.” *Forbes*, May 2. Available online at: <http://www.forbes.com/sites/zackomalleygreenburg/2012/04/20/ingrooves-proof-you-can-make-money-on-music-even-if-youre-not-apple/2/>. (sampled 15 February 2016))

He finally made up his mind to pursue his passion. Based on his previous experience of working for his two best friends, who ran a vinyl record shop on Newbury Street in Boston, as well as inspiration from Mob, an American singer-songwriter and a DJ who

³⁴ Robb McDaniels resigned CEO in December 2014 and remains on the company's board of directors. The position was replaced by Bob Roback, former Head of Music at Yahoo, in August 2015.

had licences for major commercials, he began drawing up a business plan in the attic of his house in 2001.

Unlike many other music companies, which evolved from physical businesses, INgrooves was a digital music company from the outset. It originated from Robb McDaniels' fascination with the unprecedented opportunity of digital music experience that Napster had presented.

“I’ve been a big fan of the original Napster. It was amazing that you could find all this music from all over the world and get it to your fingertips. It’s one of the reasons why I really wanted to bring the dance electronic music here in the United States and help commercialise it.”

(Robb McDaniels, founder of INgrooves, Interview, 29 August 2013)

The business took off in 2002, led by McDaniels and Matt Burns, with many dance labels as partners. During the early phase, the focus of the business was to license dance electronic music in Europe for TV commercials or video games in the US.

“We didn’t start initially with the downloading as a big component of our business model. The initial vision was to represent music, mostly dance electronic music from UK and Europe, and represent it for licensing for TV commercials and video games here in the United States.”

(Robb McDaniels, founder of INgrooves, Interview, 29 August 2013)

They began acquiring rights as “synchronisation” for popular catalogues and helped rights owners to exploit their contents.

2) iTunes and the Emergence of Digital Music Aggregators

The infancy of the digital music business, following Napster’s shutdown, witnessed the consequence of the briefly attempted digital revolution, a huge chasm between

consumers' expectation and what the industry could offer. It also saw an influx of new trials, as well as errors. Often depicted as delayed innovation, two contested arguments dominate the discussion of this phase: one is the argument raised by the recording industry that piracy kills the industry, and the other is the criticism levelled at the industry that its resistance to the change delayed the innovation. The dichotomy of the discussion, however, comes at the risk of overlooking an important factor - the lack of accompanying infrastructure. Neither Internet access infrastructure nor legitimate digital music transaction was ready for digital music business, let alone people's perception of this novelty³⁵.

By the time iTunes became popular, things were rapidly changing. Dial-up Internet access had been replaced by high speed broadband. iTunes had facilitated the uptake of mobile digital music listening devices. As an increasingly popular avenue, it also allowed lines of businesses to set up digital music transactions. Before the business officially launched, iTunes had already built direct lines of business with major labels. It was almost impossible for the service to handle the thousands of independent labels in the market. Neither could iTunes just have ignored indie labels; they needed to cater for digital music users who had already been exposed to the unlimited access to music enabled by Napster. A new breed of intermediaries was born to fill the gap between digital music service providers and independent labels. It marked the beginning of the reintermediation of the digital music business, and a turning point for INgrooves. Robb McDaniels was excited by this unexpected opportunity. All the information on the catalogues INgrooves held for other types of digital transaction became an essential asset in extending the service to digital music downloads.

“When iTunes launched, a lot of these clients asked, ‘Hey, can you help us get our content on to iTunes and the other digital music services?’ INgrooves was representing this music for exploitation and TV films and video games here in the United States. But very quickly, we recognised that once we had all this information on the catalogues, once we had these rights, it was very easy to extend it for digital download. So we immediately began to expand our services

³⁵ For more discussion on this, see 5.1

to include downloading and did deals with iTunes, Rhapsody and the legal form of Napster and so forth.”

(Robb McDaniels, founder of INgrooves, Interview, 29 August 2013)

The ever-increasing access to digital technology sweeping across the nation and generation gave rise to the idea that digital transaction was within anyone’s reach. However, quite contrary to this belief, commercial transaction of digital content entails professional skills. Everything involved in digital distribution, from converting information contained on physical products into digital, digital rights management to the methods of settling payment was a novelty, and thereby required special expertise. Few independent labels, let alone artists, were prepared to carry out even the simplest tasks of business in digital terms. iTunes’ success sparked a sudden demand for digital music distribution, and INgrooves needed to scale the platform. McDaniels says:

“That was in 2003. That was when we also realised that in order to effectively become a digital distributor, we needed to have a platform to manage the delivery of these assets.”

(Robb McDaniels, founder of INgrooves, Interview, 29 August 2013)

He had a basic idea about how to build the system, but his knowledge of technology was nothing compared to his affinity for music. This gap was bridged very fortuitously. His life insurance salesman happened to be a former HR Director at Napster, and put him in touch with David Kent, a former Director of New Technology at Napster, who later became CTO at INgrooves.

“The guy who came to sell me life insurance, this is to show how things happen, had been HR Director at Napster. He started asking me what I was doing as I was going on my life insurance policy, telling him I promise I never smoked weed, I don’t go skydiving...all that good stuff. So I tell him what I’m doing, and he said ‘Look, I gotta go, and you gotta meet someone.’ It was David Kent.

He's been the primary architect of our enterprise software application which is today what really empowers INgrooves and even Universal Music Group."

(Zack O'Malley Greenburg (2012) "INGrooves: Proof You Can Make Money On Music, Even If You're Not Apple." *Forbes*, May 2)

In the beginning, INgrooves' business was focused on carrying out this basic task of converting CD to digital formats and sending the information to digital music service providers. Deals with good artists also helped the business. Alex Branson, SVP at INgrooves International, explains:

"The business began in literally converting. It was just about getting them ready to suddenly go to Rhapsody, iTunes or Amazon. So pretty much for the first six years of the company, 2002 till 2008, it very much grew organically. They tried to bring some big artists. One of the main labels is called BSL. They did very well. And that's probably one of the things that kept the company going financially during those years."

(Alex Branson, SVP at INgrooves International, Interview, 16 May 2013)

During the dawn of the legitimate digital music business period, many music companies appeared and vanished. Throughout the ebbs and flows, INgrooves grew continuously. Robb McDaniels thinks the secret of this growth is a combination of capital, forbearance and strength, as well as luck.

"It's tough to survive. We've gotten ourselves into this generational shift in consumption patterns from physical but this is the digital. This isn't a flash in the pan overnight type of opportunity. It certainly takes access to capital to help you survive the ups and downs. It takes patience and fortitude, but there's a little bit of luck sprinkled in there as well."

(Zack O'Malley Greenburg (2012) "INGrooves: Proof You Can Make Money On Music, Even If You're Not Apple." *Forbes*, May 2)

In 2005, INgrooves had two of these ingredients – capital and luck. It raised \$2 million of investment from a venture capital firm, which led to a considerable sales increase of \$1.6 million in 2006 and \$4.7 million in 2007 (Greenburg 2012). The stroke of luck was McDaniel's acquaintance with Al Teller, a music industry veteran who had held numerous top executive roles including Head of Columbia Records and Head of MCA Records (which later became part of Universal Music Group). INgrooves' technology impressed Al Teller enough to convince him and his contacts to make a financial investment as well as build human credentials. He introduced INgrooves to Universal, which ignited INgrooves' advancement soon afterwards (Greenburg 2012).

3) Beyond Distribution

(1) Marketing/Promotion

Over the years, as digital music sales grew, so did the number of digital music distributors. INgrooves felt the need to distinguish itself from its competitors. The pursuit of establishing a unique advantage as a digital music distributor soon resulted in an advancement in its position as a middleman between labels and retailers. Alex Branson explains:

“We came as a distribution company...but over time that stopped being enough. There were a lot of other companies came into this place. We thought about market force as a marketing company. We spent time calling retail accounts – ‘We’ve got this new record, really good. Here’s some information about it. What opportunities do you have this week, or the week it was released?’ We participated – ‘Is there a feature that we can have on homepage, or a genre page, or a special price-drop promotion, maybe we could create a special label sample that you can feature?’ We can have that link to back to the catalogue. There are lots of different deals that retailers can do.”

(Alex Branson, SVP at INgrooves International, Interview, 16 May 2013)

Behind this change lay an unexpected problem that the digital music industry had begun to face. Contrary to the prediction that an abolition of the barrier of entry would lead to democratisation of access, it generated problems both for artists and consumers: it became even more difficult for artists to have their music heard, and consumers faced a “tyranny of choice” (Mulligan 2014)³⁶. Underpinning this dilemma was the resurgence of attention economy that economist Herbert Simon had predicted in 1971.³⁷

“(I)n an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes...Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it” (Simon 1971, 40–1).

In the face of unlimited access to music, it turned out that most consumers do not want to search for music amongst 300 million tracks. The majority of users want to be told the music to which they should listen. The sheer abundance of choice enabled by streaming services had led to complicated control over ways of creating hits. This dilemma brought back the industry’s long-established practice: filtering. Emphasising that this is a continuation of the traditional music business, in which a few albums were displayed in retail stores, Dominic Jones, International Sales and Marketing Director at INgrooves, indicates that shelf space competition has been replaced by attention competition.

“I suppose it’s going back to the physical world when we had CDs and vinyl. The biggest hurdle to overcome is getting record shops to want to stock it in the first place. Because you actually have to sell them physical things and you have to ship them from one warehouse to their warehouse and to their shop and convince them that people looking through the door are going to buy it.”

³⁶ See p.189-190, for more discussion on this.

³⁷ Benkler (2006) termed this ‘Babel objection’ to describe the continued importance of editorial power which can control the visibility of digital contents.

(Dominic Jones, International Sales and Marketing Director at INgrooves, Interview, 5 August 2013)

However, there are differences in the digital era. What is distinct from the past is that the removed entry barrier has itself been replaced by a new barrier, in this case the problem of maximising exposure in the diversified channels of music discovery.

“In the digital world, I think it is very different, because you are shipping them a master file – everything you have and with a few exceptions, most of the large retailers will take everything that you want to deliver to them. The hurdle with digital is getting the most profile for it and making sure it is in the homepage or a genre page or on a newsletter...We have to convince those retailers that our releases should be higher profile and bigger priorities than those of all our competitors.”

(Dominic Jones, International Sales and Marketing Director at INgrooves, Interview, 5 August 2013)

The arrival of attention economy in the music industry came as a belated connection between what consumers wanted and what the industry had to offer. In the conventional system, where the recording industry had considerable control over the music to which people listen, recording companies' main concern was maximising the odds of exposure. Although the way music becomes popular already entails a certain degree of uncertainty, the changing dynamics prompted by digital technology have made it even more complicated. As the streaming market crosses further into mainstream adoption, being featured on streaming services has become one of the most, if not the most, significant avenues for music marketing and promotion. Consumers' unchanged demand to be told the music to which they should listen, combined with labels' strong appetite to wield their control over people's listening, has left leeway for retailers to manipulate what they highlight. Retailers have always worked directly with major labels. However, the enormity of the independent catalogues available resulted in a need for help from digital music distributors like INgrooves, who had already built a relationship with independent labels and retailers and were thus well-positioned to move into digital

music marketing and promotion. The major role of INgrooves' marketing team is to choose the top 10 albums from 6,000 new releases per week.³⁸

Considering the significance of grabbing the attention, it is important to know on what criteria do these companies rely to choose these 10 out of 6,000. The quality of the album has always been thought to be of the utmost importance. However, as Frith (2001) pointed out, the reasons why we like certain music or why certain music is popular is not an objective means of determining objective aesthetics of music, but a socially determined preference. The "popularity" of a song, therefore, is less an outcome of an absolute aesthetic definition than a socially determined collective consumption. It leaves the criteria of prioritising albums cannot be not solely based on the quality of albums or sales. As a middleman between labels and digital music service providers, INgrooves need to take both parties into consideration. The criteria that INgrooves take into account for the labels are the important albums that labels emphasise and their relationship with these labels. Dominic Jones says:

"It's partly those labels that shout out the loud and say this is really important to us. Part of it will be the relationships that we need to maintain with key labels and priority labels. That might be to do with who signed them, in which part of the company. It might be to deal with future relationships we want to maintain, it might be down to history of relationships or it might be just down to perceiving that a great label that have good artist rosters that are more important than the sales maybe in some extent."

(Dominic Jones, International Sales and Marketing Director at INgrooves, Interview, 5 August 2013)

Equally important is providing the information that digital music service providers want. For digital music service providers, what is deemed to be significant is closely related to what sells well, which is often a result of the wide publicity of the albums. Dominic Jones continues:

³⁸ This figure is based on the interview conducted in 2013.

“We have to give the people the way that [they] are trying to appeal to, the ammunition to say people will be coming to your site or people will be coming into your shop to buy this, because here are the things that will drive them towards you. Those things generally are radio playing, press, TV or I suppose increasingly good use of social media. Primarily what I think we should be trying to indicate on those priority sheets are the 10 most important things that we have got this week [which] are led by the basics of press, radio and TV and touring, I suppose. But really most retailers want to know how that public has heard about it, read about it, seen it. And I used to say to labels, if a retailer hasn’t heard about you, read about your singing, why should they want to stock it?”

(Dominic Jones, International Sales and Marketing Director at INgrooves, Interview, 5 August 2013)

There are exceptions where artists rise to the top without relying on conventional promotion channels. Although this exceptional stardom syndrome is nothing new, what are new are the diversified routes that digital technology has enabled. At the crux of this change lies the D2F tools through which unsigned artists can rocket to stardom. However, it would be misleading to generalise this as a new industry phenomenon. Whereas the competition of jockeying for entry has disappeared, the barrier of getting noticed still exists. As Dominic Jones says,

“You can’t just approach The Times and say, ‘hello, I have got this new album’. It has to go through [the process]. I mean in some cases, if you are [a] recognised artist that might work, but still they would rather be approached by somebody who is bringing them the cream of what is out there.”

(Dominic Jones, International Sales and Marketing Director at INgrooves, Interview, 5 August 2013)

As affirmed by other scholars (Rogers 2013), the long-sustained market practice structured by commercial interests is still firmly rooted in the popular music-making

process. Furthermore, new intermediaries that have emerged from digital music business are becoming part of the entire process.

“They want to know what’s going on [in] press, radio and TV. Radio wants to know what’s going on in retail and press and TV. TV wants to know what’s going on the radio, press and retail. So everybody needs to know how the promotion is building. We [INGrooves] are collating that information of the best promo to then present to the retailers...[and] giving them the reasons why they should be in retailers.”

(Dominic Jones, International Sales and Marketing Director at INgrooves, Interview, 5 August 2013)

(2) INresidence

Having acquired considerable market knowledge and technical ingenuity, INgrooves was prepared to bring their prowess to bear upon the way artists could stand out from the noise. In 2013, the company, which already had tools for cultivating artists’ careers through digital and physical distribution on a global level, marketing/promotion and rights managements all in-house, found a niche market they could enter. Under the name of INresidence, INgrooves provides a suite of “marketing and promotions services to established artists and labels looking for a better, and more fair, all-encompassing distribution solution” (Pham 2013c).

- Reintermediation

Quite distinct from the widely perceived prediction that the recording industry would experience a radical change through disintermediation, the digital music industry is more reintermediated than ever before. One of the reasons that brought about this reintermediation is that not all artists are endowed with business skills. Alex Branson comments:

“The problem with the disintermediation is that they’re still gonna organise themselves. The recording artist isn’t going to be the world’s best businessman, because they’re talented musicians or singer-songwriter[s] or whatever. Not everybody has all the skills they need to do it. So they need a little bit of help.”

(Alex Branson, SVP at INgrooves International, Interview, 16 May 2013)

Building a fan base and making noise amongst the crowd still remains the biggest hurdle for most artists. Alex Branson continues:

“How do you build your fan base? Those (D2F tools) are probably great if you’re super-talented at all the social networking services etc. The challenge is how we can get hold of the noise? It’s very difficult. It’s very easy for a record company to consume the marketplace. And I think what has been lost a little bit is that professionalism, sometimes, what used to be confined to record companies, what they need to do in order to make their music more popular than the other ones. How do you convince them yours is the better one?”

(Alex Branson, SVP at INgrooves International, Interview, 16 May 2013)

Toby Peacock, International Labels Director at INgrooves, believes the niche was created through the narrowed margin in this area. This, perhaps, is where INgrooves’ three unique advantages, as a global distributor, a technology company and an expert in independent sector, are crystallised.

“I don’t think the record label can afford to get away with the kind of stuff they did in the ‘80s. I don’t think the margin’s that big anymore.”

(Toby Peacock, International Labels Director at INgrooves, Interview, 10 September 2013)

- Global Distribution

As a global digital music distributor, INgrooves can distribute and do marketing and promotion on a worldwide scale. Toby Peacock says:

“I think, as everything becomes more global and digital distribution like INgrooves makes sense, instead of where you might have signed in the past, like different deals with different record companies in different territories. Now it’s much more of a global thing. INresidence has a whole. We have to offer a worldwide deal and a worldwide solution, not just North America.”

(Toby Peacock, International Labels Director at INgrooves, Interview, 10 September 2013)

In addition to the digital side, physical distribution equips INgrooves to reach out to worldwide fans effectively.

“We can affect an efficient global physical release, because we’re running direct marketing relationships with each of those partners. They act like a local office for us, helping us navigate the ever-changing marketplace.”

(Alex Branson, SVP at INgrooves International, Interview, 16 May 2013)

- Technology Company

While digital technologies are perceived to have opened up great opportunities for artists by providing diverse options, it is not the preferred method of all artists. To artists who are not familiar with these changes, digital technology is, in fact, an obstacle to entry. This is especially true for established artists that have been away from the field for a while. This is how INresidence picked up Mazzy Star, an American alternative rock band that was acclaimed in the mid-1990s. The band already had a solid fan base, but had not released an album in 17 years. For bands like Mazzy Star, there are many things on which they need catch up in the digital music business environment. Toby Peacock says:

“Although they [Mazzy Star] are very aware of how the music industry works, it’s probably not quite near how it works today [compared to the way] it was 17 years ago. So, when you’re talking about digital and social media, there’s a lot of education that has to happen with the band and management. Very good management look after some big acts but they tend to be sort of an old good starting. So if it’s talking about a free track giveaway with a retailer or something digitally, it’s kind of ‘how does it work?’ You have to explain why we’re doing it and why it would be a good thing, and what the payback is, etc., etc. If it’s an album being streamed upfront for a week, ‘what does that actually mean? Does it mean people can download it or not?’ There is that education.”

(Toby Peacock, International Labels Director at INgrooves, Interview, 10 September 2013)

As a technology company, INgrooves can also be better positioned in using digital data. In choosing which artists to work with, the quality of sound comes first, which in many cases means the marketability. An interesting change that has arisen in the digital music business is that the way of measuring marketability has become more data-based. Toby Peacock explains:

“I think it always has to come back down to the music. Is the music good? The next thing naturally is that there is a market for it. Artists nowadays, the way people read social stats that they use online to promote themselves, and the kind of reaction they are getting is all very open now. It has opened up the market, so everybody can do it.”

(Toby Peacock, International Labels Director at INgrooves, Interview, 10 September 2013)

Rather than relying on an intuitive ear alone by going to gigs to find raw talent, intermediaries in the digital age can use other indicators to reduce the risk of investment by looking into the data, such as followers on social media. Toby Peacock continues:

“There still needs to be some sort of [person who] curates and makes that decision on what is good. If it’s not good, why has it got all these followers? Can we monetise that? It’s become more business-like [in] that rather than in the day it would have been going out to see bands who were trying to do something live and sing for them and go, ‘Okay, I get this. This is good, I can make this into a sellable proposition’.”

(Toby Peacock, International Labels Director at INgrooves, Interview, 10 September 2013)

Toby Peacock believes that, as a technology company, INgrooves is in a great position to produce a better output using the data available to them.

“INresidence is quite good, because you always know that you can be at the right place at the right time and the people there or here in theory should know what’s happening and what’s coming next.”

(Toby Peacock, International Labels Director at INgrooves, Interview, 10 September 2013)

Robb McDaniels agrees with this.

“We are actually paying an artist more accurately. Rather than one artist benefitting from selling a CD which only has two songs on it that the fan wants, the fan will now only pay for the two songs that they want and then have money to pay for [an]other bunch of artists for music that they want to have access to. So it’s potentially a more fair and equitable distribution solution.”

(Robb McDaniels, founder of INgrooves, Interview, 29 August 2013)

- Independents’ Expertise

INGrooves' strong foothold in the independent music field is a unique asset for artists who want to label themselves as independent and need leverage to develop their career. Toby Peacock explains:

“From an indie’s point of view, there is still resistance to going into a major. Sometimes well-founded...For me, the days of the career artists and major labels, they are a lot harder to see. I mean, there are bands that come through successful albums and then if the third album [has] diminishing return[s] with the labels, then that will be the end. In some ways, that is where we pick up some artists from, because they have a fan base, but the major labels are not prepared to fund their money.”

(Toby Peacock, International Labels Director at INgrooves, Interview, 10 September 2013)

INresidence has one of the attractive qualities of independent labels – providing more control over the way artists pursue their careers. Because artists have online access through the INresidence system, they have a better idea of the way to move things forward, and do not have to give up the lion’s share of their income as was the case in the pre-digital era. This also forces INgrooves to ensure they are much more bespoke in terms of artist management. Toby Peacock continues:

“The artists have been around the block with the major labels, then they get to see that they don’t need to be spending so much money or when they see what is being spent for real distribution company, they then quickly go, ‘Actually, this is half my money. No, I don’t think we should be staying with hotels, flying over there.’ Artists can decide what they think is the best for them. We try to be more bespoke. It’s a lot more having conversations with the artist.”

(Toby Peacock, International Labels Director at INgrooves, Interview, 10 September 2013)

Many interviewees from INgrooves believe this is distinct from other distributors. Quentin Chambers, International Director of Business Development at INgrooves, says:

“We’re a much [more] marketing-focused company, much more than The Orchard, we have more people that focus on that at INgrooves than in those companies. And also we’re not a catalogue-focused company like someone like The Orchard is, when you have an enormous catalogue. The Orchard has 7.8 million tracks in their catalogue map. We’ve got less than one million.”

(Quentin Chambers, International Director of Business Development at INgrooves, Interview, 9 September 2013)

Perhaps the best vantage point of INresidence comes from its close relationship with retailers. Armed with its well-established connections, INgrooves can exercise influence over the acts to which music retailers pay more attention. Alex Branson explains:

“One of the things that we did this week is ‘Someday’. It went over to Spotify. As you log on Spotify, splashing pages come up. And it’s advertising the catalogue from the record company called Om Records. That special promotion we do with Spotify is very very effective. Explore or discover the new music. That’s sort of the thing we do.”

(Alex Branson, SVP at INgrooves International, Interview, 16 May 2013)

6.2.2 Partnership with Universal

Important momentum was built in 2008 when Universal Music Group (“Universal”), the world’s largest music label, made a strategic investment in INgrooves. The partnership underpins the often-overlooked side of the digital music business history – majors’ struggle to maintain their supply chains, which served as a crucial means for control in distribution. On the flip side, this same struggle opened up opportunities for independent players, which eventually led to a restructuring of the industry.

- Universal's Struggle

Through a vertically integrated system, majors have long maintained tight control over distribution of music products in the market. “Terrified” by the idea of losing control, they built their own distribution system in the beginning³⁹. Universal realised that their outmoded system was failing to address their needs efficiently. As is widely known, digital technology’s disruption of this control was largely tackled through legal means: a plethora of regulatory measures were adopted to strengthen copyright protection and numerous legal allegations were made not only against the companies, but also their consumers. While the majors convinced legislators of their views to a large degree, the difficulty of maintaining control was due to their own internal system.

“They built their own platform. It managed their business for about a decade. So they did well enough. But it began to break down a little bit.”

(Robb McDaniels, founder of INgrooves, Interview, 29 August 2013)

An industry entrepreneur encapsulates this:

“If we think about the troubles majors experienced in building distribution system [it] makes it daunting [that] this once-used-to-be-a-very-small-company could. While we believe big companies would be able to afford the world’s best engineers and the best system available, this is not the case with digital music distribution.”

(Interview with an Independent sector entrepreneur, name unrevealed at his/her request)

David Kent, CTO at INgrooves, gives an insight into why major labels’ formal and monolithic approach could not survive in digital music networks.

³⁹ See 5.2.2 section 1) for more information.

“There is an approach to building software that is very, very much an ISO 9000 approach, which takes you two years to produce anything. But it is kind of so formalised and documented that it has left a paper trail of exactly what's running. By the time we get there what might be running is obsolete but it's highly formalised.”

(David Kent, CTO at INgrooves, Interview, 9 September 2013)

Gordon Rintoul, manager of Client Services at INgrooves, shares a more detailed description of what happened. He explains that Universal nearly went bankrupt for the increasing amount of fees they had to pay to Oracle for outsourcing the license.

“I don't talk too much about it but I know how much some of the major[s] spent on it. And they very very nearly bankrupt themselves. They spent money that they thought is necessary to build up [the] platform. If you're technical, you're not going to do it with Oracle, because [of] the cost of the Oracle license. There's also [the] individual cost of every time someone connects to that database. So [the] end of scenario that can run completely out of thing if you got thousand people accessing that database [with] no middleware, then all of these licenses is going to cost [a] fortune. Not just that. You have to hire Oracle engineers etc., etc.”

(Gordon Rintoul, Manager of Client Services at INgrooves, Interview, 23 August 2013)

In essence, the new methods of music production and distribution in the digital age exhibited fundamental changes that diverge considerably from the conventional approach. This novelty thereby required a significantly different method of building a system. This is how Gordon Rintoul built a digital music distribution system early on for Rightsrouter as a former co-founder.

“So, for example, my system that [was] built back in 2003 was [a] very clunky type of system, but what? We built it for a couple thousand pounds and the

system I built when the company took over the cost. And then it did what the other one that couldn't do as much does it, and would eventually [have] been much better if we kept on playing money into it. But how much money are you going to spend on those situation[s] here with just becomes completely up in front? You're never going to get your returns."

(Gordon Rintoul, Manager of Client Services at INgrooves, Interview, 23 August 2013)

Gordon Rintoul thinks that it is more about mindset than technicality per se.

"So this was the mentality of the major labels at that time: 'Is this Oracle going to be like shiny if we're going to go with this, we're going to go with that and what about these apps'. And sooner or later when someone's pull[ed] the plug on it, because they got into maybe spending 30, 40, 50 100 million like on the system developments and they have to stop it. BBC is a classic example, that BBC had the system where the ones to go through digitising the program and probably all their catalogue and they put a plug on it after spending 100 million on it."

(Gordon Rintoul, Manager of Client Services at INgrooves, Interview, 23 August 2013)

In building INgrooves' distribution system, One Digital, David Kent took the opposite approach to the conventional method. Based on "dynamic integral approach", INgrooves achieved a more efficient, adaptable and fast distribution system. David Kent explains:

"The entirely opposite approach [to the conventional system] is a dynamic integral approach to building software and it's designed in its organisation, in its implementation. We don't have an outlying approach but we got here, we leapfrogged everybody else because of sort of the opposite approach to building software. I'm not saying it was an undisciplined approach but it was very, very

different in many of its aspects. I think that that is the strength of the platform. I think it makes more adaptable. I think it makes it faster in production turnaround.”

(David Kent, CTO at INgrooves, Interview, 9 September 2013)

Central to the partnership through which major labels loosened their control over distribution was the majors’ organisational structure, which was fundamentally out of sync with the fast-changing nature of digital technology. Many interviewees at INgrooves think the partnership is owed to major labels’ status as behemoths. For example, Sharon Matheson, Label Manager at INgrooves, emphasises how independent labels can perform better in the fast-changing digital business environment whereas major labels’ horizontal structure can be a hindrance to adapting to new changes.

“The indies are always first to move. The indies are small but flexible. That’s one thing great about INgrooves: despite being a multinational company, we can change so quickly, whereas Universal isn’t really able to do that. They are more of a linear company rather than horizontal. So there are so many decisions to be made all along. There’s not just one guy in the top that is going to do that and then filtering all the way down. There are so many different departments, different teams, all across the world. They can’t move very fast.”

(Sharon Matheson, Label Manager at INgrooves, Interview, 24 August 2013)

2) Partnership

Universal undertook market research to look for a potential partner, with two strategic aims in mind: a company that had a cost-efficient and scalable system, as well as a strong foothold in the independent sector. Robb McDaniels explains:

“They (Universal) had been researching the marketplace around the world. They wanted two things. They wanted a company that had a technical platform that was ‘next generation’, that was cost-efficient and more scalable than their internal systems. They wanted to use a new platform to handle their digital

supply chain. And then they were also looking for a company that had a presence in the independent music industry because they realised that the independent music industry was expanding and they wanted better representation with the independents.”

(Robb McDaniels, founder of INgrooves, Interview, 29 August 2013)

Impressed by INgrooves’ “unmatched technology and the value-added services” (Universal Press Release 2009), and perhaps the existing relationship built through Al Teller, the head of MCA Records, as an additional incentive, Universal chose to use INgrooves as their new distribution provider.

In 2008, Universal made a strategic investment in INgrooves, making Universal the major stakeholder in Isolation Networks Inc., the parent company of INgrooves. Through this alliance, Universal used INgrooves’ distribution platform, One Digital, to deliver all of Universal’s North American digital content to the major music services. This partnership took INgrooves’ system to another level. It furnished INgrooves with the capital to invest in developing “the finest and the most comprehensive digital distribution platform” (Universal Press Release 2008). As the largest global recording label, Universal required a sophisticated system, as its needs were much more complicated than most other record labels. Alex Branson explains:

“That enabled us to bring in a lot more resources, we were able to develop the platform specifically for Universal, which meant that there was a lot of learning. Because Universal, being who they are, has very special types of deals that they do with retailers and lots of different types of ones. And they’re often very different commercially to independent record company deals. It’s more intricate: it has more price tiers, different ways of expressing territories or streaming, audio and video, lots of different things. For us from a technology point of view, it presented a challenge, because it was new. But they’ve been very happy. We delivered all on time on budget. It’s by far the best platform in the world of all time.”

(Alex Branson, SVP at INgrooves International, Interview, 16 May 2013)

- Technical Level Playing Field

The partnership with Universal produced a tremendous synergy impact through knowledge transfer from Universal. Robb McDaniels says:

“There’s been a lot of knowledge transfer from Universal. They have a lot of smart people there. Being able to work on a platform that gets them ready for [the] digital world as it obviously helps us as we get the rest of our content partners ready for the digital world. So yeah, there has been a lot of good synergies with that relationship.”

(Robb McDaniels, founder of INgrooves, Interview, 29 August 2013)

The foremost impact of all, perhaps, is market validation, through which INgrooves attained the majors’ authentication. Alex Branson explains:

“All of a sudden, the largest record company in the world is using our platform to deliver all their music to all their stores. That’s quite a statement, quite an achievement.”

(Alex Branson, SVP at INgrooves International, Interview, 16 May 2013)

Robb McDaniels thinks this change even has the potential to level the playing field. The fact that major labels and independent labels can have access to the same distribution platform is something that would not be possible in conventional settings.

“It has been a very important part of our business for the last five years. Obviously, it provided us with the validation of the marketplace to go and really sell our services to independents and to management companies. They get access to the similar platform, technologies and expertise that Universal uses. So it puts the indies on a level playing field with the majors.”

(Robb McDaniels, founder of INgrooves, Interview, 29 August 2013)

- Opens up Niche Market for Independent Distributors

The union of the world's biggest label and an independent digital music distributor epitomises the way high street fashion can win over haute couture. David Kent thinks this is possible due to the niche created by major labels' neglect of the ecology of the digital music environment. He says:

“They (Universal) neglected a simple aspect of multiplication and almost ruined their business as a result – and we are all about multiplication. There are so many retailers multiplied by so many types of assets with so many intellectual property restrictions. We are absolutely scrupulous. Our business is built on being 101% compliant with intellectual property law from the get-go, and there are so many labels and artists and suppliers of content that when you multiply all the dimensions it's inherently unmanageable. That's what we do. We manage the unmanageable.”

(David Kent, CTO at INgrooves, Interview, 9 September 2013)

In other words, Universal's resistance to embrace the digital novelty opened up an opportunity for INgrooves. Robb McDaniels explains that this is better understood as a process of finding a league of its own.

“Historically, they [major labels] could certainly be blamed for a variety of errors. But I'm also in a position where our company has benefited from those few errors. Some major labels were resistant to embracing technology and its impact on business was one of the reasons why Universal outsourced its business to us. We benefited from that. So, labels are focused on marketing, developing artists, and promotions and less about the nuts and bolts of distribution. So I think it's one of the things that they're getting better at. But we benefited from the past, so I'm not going to speak too negative about that.”

(Robb McDaniels, founder of INgrooves, Interview, 29 August 2013)

3) Acquisition of Fontana Distribution

In 2012, INgrooves took another step to further strengthen its partnership with Universal. It purchased Fontana Distribution, which was Universal's North American independent physical digital distribution solution. The acquisition came when INgrooves' growth was spiralling upward. Robb McDaniels explains that INgrooves was looking for extra help to accelerate the growth.

“Our INgrooves team had really knocked the cover off the ball in 2011. And they grew by ninety per cent that year. We just needed some additional people to help manage that growth.”

(Zack O'Malley Greenburg (2012) “INgrooves: Proof You Can Make Money On Music, Even If You're Not Apple.” *Forbes*, May 2)

This growth was partly sparked by Shamrock's investment in 2010, which required INgrooves to build a vertical digital platform including e-books, and to scale it so as to incorporate physical distribution. It appeared essential to provide a single point of centralisation for both the physical and digital distribution service, so as to enhance the relationship with the partners. Robb McDaniels reaffirms this position in an interview for this research project.

“It was important for us since a lot of our labels had a single point of centralisation for their digital and physical distribution, instead of digital through us, and physical through another partner. We became big and important enough that a lot of our clients wanted to be in that central place. So the best thing for us to provide the best possible service to our most important labels was to have physical distribution and marketing within the same group as digital distribution and marketing.”

(Robb McDaniels, founder of INgrooves, Interview, 29 August 2013)

This time, INgrooves went out to market to find the best partner, and Fontana was the partner it chose. Robb McDaniels explains that it was a strategic decision that benefited both INgrooves and Universal in terms of attracting more labels.

“We purchased them from Universal. Fontana was Universal’s North American independent physical and digital distribution solution. Of course, the digital distribution ran through our overall deal with Universal so it came to our platform. It was important for us as digital crossed the 50% of revenue threshold in North America. We had a very straightforward deal with Universal. For many strategic reasons, it was good for them as it was good for us. It helped us grow in the business and attract some pretty labels.”

(Robb McDaniels, founder of INgrooves, Interview, 29 August 2013)

This begs the question, however, of what was good for Universal. The timing is a crucial clue. The acquisition coincided with a time when Universal was trying to purchase EMI. EMI had experienced a dramatic decline of business in the digital age. After a few changes of ownership, EMI put its music publishing business, including Abbey Road Studios, up for sale in 2010 in an effort to reduce its debt (Bates 2010). Universal intended to acquire EMI, but had to divest its music assets in order to get approval from the regulators including the European Commission and US Federal Trade Commission. The sell-out of the Fontana division was supposed to reduce 2% of the market share and alleviate the concerns raised by Impala and A2IM, organisations representing independent labels’ interests (Christman 2012). Robb McDaniels does not deny the role that this played in the acquisition.

“I think that might have been part of it. It’s also not a core of business for them that were viewed as not very strategic. I think that was part of it and I think there are a few reasons.”

(Robb McDaniels, founder of INgrooves, Interview, 29 August 2013)

4) Implications

This partnership, however, has been a double-edged sword for INgrooves. All interviewees at INgrooves were unequivocal in stating that Universal maintains a very small share of the ownership at INgrooves. Robb McDaniels asserts that INgrooves' business is not influenced by Universal.

“We just had to make sure that the independent music industry knows that we're not owned or controlled by Universal. The work we do for them is very separate from what we do for everybody else.”

(Robb McDaniels, founder of INgrooves, Interview, 29 August 2013)

INgrooves' share was reduced by Shamrock's investment, making Universal's share less than it first invested. However, this partnership could have far-reaching ramifications if it succumbs to the pitfall of letting majors regain their control over the supply chain. This is a special concern because INgrooves is not the only digital distribution aggregator in which majors have a stake in the ownership. Established in 1997, The Orchard is another major player in digital music distribution. It owns eight million independent music tracks, constituting the largest number of catalogues. In 2012, Sony Music Entertainment made a strategic investment in The Orchard and has 51% of its ownership. Scott Cohen explains that the partnership with Sony was the result of a business strategy to purchase Independent Online Distribution Association (“IODA”), which was then another main digital distribution company. He also emphasises that this partnership will not affect the business of The Orchard.

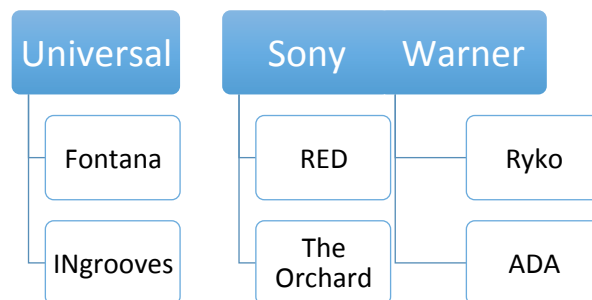
“Sony had a large equity stake in IODA and when we were going to buy IODA, what we ended up doing was creating a new venture; so taking IODA which was controlled by Sony and The Orchard. Setting up a new company, this new company is called The Orchard. Now try to think how many equity stakes a company like Sony has in different companies whether they're software companies, hardware companies, movie companies, music companies, it's what

Sony does. They have a piece of lots of things. And if you ask people at Sony about it, most people would not even know they exist.”

(Scott Cohen, co-founder of The Orchard, Interview, 7 August 2013)

An expanded horizon of the distribution of independent music, illustrated in Figure 14, provides a striking feature of contemporary digital music distribution. All three major indie labels, INgrooves, The Orchard and Alternative Distribution Association (“ADA”), have partnered with major labels, and all three major labels, Universal, Sony and Warner, distribute their own indie labels’ catalogues through their indie label distribution partners.

Figure 14. Digital Music Distribution Network by Ownership



Consolidate Independent (“CI”) is another digital music distributor, owned by Beggars Group, the largest indie music label. Beggars Group has managed to stay independent despite the majors’ relentless courtship. Kieron Faller, General Manager at CI, sharply criticises the approach other digital music distributors have taken, for he thinks it questions the very legitimacy of independent music sector.

“ADA is particularly strong in the States in physical, and that’s called alternative distribution alliance. Alternative to what? IODA did start independent, but once it was owned 51% by Sony...independent of what? People just kind of throw the word around to try to – I honestly think to try to fool people into thinking – to fool indie labels.”

(Kieron Faller, General Manager at CI, Interview, 30 August 2013)

He then warns that majors' ownership in the independent sector could have a detrimental impact on the industry by allowing majors to regain market dominance through consolidation.

“You might not think that it matters that much who manage[s] The Orchard and to an extent, if you are an Orchard customer, maybe it doesn't matter that much to you in a direct, on a day to day way...You are helping Sony that has a greater dominance in the market...the fact that The Orchard has collected together with the small labels and then Sony came in and bought The Orchard is quite a straightforward kind of sum for that.”

(Kieron Faller, General Manager at CI, Interview, 30 August 2013)

Kieron Faller's remark obliges us to explore much more closely whether majors' ownership of independent labels indeed bears any relation to their market dominance. A debate on majors' ownership provides a particular lens through which we can find the links. According to the statistics released on Billboard, there is a discrepancy between the ways of calculating the market share (Christman 2013). One is to calculate it by ownership, and the other is by distribution. When the market share is counted by ownership, all large independent distribution shares by Alternative Distribution Alliance, Caroline, RED and INgrooves are absorbed into major labels' market share, marginalising independent labels' share at 12.3%. On the other hand, distribution-wise calculation shows independent labels' market share as almost tripled to 34.5%. Organisations representing independent labels' interests have been outspoken about the increasingly high market share of independent labels.

“Our market share is actually higher than the major labels...32% on Spotify and close to 40% on Pandora. The RIAA claims they represent 99% of the industry, but they don't. Our members own their businesses. Sometimes they use the majors as their distributor. But actually they don't use major labels as their distributor for their digital. So that's really a lie. They don't parse it when they

claim 99%. iTunes is about 40% of the business in the US. They do the direct deals with half of our members. So that's sort of distorting, isn't it? To claim that market share."

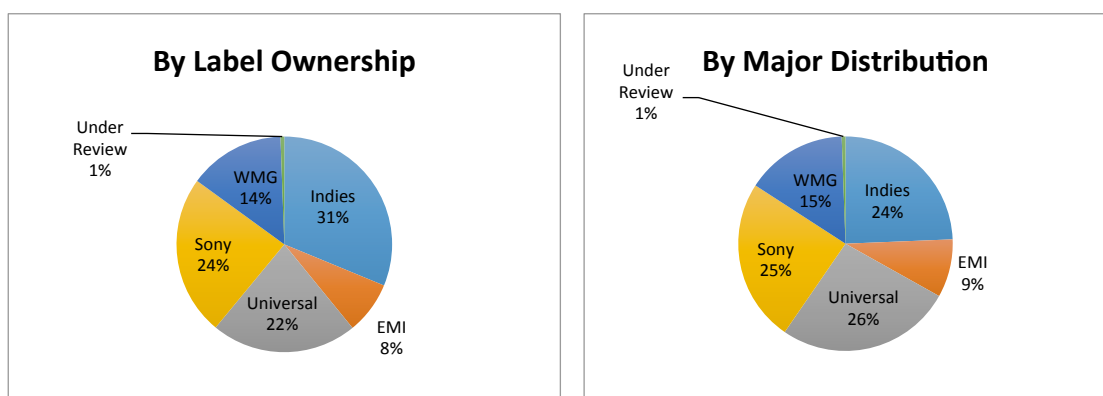
(Rich Bengloff, President at A2IM, Interview, 27 March 2013)

Why do they fight so hard for this market share? Simon Wheeler says this is interlinked with major labels' strategy of exaggerating their market share in order to maximise their album exposure on streaming music platforms.

"There are many different components in the deal which can be beneficial to the company. For getting that amount of shop window space... Universal said I have got 40% market share so I am 40% of your front pages for their artists. And Sony would say the same and Warner would say the same, and when you add up their market shares you will probably get to 150%. Because everybody exaggerates their market shares, it means that there are no space left for other people. And they're surely quite aware of those top mechanics. It could be quite tricky, and some people are very pleasantly aware and transparent and very honest and some people aren't."

(Simon Wheeler, Vice-President at Beggars Group, Interview, 1 August 2013)

Figure 15. Market Share Comparisons by Ownership and Distribution (Christman 2013)



Maintaining stakes in other parts of the industry has widely been used as a way to read market trends and prepare for potential risks or changes. For major labels, it was direct vertical integration that they used to manage their control over the market. With recent changing dynamics, direct vertical integration has become difficult; thereby market control has become very complicated. Major labels are escalating their efforts to maximise their control. Besides the conventional methods – extensive spending and legal allegations – they are trying to maximise the exposure of their catalogues on digital platforms. Market share is thus crucial to increasing their odds of creating hits. Although most interviewees denied the concerns of the partnership, the indirect implication of the partnership being forged in the industry appears to be more far-reaching than it might appear on the surface.

6.2.3 Conclusion

INgrooves' emergence as a digital music distributor underpins a few significant changes lurking in the music industry. First, it signifies the reintermediation of the music industry. Despite the hyperbolic account of the disintermediation enabled by digital technology, it has been proven that the prediction did not materialise for the following reasons: first, not all artists are equipped with business skills, and secondly, the abolished barrier to entry resulted in increased competition and therefore increased the need for artists to have their music heard.

The growth of INgrooves also reveals the unknown history of the digital music industry. While the majors strove hard to maintain control of the supply chain through every means possible, the grip was loosened from the inside. Universal built its own distribution system in an effort to continue its control, only to admit its failure at the brink of bankruptcy. This opened up an opportunity for INgrooves and unveiled the fact that independents' nimble approach could champion majors' monolithic take on the novelty. It represented a great leap forward for INgrooves. The irony here is that by allowing majors to extend their market power by letting them overstate the market

share, independent digital music distributors could indirectly enable major labels to regain control.

6.3 Spotify

6.3.1 Background

1) Early History

Spotify was established in 2006 by two founders, Daniel Ek and Martin Lorentzon, in Stockholm, Sweden. Daniel Ek is a former CTO of Stardoll⁴⁰ and former CEO of µTorrent, one of the most popular BitTorrent clients. Martin Lorentzon is a co-founder of TradeDoubler, an advertising networking company based in Stockholm, Sweden.

Daniel Ek's fascination with music and technology began when he was first acquainted with a guitar and computer at the age of five. With a love of music in his veins, most likely inherited from his mother's musician parents, combined with the influence of his stepfather, who worked in the IT industry, Ek naturally found his groove in both capacities. His aptitude as an entrepreneur blossomed during the dotcom boom in the late 1990s, when he spent his teenage years making websites for various companies. While the prevailing rate for a website was \$50,000, his business model was low margin/high volume, charging only \$5,000. He perhaps learned the importance of recruiting at that time, when he hired his classmates, teaching HTML to the mathematically-inclined and Photoshop to the artistically-inclined. The business performed well enough, and it was not long before the young man, scarcely old enough to drive, was buying every video game console and game he could find.

Ek encountered Martin Lorentzon when he was asked to develop a program for TradeDoubler. He earned a lot of money through this project, but neither a luxurious apartment nor a Ferrari made him any happier. Later, Ek met Lorentzon again, who had since become a millionaire by listing Tradedoubler on the Swedish stock market, but he seemed just as unfulfilled as Ek. The bored but fantastically wealthy duo shared a vision to resuscitate the drowning music industry, and thus began the business. Ek realised Lorentzon's determination to work with him when, in addition to the million Euros of seed money deposited in his bank account, he read the press release that Lorentzon had resigned as the chairman of TradeDoubler within the week-long deadline set by Ek. The

⁴⁰ A game company that allows users to dress up dolls online.

company name “Spotify”, which will forever be etched in the collective consciousness of music history, was born from a mistake. Ek misheard something from Lorentzon, who was sitting in another room making suggestions for a company name. The name had no hits on Google, and its domain name was soon registered for an advertisement-based music company.

2) Muddling Through Piracy

Spotify emerged as an answer to piracy amidst many errors and trials that had been experimented since Napster. Nothing appeared to be able to combat piracy. iTunes was growing, as was YouTube, but piracy continued and the monetary contribution from iTunes, YouTube and everything else put together fell far short of the peak of music sales in the 1980s. The voices of the diverse parties involved well describe the stalemate that the music industry was experiencing.

Since the advent of Napster, music businesses’ profits had been on a downhill trajectory; moreover, digital music services seldom proved to be reliable money-makers. The lack of a proven record gave rise to widespread suspicion, hesitance and even hostility toward new services from record labels. Simon Wheeler is familiar with this phase of music history.

“I think the whole industry has been burned by a lot of companies over the years, who have come in and promised the earth but deliver nothing. And in the meantime made a lot of value for themselves.”

(Simon Wheeler, Vice-President at Beggars Group, Interview, 1 August 2013)

The paucity of digital music sales has been a considerable concern. Most digital music services failed to gain significant popularity. Even those that did become popular rarely became profitable avenues. Simon Wheeler gives Last.fm as an example that did not fulfil the promise of generating revenue on digital music platforms.

“Last.fm is a great example. They never paid me licence fees. They were always talking about how great they were for the industry and they were working something out and they got sold for 288 million dollars. They never had any licences. Service which purely at the back of music which never had any licences, which promised to deliver over a year, yeah, we have sold some advertisements, we will give you a share of it. Nothing really materialised.”

(Simon Wheeler, Vice-President at Beggars Group, Interview, 1 August 2013)

Up until the end of 2008, multinational entertainment companies were striving to reduce P2P file-sharing activities by any means possible. Not only did these measures prove to be ineffective in abating piracy, their aggressiveness – even going so far as to sue the very people who comprised their largest consuming demographic – sowed the seeds of revulsion towards anti-piracy measures. The repugnance of these measures culminated in pro-piracy activities. Alison Wenham, Chairman of AIM, thinks that this pro-piracy sentiment was used by many users to justify their P2P file-sharing activities.

“I think consumers were retro almost justifying the attitude. It’s easy not to like a music industry. You (music industry) have ripped off your artist, you have treated your artists well, you beat me off during the ‘80s and ‘90s, so you deserve it. So there was certain anger justifiably I think in a way that public receive us. But that was justified after the event. Honestly it wasn’t as complicated as that, I think people did it because they could.”

(Alison Wenham, Chairman of AIM, Interview, 30 July 2013)

Loz Kaye, the leader of Pirate Party UK, denounces the inefficiency of this approach of criminalising piracy and argues that a more practical approach is meeting consumers’ expectations, not suppressing them.

“It has all become pretty much about this one story – this one narrative – and you see how many BPI press releases that had to mention about piracy. If you cannot shut up about it for a minute, it’s just a bit embarrass[ing] for you. You

are missing out on markets there. You have people willing to pay for [music], and I think it is important to also find the technological solutions. Those are both technical and nice music interface. I think that's going to be the thing."

(Loz Kaye, Leader of Pirate Party UK, Interview, 18 May 2013)

However, the recording industry was not likely to change that easily, and was mired in a seemingly endless dark tunnel. None of the industry's attempts to quash the rising tide of piracy proved effective, and new strategies were not immediately apparent. Will Page, Director of Economics at Spotify, clearly remembers this dark phase of uncertainty and doubt, and it appeared that a better torrent technology was the answer.

"I met the maker of that documentary [TPB AFK: The Pirate Bay Away From Keyboard] and he just said something to me which had made hair stand up on the back of my head, which was 'Do you understand what it was in Sweden in 2005, 2006, 2007, 2008?' There were some incredible engineers building torrent tools that nobody could have imagined. So powerful. µTorrent was another one, Kazaa was developed by engineers in Sweden. They were all there determined to build the best torrent pirate facility. They could."

(Will Page, Director of Economics at Spotify, Interview, 6 March 2014)

3) Sweden, the Kingdom of Piracy

In the midst of piracy's golden era, Daniel Ek wanted to produce a breakthrough solution, but not the best torrent technology. Ek decided to build a digital music service, legal and superior to piracy. The birthplace of this company, Spotify, was ironically Sweden, once the Kingdom of Piracy. To understand this, we first need to see why piracy flourished particularly in Sweden. First, Sweden had a good infrastructure of high-speed Internet early on. The Swedish government initiated a plan called "Home PC Reform" in 1998, which enabled households to purchase their home computers through a monthly, tax-free paycheck deduction. 1.7 million people became equipped with new

personal computers, all of which had CD players, allowing people to rip their CDs (Buskirk 2013). The civic disposition for Internet use prompted Sweden to act fast in building fibre-based broadband, which led to a much better Internet use environment than in many other countries such as the UK and US, where ADSL or dial-up was predominant. Based on this infrastructure, Sweden's cold weather facilitated IT innovations even further (Buskirk 2013).

The enormous popularity of P2P in Sweden also meant there was little room for the growth of iTunes.

“Piracy was quite rampant in Sweden. Anyone could download music with very little risk of being prosecuted. So it was the de facto way of getting music - just downloading it from Pirate Bay or other P2P sites. iTunes wasn't as prominent in Sweden at that time, people wouldn't buy singles or albums. They would download music from Pirate Bay and they would put it into iTunes. So, people were using iTunes as a music player but they weren't buying music.”

(Olof Carlson, Product Manager at Spotify, Interview, 25 June 2014)

This created conflict between the culture and the IP regime. As a country that embraced capitalism only at the end of the 20th century, the Swedish people's perception of intellectual property was a result of conflicting ideas between indigenous culture and the normativity reinforced by IP export countries. As Burkitt (2001) pointed out, the “assimilation, justified by Western countries on the premise that intellectual property represents an absolute moral value and irrefutable economic logic is not borne out by the history of copyright in Europe and America.” A good example of this “lack of conceptual cohesion” (Burkitt 2001) in Sweden is that “it has a long tradition of private imports of goods, home brewing, and tax evasion...there is (also) an element of looking up to more culturally resonant countries, such as the United States” (Schwarz 2014, 124). Whereas the popularity of cultural products are largely dependent on fads, making timing essential, the unavailability of some materials through legal channels prompted and perhaps even justified the act of P2P file-sharing (Schwarz 2014).

- Kingdom of Piracy

Sparked by Napster, the fight against P2P file-sharing has been an uphill battle for the recording industry. Up until 2008, IFPI reported declining sales, including the decline of global music sales from \$33.7 billion in 2001 to \$18.4 billion in 2008; P2P file-sharing has been blamed for this loss. And Sweden gained international attention for its role in facilitating piracy. According to the 2005 IFPI press release, Sweden was one of the top five countries, alongside Finland, France, Spain and South Korea, that had been “drastically hit by internet piracy” (IFPI 2005). Sweden was reported to have “the largest number of DirectConnect hubs [P2P facilitators] and the most DirectConnect users in the world” (IIPA 2006). The country’s “notoriety as a piracy safe haven” (IIPA 2006) owes much to two high-profile organisations that originated in Sweden: The Pirate Bay and the Pirate Party. The organisation that inspired the birth of these two entities was Piratbyrå (The Piracy Bureau), established in 2003 to discuss issues related to copyright policy.

Later, this led to the birth of “the world’s largest BitTorrent tracker” (IIPA 2007), The Pirate Bay, which was first run by Gottfrid Svartholm and Fredrik Neij. On 31 May 2006, the world observed arguably the most dramatic incident in the history of P2P file-sharing. The Swedish police raided The Pirate Bay’s office and took away its web servers, presumably pressured by the Motion Picture Association of America (“MPAA”) (King 2007). Following a series of lawsuits, four people involved in running the Pirate Bay – Peter Sunde, Fredrik Neij, Gottfrid Svartholm and Carl Lundström – were found guilty of assisting copyright infringement and sentenced to a one-year prison sentence. They were fined approximately £2.8 million within nine days of the trial. In 2014, Frederik Neij closed the door for arrest of all four members (Jozuka 2014). Despite the Swedish government’s drastic measures and the staggering size of their fines, piracy was not easily abated; in fact, it had the opposite effect. The Pirate Bay flourished, with over a million unique visitors a day in February 2007 following the crackdown (Lewen 2008). The persecution, rather than acting as a deterrent to would-be pirates, galvanised opposition to the establishment and gave birth to a new, politically minded offspring. Piratpartiet (the Swedish Pirate Party; SPP) was founded later in 2006 – and what was once a niche movement became a populist rallying cry.

In 2006, Rickard Falkvinge established the paratpartiet.se website, garnering many new followers in the process; within 24 hours, he collected the 1,500 signatures required to register a political party in Sweden. The SPP is considered to be the world's first Pirate Party, inspiring people to establish pirate parties in a number of countries and US states (Pirate Parties International was founded in April 2010). Some of these national branches have won local council seats, and the German Pirate Party (GPP) now has seats in the Berlin state legislature. In 2009, at the European Parliament elections, the Pirate Party won 7.13% of the vote and gained one seat in the European Parliament (later expanded to two seats as part of EU parliamentary reform).

6.3.2 In Search of an Answer to Piracy

Growing up in the piracy safe haven as a young IT-talented man, Daniel Ek was himself a fan of Napster. Struck by the undeniable attraction to P2P file-sharing, he founded μ Torrent, one of the most successful BitTorrent trackers.

“It was so obvious to me after getting Napster and Kazaa and all the services that this is the way that people want to consume music. And the more I started researching it, it actually turned out that there was half a billion people that consumed music that way.”

(Stanford's Entrepreneurship Corner (2012) “Stanford's Entrepreneurship Corner: Daniel Ek, Spotify.” May 16, Available online at: <http://ecorner.stanford.edu/authorMaterialInfo.html?mid=2964>. (sampled 15 February 2016))

Ek, however, also grappled with the fact that legal digital music services could not find a way to accommodate consumer desires without sacrificing financial legitimacy. It was the period when illegitimate use was better than the legitimate options. Ek continues:

“Musicians were struggling and they can't make money out of music anymore...When we started Spotify in 2006, iTunes still sold DRM tracks...they

were copyright protected songs, [yet] you couldn't play them anywhere. The quality was 160 Kilobits. And at the same time I could go to Pirate Bay or Kazaa and download the same song pretty much as fast in lossless quality and with no protection whatsoever. So it was obvious to me that for the first time in history, the pirated product was actually a lot better than the one you could buy."

(Stanford's Entrepreneurship Corner (2012) "Stanford's Entrepreneurship Corner: Daniel Ek, Spotify." May 16)

The end result of this dilemma was the "disconnect" between the way consumers behave online and the way copyright has historically been regulated. That is, the clash between online behaviour and compliance with legal regulation was conflated with the mismatch between socio-technological change and the legal path (Ginsburg 2001; Vaidhyathan 2001; Lessig 2004; Larsson 2011). Whether it was conventional laws impinging upon society's interests or vice-versa is still an open question. What was clear, however, was that "the friction-free society" (Gates 1996) was in fact rife with friction between the two conflicting approaches of legal and illegal technology. The battlefield of music was in a stalemate where neither side was ready for a compromise or surrender. Will Page thinks this is better understood as an unmet supply than a rampant illegal activity needing to be condemned.

"Music consumption has never been higher, but music monetisation has never been lower. Is piracy kids ignoring intellectual property and undermining copyright laws, or is it demand not being met by supply? And that's quite a taboo question to ask, but if you take the second view of this demand not being met by supply or supply something better."

(Will Page, Director of Economics at Spotify, Interview, 6 March 2014)

1) P2P Heritage

The answer to the digital music industry's impasse was to provide an alternative to piracy. Ironically, a vestige of P2P heritage dominates the narrative in Spotify's early

business endeavours. With a notable contribution from Ludvig Strigeus, a former employee of uTorrent, Spotify's system is modelled after the BitTorrent client system (Palmås, Andersson Schwarz, and Larsson 2014), which it continued to use until early 2014 (Flanagan 2014). The working knowledge of running μ Torrent proved crucial in building cutting edge streaming technology. For seamless playback, Spotify had to reduce the latency, as the delay in playback was the biggest bottleneck in attaining popularity for streaming services before Spotify. Knowing that the P2P network was very efficient for fast and seamless searching and downloading, Spotify integrated a P2P network in pre-fetching the data, and thus resolved this issue (Kreitz and Niemela 2010).

The P2P network was also useful when Spotify needed contents for their beta version of the service. Rasmus Fleischer, a co-founder of Piratbyrån, was once a member of an unsigned band. When the band released an album, they put it out only on The Pirate Bay. As an early adopter, Rasmus Fleischer experimented with the beta version of Spotify. As most musicians would do, he searched for his band's album. Surprised to find that the album was indeed on Spotify, he contacted the company and asked how they had acquired the catalogue. The response from Spotify was simply that they liked the music and wanted to distribute it through Spotify (interview with Rasmus Fleischer, co-founder of Piratbyrån, 18 June 2014).

2) Free

Among all the disruptions Napster brought to the music industry, perhaps the strongest impact was left on users' perception of music. Once exposed to free digital music, users were not easily convinced to go back. The recording industry waged a constant battle against "free" music. The depreciated value of the copyright and the consequent loss of royalties to the artists, the industry claimed, stifled innovation and hurt cultural creativity. This rhetoric continues up until very recently. IFPI Digital Music Report 2013 states:

“It is the ‘free-to-use’ appeal of illegal file-sharing that creates its unfair advantage over legitimate music services, whose cost base, including payments to artists and copyright holders, cannot compete with the free illegal alternative. This, more than any other factor, explains why the growth of an innovative and entrepreneurial legitimate music sector is being stunted in the absence of an effective response to digital piracy” (IFPI 2013).

Despite this assiduous appeal, no digital music service managed to put the genie back in the bottle. iTunes perhaps came the closest, but left many users continue to resort to P2P file-sharing⁴¹. As an alternative to piracy, Spotify provides a free service with an option for an upgrade, known as Freemium.⁴² Sung-Kyu Choi, Head of Global Content Operation at Spotify, explains this background.

“It’s free, and that’s where the main audiences are consuming the music. We see our challenge is to get them into the legal environment. So if you’re in an environment where you don’t pay to get all the songs in the world, and someone tells you ‘Hey, you can get the same song, but you have to pay \$1 per track’, then a lot of people would say, ‘No I actually like it here where it’s free’. So what we had to offer was to provide two products, which is the uniqueness of Spotify. We have the free and the paid.”

(Sung-Kyu Choi, Head of Global Content Operation at Spotify, Interview, 27 January 2013)

However, this was not an easy sell to record companies. As a new company, Spotify did not have enough proof to show that the model would work. Sung-Kyu Choi continues:

“We want to compete with piracy, the vast majority of new users want to try out. So they go to the free service. And the free service needs to have ads to generate revenues. You go to the media service and say, ‘Hey, we want you to

⁴¹ For more discussion on this, see p.137-138

⁴² “Freemium”, a word combining “free” and “premium”, had been around since the 1980s but became popular due to Chris Anderson's (2009) book “Free: The Future of a Radical Price”, signifying an alternative to the free digital economy.

buy our service on our platform.’ ‘So what’s your reach? How many users do you reach?’ And then in the beginning 100? 100,000? Because you were new, you didn’t get to have many advertisements. So in the beginning you’re in a very challenging situation, where you’re having a lot of people in the free service.”

(Sung-Kyu Choi, Head of Global Content Operation at Spotify, Interview, 27 January 2013)

It was a struggle to get users to make sense of this new model, as well. In other words, Spotify had to convince people to pay for music when there were free options. Spotify’s plan for persuading people to convert to premium was to hook users on the service so that they would switch to the paid model. Sung-Kyu Choi explains the concept:

“We want consumers to finally transition to paying users. But to make them become paying users, we have to attract them to our free service below the level. Free service is a mass-market service, apparently because you don’t have to pay anything.”

(Sung-Kyu Choi, Head of Global Content Operation at Spotify, Interview, 27 January 2013)

3) Easy to Use

Being equal is not enough to win a game. In addition to providing a “free” option, Spotify had to offer something better than piracy. Although “free” might be the strongest reason why people are attracted to P2P file-sharing activity,⁴³ it is not the only reason. Daniel Ek drew upon the fact that the primary cause of widespread noncompliance is the far greater ease of use on P2P services compared to their legal

⁴³ IFPI’s Digital Music Report (2009) cites “[a] study by Entertainment Media Research in the UK”, which discovered that 71% of those who admitted they increased their file-sharing activity in 2008 did so “because it’s free”.

substitutes; thus he felt an imperative to bridge this gap. Spotify's answer was to shorten the route to acquiring music by getting rid of the need to download the music.

“We created Spotify to be an alternative to piracy. So what we look at and what we benchmark ourselves against other services that are out there, like Pirate Bay and Kazaa...We actually look at ease-of-use as the biggest single competitive advantage. It was the shortest period from point A to point B that wins. So what we're focusing on with Spotify, it's just making sure that as you go on to the Spotify service, that the shortest point from you getting your music, you being able to share your music with your friends, and you being able to discover music. And if we just solve those three problems, we're in a really good place.”

(Stanford's Entrepreneurship Corner (2012) “Stanford's Entrepreneurship Corner: Daniel Ek, Spotify.” May 16)

Scott Cohen, CEO at The Orchard, affirms that one of the great contributions that Spotify has made is the materialisation of a great user experience of digital music.

“Before Spotify we used to have this thing called buffering. The streaming services sucked. You click on it, it would start to play and ten seconds later it would stop and the wheel would start spinning. With Spotify, we never got that. They developed some really sophisticated technology underneath it. So that moment when you clicked, it plays and it never buffers ever. Just like the user experience with the iPod and the iTunes was brilliant, it was the user experience of the technology of Spotify that was the game changer. They were not the first streaming services. They were not the first subscription service. They were just the first one that worked so seamlessly.”

(Scott Cohen, co-founder of The Orchard, Interview, 7 August 2013)

4) Efforts at Legality

Whereas findings about the motivations behind piracy are bound to vary⁴⁴, few dispute the idea that the general public prefers legal to illegal options. Having witnessed many companies collapsing due to not following the major labels' code, Daniel Ek envisioned that Spotify must be legal (Pollack 2010). In an interview with *Wired* magazine, he says:

“The reason I started Spotify was not because of my love of music. It was because I saw an opportunity to create something that made it easier for people to do the stuff that they were already doing, but legally.”

(Neal Pollack (2010) “Spotify Is the Coolest Music Service You Can’t Use.” *WIRED*, 27 December. Available online at: http://www.wired.com/magazine/2010/12/mf_spotify/all/1. (sampled 15 February, 2016))

What might appear obvious now was not always so, even just a few years ago. Will Page, Director of Economics at Spotify, emphasises the significance of this shift of attention.

“This one guy said, ‘I am going to build the best of all and I am going to get a license.’ It just reminds you for all the bitching and criticism we sometimes receive. Could someone tell me what’s so good about the music industry in 2008? Could someone raise their hand and explain that point clearly to me? Because this one guy says I am going down this road and build Spotify and that’s a true story. When you watch the video [TPB AFK: The Pirate Bay Away From Keyboard] and you watch the mentality of these engineers, to have somebody who says actually I am going to climb the mountain of licensing, get this thing a ticket. It’s huge and I don’t want the history of that chapter to get lost.”

(Will Page, Director of Economics at Spotify, Interview, 6 March 2014)

However, acquiring licensing deals from labels was no easy task for this unknown music company. It was perhaps Daniel Ek’s naivety that drove him to get started, but it would

⁴⁴ See p.103 for this discussion

not have gone further without his ruthless persistence. Neither countless rejections nor outright animosity came close to dampening his determination. He spent many sleepless nights on the street in front of major labels' offices (Stanford's Entrepreneurship Corner 2012). It soon became clear that these difficulties were only the first stage in what would prove to be a very long path. Looking back at the early days of his negotiations with labels, Ek explains how difficult it was to convince major labels to give away their music when the recording industry was still caught up in measures to protect their digital property using DRM technology.

“We started negotiating around early 2007 and we launched in October 2008. So it took us more than one year to get that done. What was so complex at the time was there was really no one that had the type of execution. This was going into the record labels at the time when they still had DRM on iTunes, and telling them to give away all their music for free, against in the future making more money. It's a kind of tough sell. I don't really think that anyone of you should go to a record label with that.”

(Stanford's Entrepreneurship Corner (2012) “Stanford's Entrepreneurship Corner: Daniel Ek, Spotify.” May 16)

A breakthrough came from the crisis. In 2008, the music industry's overall sales were half of what they were in the halcyon years of the 1980s. In Sweden, the situation was even worse. Sweden's failed copyright market opened windows of opportunity for Spotify. There was nothing much to lose. To Per Sundin, Chairman and CEO of Universal Music Sweden, it was an impasse that had to be broken. The downturn of the business had forced him to lay off 200 employees, and the Swedish election debate in 2006 was heated over whether to endorse piracy (Lynskey 2013). The debate convinced Sundin's mother to urge him to make a career change (Lynskey 2013). It certainly was not the peak of his career. He says, “It was terrible. All the newspapers were laughing at us” (quoted in Lynskey 2013). Spotify's technical superiority and willingness to license, which was a rare combination back then, were good enough to convince Sundin to give it a try. After trying Spotify's demo, Sundin urged his team to venture into this model as if life depended on it.

“This is Jesus coming to town! If this fucks up, we’re going to be dead. So let’s go all in.”

(Dorian Lynskey (2013) ‘Is Daniel Ek, Spotify Founder, Going to Save the Music Industry ... or Destroy It?’ *The Observer*, 10 November Available online at: <http://www.theguardian.com/technology/2013/nov/10/daniel-ek-spotify-streaming-music>. (sampled 15 February, 2016))

However, wanting to do something and actually doing it are two different things. Daniel Ek points to two obstacles he had to overcome: first, the industry’s monolithic structure, which is not necessarily conducive to nimble decision-making, and secondly – closely related to the first – the industry’s entrenched infrastructure built around physical artefacts.

“What is really unique about a record label is it’s rarely one person who decides. It’s a group of 20, 25 people, and you can imagine going into a meeting, as Rob [Rob Wells, President of Global Digital Music at Universal Music Group] did, and say, hey, we’re going to start giving away our music for free, where there were record label presidents who might have been 60-70 years old, that have all their life sold physical discs and have just got around the idea to selling it on iTunes for \$0.99 a piece. So it was a tough sell, but we eventually got there.”

(Stanford’s Entrepreneurship Corner (2012) “Stanford’s Entrepreneurship Corner: Daniel Ek, Spotify.” May 16)

How Spotify “eventually got there” is something Spotify has not clearly stated. AK Swedish IT magazine, Computer Sweden, detected hints from a document that Spotify submitted to the Register of Luxembourg for incorporation of the company. Given the fact that the four large majors at that time, as well as Merlin, an independent music licensing agency, already had 18% of shares in Spotify when it was incorporated, the article suggests that Spotify’s licensing deals were traded with the company’s equity for a meagre amount from the labels (Jerräng 2009). The labels’ ownership in Spotify raised a

serious concern that this signified the usurpation of majors' control in the digital music business (Teague 2012; Barr 2013). Although wedding with major labels perhaps was a *sine qua non*, its consequence deserves close attention.

6.3.3 Remediating the Digital Recording Industry

Before its official launch, Spotify had approximately two years of beta version trial in Sweden, which proved to be a great success. Spotify's strategies to appeal to P2P users chimed well with Swedes' needs and their patriotism.

"I think Swedish people are really proud of Spotify and they like that it is a Swedish company. That gave it a very viral impact in Sweden. 'There is this new Swedish company that is up and coming, try it out!'"

(Olof Carlson, Product Manager at Spotify, Interview, 25 June 2014)

In 2008, Spotify's official version finally got off the ground in eight countries in Europe – the UK, Germany, France, Italy, Spain, Finland, Norway and Sweden. Spotify had only just begun, but it already had comprehensive catalogues from both major and independent labels – Universal, Sony, EMI, Warner, Merlin and The Orchard, offering users instant access to a wide range of music choices. Unlike today, where users are swamped with "tyranny of choice" (Mulligan 2014)⁴⁵, this was a time when the number of catalogues held by a digital music service mattered to users.

The user base grew exponentially in Sweden as well as in other markets. In the UK, Spotify successfully enticed two million users within the first year (Bradshaw, Edgecliffe-Johnson, and Tim Mitchell 2009). After a two-and-a-half-year struggle, Spotify launched in the biggest music market, the US, in 2012. Soon enough, Spotify proved they could change the culture of "for the first time in the music industry, it was better to steal than to buy" into a place where people paid for digital music on a large scale for the first time in the digital era. In a few ways, Spotify has made remarkable differences in the history of the digital recording industry.

⁴⁵ See p.189-190, for more discussion on this.

1) Reduced Piracy

First and foremost, Spotify is increasingly perceived to be a solution to the digital recording industry's problems in dealing with and eliminating piracy. A wealth of literature has supported this by providing evidence of the correlation between the increased number of Spotify users and the decrease of piracy (Page 2013; IFPI 2015; Aguiar and Waldfogel 2015). IFPI also acknowledged that "music access" is seen as a compelling legitimate alternative to piracy. Music is bundled with services and devices or offered at no cost to the consumer on an advertising-supported basis. This low "average revenue per user" and high volume approach is seen as one of many hybrid revenue models rather than a single model for the future (IFPI 2010, 5).

Will Page probes whether Spotify contributed to reduced piracy, and finds a strong correlation between decreased piracy and increased Spotify use in the Netherlands (Page 2013). He stresses the significance of this change taking place in the Netherlands: a country synonymous with freedom treats P2P file-sharing similarly to the use of cannabis.

"The interesting thing in Holland is that they've got a very encouraging trend of piracy down, Spotify up, which continues to this day, but piracy is not even illegal in Holland. Their copyright infringement rules are as relaxed as like as cannabis' laws. It's lawful to take a file from an unlicensed site. So we move people from Kickass Torrent to Spotify, not because it is legally or morally wrong, but just because we are better. That's something we didn't prove in that study, but it is a fascinating fact. There's nothing legally saying we should stop doing that."

(Will Page, Director of Economics at Spotify, Interview, 6 March 2014)

Will Page thinks the significance of this change is the fact that a legal platform is positioned as the default music-consuming venue. He continues:

“Eric Garland from BigChampagne, when he did the Radiohead work, called the Internet a venue. So what is your venue? Yours might be Mininova, or a Pirate Bay as where I go I get stuff. It’s like a pub, if you’ve had a bad day at university, you are going to go to a bar in Edinburgh, have a drink, you will text your friends and then you will go home. Nobody bothers you, it’s your business and you leave. That’s what venues are like on the Internet. It’s your business, it’s your space.”

(Will Page, Director of Economics at Spotify, Interview, 6 March 2014)

Olof Carlson, Spotify’s product manager, is also convinced that Spotify not only helps reduce piracy, but even prevents future events.

“If you look at recent reports that are coming out of Sweden, for every year less and less people have tried piracy. So today a lot of youngsters who were the primary perpetrator before the piracy, that generation, the new generation’s youngsters, they haven’t even tried out piracy. They go to YouTube or Spotify to find music and video.”

(Olof Carlson, Product Manager at Spotify, Interview, 25 June 2014)

2) People Paying for Music

The largest acclamation with which Spotify is accredited is its contribution to the shift from the so-called “digital crisis” to optimism for the future. This optimism has grown out of consumers’ ever-increasing attraction to paid music services. There existed a plethora of digital music services before Spotify whose business was based on freemium. Spotify, however, was the first that actually proved it worked in the music business; its 20% conversion rate was indeed impressive. This is a distinct phenomenon that many entrepreneurs have willingly embraced. Simon Wheeler, Vice-President at Beggars Group, has seen waves of digital music changes first-hand right from the outset, and is impressed by Spotify’s outstanding conversion rate.

“They have got a conversion rate of around 20% which is absolutely staggering. Before Spotify come along if anyone had conversion rate above 1%, we were shouting from the rooftop. But for someone to come in and get a little bit of scale, it has got bit of scale now and 20% conversion is, frankly incredible.”

(Simon Wheeler, Vice-President at Beggars Group, Interview, 1 August 2013)

How did Spotify achieve this? Just like other freemium services, it provides distinct features that only premium users can enjoy. The premium service features on Spotify have evolved over the years, but the two most obvious differences are advertisement and offline-mode functions. That is, the premium service frees users from the annoyance of a sudden high-pitched advertisement in the middle of music immersion. David Whittle, Director of User Analysis at Spotify explains:

“Premium is still something that people want, obviously on premium version people don’t have any other advertising, so their listening is not interrupted and on the mobile apps, the premium version allows you to play on demand and own your own music and do other things that you can’t do on the free version.”

(David Whittle, Director of User Analysis at Spotify, Interview, 18 June 2014)

The most enticing feature of all appears to be the offline mode. This is reflected by the increasing uptake of mobile devices; Spotify paid attention to consumers who would pay for premium mobile use. This is a stark superiority that Spotify presented in comparison to P2P. It dramatically reduced the friction in downloading and transferring the files to mobile devices. In conjunction with a reasonable price, this feature proved to be a good incentive for people to convert to premium. This well evidences why the partnership with Telecom companies has been very efficient for conversion. Olof Carlson explains:

“We, Spotify and other companies in the streaming business, have seen that partnerships with Telecoms is very efficient. Up till now you have paid for access to music on your phone. So it has made sense to bundle music service with the phone and phone contract and the Telecoms are usually very aggressive

when it comes to marketing. They are good at marketing, being there where the customers are. So it has made a lot of sense for us to work closely with Telecoms.”

(Olof Carlson, Product Manager at Spotify, Interview, 25 June 2014)

The significance of appeal to smartphone users precipitated Spotify to extend its free listening on mobile phone with limited features in December 2013 (Katz 2013). David Whittle explains that the growth of subscribers since that point indicates the impact of this change.

“Before last December, people used to have to pay for Spotify on mobile devices and so we changed that. And that obviously has changed sort of the nature of relationship between premium and free...It helped us register more people to the service. That’s not the same as subscribers, not the same as the people on premium. But it means that more people have access to sign up in Spotify. There has been a lot of growth since December. Presumably that’s because we are available on mobile.”

(David Whittle, Director of User Analysis at Spotify, Interview, 18 June 2014)

A recent study of users’ perception of the freemium service on Spotify has confirmed that the ubiquity of music listening is one of the most important features that premium users appreciate (Mäntymäki and Islam 2015). Olof Carlson also believes music ubiquity enabled by Spotify is the most appealing way to convert people to the premium service.

“The most effective mechanic that we have is our product itself. And we have a very good free offering that is fantastic which is also now works on mobile. But in the long run, users find out that they love music and they love Spotify. They decided that they want to be able to listen on demand anywhere, they want offline music and they want to get rid of the ads. And that effectively converts them to be paid users instead of being free users. So we have a tremendous belief in our model, how it works.”

(Olof Carlson, Product Manager at Spotify, Interview, 25 June 2014)

3) Foundations of the Future

Spotify might not be the end of the process, but it is difficult to deny that it has made a few marked changes to the future of the recording industry.

-Consumers

What appears to be particularly crucial to Spotify's successful innovation is its efforts to make its technology relevant and attractive to digital music users. Sung-Kyu Choi, Global Head of Content Operation at Spotify, explains Spotify's efforts to find and match what users want.

“We filled the gap for the consumers. They've been shouting about it. In Sweden, for instance, everyone said I download it illegally, but I want it to be legal, but I don't have any good alternative.”

(Sung-Kyu Choi, Head of Global Content Operation at Spotify, Interview, 27 January 2013)

Scott Cohen, co-founder of The Orchard, notes that the significance of Spotify should be viewed in the context of the way technology evolves. He emphasises that technology rarely follows radical ideas but evolves once it has taken on board the many steps of consumers' learning process.

“It was Napster that just took it to another level. [But] people were highly resistant to that. Then you'd begin to get the business models in early 2000. But most of those were kind of Web 1.0 models, which were just like the old world replicated online. It might not be a good business model, but consumers need to be taken through the steps. The early adopters need to take one, two, three steps. You can't just leap from them. Ideas can be revolutionary but change is

evolutionary. We might have had revolutionary ideas but to get people to actually do it, they have to go through steps to get there.”

(Scott Cohen, co-founder of The Orchard, Interview, 7 August 2013)

Cohen proceeds to explain that the crucial element to get to the next level is critical mass, which is what Spotify achieved.

“Once you get enough consumers into the ‘new’ world, then all the new ones can leapfrog and go from listening to a cassette and radio into a fully immersive digital experience where you don’t buy anything and everything is on...Everyone follows it. It just goes right into the ‘New Thing’. You need to get to whatever that critical mass is which most people would say is around 15% adoption rate. Once you get the 15% population to do something, adopt a new technology, a new device, and a new way of purchasing and consuming, you now have enough critical mass that it’s just a matter of time before everyone else comes on forward. And they don’t have to go through the steps that the first 15% went through.”

(Scott Cohen, co-founder of The Orchard, Interview, 7 August 2013)

Daniel Ek confirms that the critical mass Spotify achieved is increasingly embraced in the digital recording industry.

“We proved that the market grew and if you look at it, already now Sweden is one of the very, very few markets around the world that has now actually grown and become larger in the last 2-3 years than it was prior to Spotify’s existence, or even it’s getting back to the place where it was in the heydays of 2001. So we proved that the model worked and that the music industry started growing again in that market and as that happened, it got more of a pull, where more and more markets started wanting us.”

(Stanford's Entrepreneurship Corner (2012) "Stanford's Entrepreneurship Corner: Daniel Ek, Spotify." May 16)

What this signifies is the beginning of a shift in power balance in the digital recording business. The elusive nature of the audiences' fickle taste has always given a considerable power to consumers to influence the popularity and commercial success of songs. Nonetheless, power has been skewed toward the recording companies rather than consumers. The control of distribution networks created in the conventional settings enabled the recording companies to wield considerable power over the music to which people listened and the price they charged for what they had to offer. Napster and its progeny empowered consumers to withhold their willingness to pay. The arrival of Spotify's business model as a solution to the industry's struggle to find a commercially viable digital music business, which became possible only by appeasing consumers' needs, underpins the shift of power balance in the digital recording industry. This shift of balance in power relations continues as the streaming business matures. This will be discussed at length in Section 6.3.4.

- The Genie Going Back

In 2008, when Spotify was officially launched, music sales began making a comeback. According to IFPI's annual report, the streaming-based business model propagated by Spotify was "the single most important development" (IFPI 2009, 4). In 2009, "for the first time, more than one quarter of record companies' revenues came from digital channels" (IFPI 2010, 19), but "the increase in the music industry's digital sales" was reported as "not offsetting the sharp decline in sales of physical formats" (IFPI 2010, 10). The year 2012 was heralded as the music industry's "best year-on-year performance since 1998" (IFPI 2013).

As the fastest growing access-based music service provider, Spotify began creating buzz around "ownership replaced by access". This marked the overturning of the decade-old predominance of a-la-carte download, which had remained the largest revenue source. Kobalt Music made this official by announcing that royalties from Spotify had outstripped those from iTunes (Kobalt Press Release 2014). Whilst the report is based

on the income generated from publishing royalties, the finding can clearly be seen as a shift from download to streaming, or from ownership to access model. What is significant about this change to the mode of enjoying music is that it enabled late adopters to get onboard and brought copyright back into motion. In 2014, Plácido Domingo, Chairman of IFPI, announced, “Copyright provides the basis of the modern digital music marketplace. Confidence in copyright enables rights holders to license exciting new services that music fans love” (IFPI 2014, 4). The full implication of this change remains to be seen. After 15 years of trial and error since Napster, however, it is becoming increasingly clear that Spotify is putting the “free music genie” back into its bottle, and has opened up a new era where digital music platforms allow copyright meticulous monetisation of every instance of music listening (Burkart and McCourt 2006), but in a new economy.

6.3.4 From Streaming to Mainstreaming

Spotify is often hailed as the company that realised the digital music era’s dream of ubiquitous access to an unlimited choice of music known as the “Celestial Jukebox”⁴⁶. The underlining presumption is that lifting the limit on music access would lead to the cultivation of cultural creativity and diversity (Mann 2000). As an increasing number of consumers began to enjoy unprecedented access to music, the presumption proves to have missed a crucial aspect of music consumption. While people’s music taste is complicated and immensely diverse, the majority of people who listen to music need to be told the music to which they should listen. The digital music discovery is still nascent and has just begun to envisage music consumers’ needs. Faced with the ancient and freshly emerging demands from consumers, digital music services are morphing from a mere music library to a medium for mass market. This evolution may be best described through the developments in Spotify’s music sharing and discovery features.

1) Search and Social Sharing

⁴⁶ For more discussion on “Celestial Jukebox’, see p.98-99.

As discussed above, Spotify's beta version was modelled after P2P file-sharing websites and its distinctive footprint could be found in the search feature⁴⁷. Just like all P2P websites' interfaces, the only function provided on Spotify was a basic keyword search function. It was based on the assumption that Spotify users already knew which tracks they wanted to hear, just as P2P file-sharing users had a general idea of what they wanted to download on file-sharing websites. Olof Carlson explains this background:

“When Spotify started out, what it had was really a search box where you could input your search query and you could find any music in the whole world. At that time, that was what made Spotify successful, because it was a huge experience superior to what piracy would offer and also embedded in iTunes. You could search for anything, and you didn't always search for songs in your library. That became a huge success especially in Sweden where people were very used to Pirate Bay, where people were used to having music in the computer and searching for it. You could create a playlist which was the concept people was used to.”

(Olof Carlson, Product Manager at Spotify, Interview, 25 June 2014)

For music discovery, Spotify relied on peer-sharing. Describing sharing as “the golden path” (Bendz 2008), Spotify released “collaborative playlists” in January 2008, enabling users to share playlists with other people. The early Spotify, concerned mostly with winning the hearts of P2P users, had not yet tapped the mass market. Spotify assumed that its targeting audience already knew what they wanted to hear, and that the organic mechanism of sharing music with their peers would be enough to quench people's music discovery thirst. This assumption is well manifested in Daniel Ek's interview with *The Guardian* (Dredge 2012).

“Spotify is great when I know what I want to listen to, but not so great when I don't.”

⁴⁷ See 6.3.2 section 1)

(Stuart Dredge (2012) “Spotify’s Daniel Ek: ‘We Want Artists to Be Able to Afford to Create the Music They Want to Create.’” *The Guardian*, December 6, Available online at:
<http://www.theguardian.com/technology/2012/dec/06/spotify-daniel-ek-interview>. (sampled 15 February, 2016))

2) Music Recommendation and Third Party Apps

Soon after Spotify’s official launch, its user base grew meteorically. More than just P2P users began using the service. The number of catalogues also increased as an increasing number of labels and artists joined together to put their albums into this new avenue of digital music consumption. The expanded user base and exponential music library prompted Spotify to make technological advancements in music discovery. Under the name of “Discover”, Spotify offers personalised recommendations based on previous tracks to which a consumer has listened and to which other people with similar tastes listen.

No matter how well-contextualised its mechanism might be, however, it soon became evident that algorithm-based music recommendation hardly suffices when fathoming people’s complicated taste in music. Contrary to the belief that sharing music with peers on a digital platform would be a panacea for music discovery, the “word of mouse: promotion and recommendation on digital networks” (Young and Collins 2010) simply was not enough. Spotify decided to resort to existing expertise in this field. On 30 November 2011, the company presented a new plan to enhance music discovery by providing a platform where third party developers could build music applications and integrate them with Spotify (Ek 2011). By bringing together important music discovery media, such as Guardian, Pitchfork, Rolling Stones, Last.fm and concert management services such as Songkick within its platform, Spotify removed the many layers of steps involved in finding new music and adding it to a collection. Instead of buying a magazine or finding an article online, searching the catalogue on music websites and purchasing or downloading it, all Spotify users have to do is drag and drop. Later in 2014, Spotify stopped adding new apps due to the difficulty of the monetisation of third party apps (Constine 2014).

3) Browse (Playlist) and Spotlight

- Browse (Playlist)

Soon, Spotify took on the role previously held by third parties. The change was partly sparked by “Daisy”, a streaming music service with a curatorial focus and urban lifestyle aesthetic, which had emerged as a competitor to Spotify. It caught the attention of Dr Dre, an American record producer and rapper, who staked a significant investment in the fledgling service and renamed Daisy “Beats Music” to capitalise on the already well-established branding of his wildly successful Beats headphones. Beats Music aimed to challenge its competitors by providing a solution to “a problem that most music fans may not realize they have: deciding what to listen to” (Sisario 2014), a refined music discovery platform based on the combination of algorithm and expert music suggestions. This novel approach indicated the digital recording industry’s transition from music accessibility to music curation as a means to increase both consumption and brand loyalty. As other digital music service providers joined forces to provide a large number of catalogues, Spotify’s exhaustive database was losing its uniqueness. Beats Music has chosen a timely moment to distinguish itself as a trusted tastemaker.

A more important push for a change came from within. The smash hit of Spotify expanded across countries and generations. The service’s popularity was well on its way to mass market. Becoming a “Mainstream Music Player” (interview with Drew Lam, Label Relations manager at Spotify) means courting the majority of the consumers, and most people are not “music omnivores” (Peterson and Kern 1996) who appreciate the diverse choice of music. Drew Lam describes most people as “passive listeners” who like their choices to be made for them rather than seeking out their own music choices.

“Most people in the world are passive listeners. They don’t actively seek new music. They do not read music blogs. They hardly listen to radio. They don’t read music magazines. They don’t share music and they like being spoon-fed. What they are listening to just so happens because they are listening to it with

their mom on their way drive home and then they are like, ‘Oh, I like that song.’”

(Drew Lam, Label Relations Manager at Spotify, Interview, 8 August 2013)

As its user base grew, Spotify realised that most users wanted their music choices to be presented to them. Olof Carlson explains:

“As the market is growing and more mainstream users, if that’s what you call [them] are coming in to streaming, into Spotify and they don’t have the same drive to search music. They want it to be presented to them, with less friction and at least that’s one hypothesis that we have. So then we felt that we needed to create, we have to reduce friction while still increasing the quality of music recommendations that you get.”

(Olof Carlson, Product Manager at Spotify, Interview, 25 June 2014)

The product development team took note that playlists play a vital role in building an emotional connection with the service. Spotify set out to provide playlists curated for different genres and moods. Carlson says the popularity of this service, labelled “Browse”, underpins that this is what the users wanted.

“It was very quickly apparent that it was something that the users really liked and they want to be able to find music quickly that suits a specific mood for example. And with ‘Browse’ they know that Spotify curators have spent a lot of time to make sure that it is the right mix and that it is quality music. And it has become a service that [you] can’t even imagine Spotify without today.”

(Olof Carlson, Product Manager at Spotify, Interview, 25 June 2014)

Behind these improvements in music discovery was the realisation that infinite access does not diminish the need for tastemakers and gatekeepers. Unlimited access to music can bring tremendous benefits for digital music users who seek out diversity in music

choices. However, it is often at odds with the average consumer's reality of limited time and attention. Spotify pays special attention to understanding better what users want. Through data analytics, combined with qualitative analysis of users' listening behaviours, Spotify came to the realisation that not many of its consumers were tapping into the great potential of the celestial jukebox. Furthermore, peer-sharing was not as widely used as expected. David Whittle explains:

"I think there is a minority who really use it heavily as a discovery tool and as a consequence discover a lot [more] music than they used to because they are able to go through large volumes of music and sample and they can decide they want it or not. But that's a very minority activity. We don't see that spreading out to the mainstream. One thing you might expect with streaming is that it is easier to share music legally, but we don't see a huge amount of that. That may be because we haven't designed it well, [and] it is not very easy to share music on Spotify."

(David Whittle, Director of User Analysis at Spotify, Interview, 18 June 2014)

One explanation of this is most people's tendency to listen to familiar songs⁴⁸. Donovan Sung, project manager of Discover at Spotify, says that most Spotify users are not 'power users' who want to explore diverse music choices (Smith 2014). Although music discovery is not exclusively for lean-back listeners, so far, they are the best beneficiaries.

"We've actually found that a lot of music discovery sessions aren't about listening to new music; they're actually about familiar music or things you've played recently. Music discovery, in the case of discovering new things, is not a super main use case for most users; those are the power users who want to hear every indie band they haven't discovered yet. There are ways for them to do that beyond Discover."

⁴⁸ This was observed in the development of Top40 playlist (Frith 2002).

(Chris Smith (2014) “How Spotify, Netflix and Amazon Control Your Online Habits.” *TechRadar*. January 18. Available online at: <http://www.techradar.com/us/news/internet/how-spotify-netflix-and-amazon-s-powerful-discovery-tools-control-our-habits-1216211>. (sampled 15 February 2016))

While it is being proved wrong that accessibility autonomously produces diversity, it would be equally misleading to deny the impact of increased access on the music listening experience. Spotify’s diverse playlists help people discover unknown music as well. Olof Carlson says:

“We create lists that contain the top hits and those lists are so immensely popular because people recognise that music but we also have playlists containing music that no one has heard about and which people still love. [As of June 2014] ‘Your Favourite Coffee House’ is the most popular playlist on Spotify [and] almost becomes its own brand. So people trust that and people know that the music that is coming out of this playlist is something that I will enjoy.”

(Olof Carlson, Product Manager at Spotify, Interview, 25 June 2014)

Data analysis of these playlists suggests that Spotify could be in a very good position to facilitate popularity of songs. Carlson explains:

“We are able to drive, we are able to make music that no one has heard about. We have been able to make that music very popular. So people subscribe to that list and they listen to it and they really love what they are hearing.”

(Olof Carlson, Product Manager at Spotify, Interview, 25 June 2014)

David Whittle thinks this is akin to the conventional gatekeeper.

“We have so much knowledge at our disposal. It is very easy for us to put things up for people and say, ‘Hey, maybe you like this’. In some ways, we are like a record shop used to be 20 years ago.”

(David Whittle, Director of User Analysis at Spotify, Interview, 18 June 2014)

Armed with top-notch editors, meticulous attention to data, and a spectacular user base, Spotify can be a crucial part of the mechanism of a song rising above the noise. So on what criteria does Spotify rely when creating playlists? Reflecting on the lessons they learned from algorithm-only music recommendation, Spotify now combines both tastemakers’ experts and the data. Olof Carlson explains:

“We use our curators’ own knowledge of music and their own gut feeling. And we combine that with our internal data. Our music is tagged using different criteria. So combining those two has shown to be very successful and we can see that in a playlist. Users skip a certain song or if they don’t want that in it, then we can make adjustments to the playlist. And we can even make it better.”

(Olof Carlson, Product Manager at Spotify, Interview, 25 June 2014)

- Spotlight

Spotify’s position as a new breed of gatekeeper is even more enhanced through its acquisition of a music intelligence platform company, The Echo Nest (Spotify 2014). Founded in 2005, The Echo Nest was based on the PhD dissertation of Tristan Jehn and Briann Whitman, who studied at MIT. Though its basic mechanism is derived from algorithm-based music recommendation, its system moves beyond simple recommendation and aims to provide music catering for each individual, combining all the information that consumers put into the music service.

This acquisition has indeed improved the quality of playlists. A more significant result, perhaps, is Spotify's newfound position as a hit-maker. Lorde, a 16-year-old New Zealand singer-songwriter, is one of those who rose to stardom overnight through Spotify. Will Page explains how Sean Parker's⁴⁹ playlist on Spotify brought Lorde this instant stardom.

“Here's the streams from Spotify from 19th of March to 16th of April...What happens on the 2nd of April? So this is not a radio plugger or PDs, promotion department, this is just drinking a coffee, like that song, put it on my playlist and he [Sean Parker] has 850,000 followers to that playlist. Pretty mad, no? So much so that by the 2nd week, she got to number two in the US viral chart. Crazy, for a 16-year-old girl in New Zealand.”

(Will Page, Director of Economics at Spotify, Interview, 6 March 2014)

Spotify, as a platform for breaking artists, has in fact already experimented in the market through a service called “Spotlight”: a feature designed to break emerging artists and help users discover new music (Katz 2014). Spotlight, however, is not without criticism. Some have pointed out that possible influence from the labels contrasts with Spotify's aim to help break unknown artists (Peoples 2013; Dredge 2013a). Considering that being featured on Spotify's Spotlight is almost analogous to “winning a lottery” (Peoples 2013), Spotify is increasingly positioned as a launching pad for certain songs or artists chosen by Spotify's own purview. The full implication of whether this will serve to break new talent or to feed vested interests is yet to be seen.

6.3.5 Puzzles Created by Spotify

(1) Dissonance with Artists

⁴⁹ Co-founder of Napster. He negotiated licensing deals with Warner and Universal on behalf of Spotify for its launch in the US and now serves as a board member for Spotify.

Although Spotify managed to win the favour of both consumers and labels, resistance still persists from the artists' side. This issue was magnified in the wake of one celebrity's vociferous critique. Thom Yorke, a member of Radiohead, denounced Spotify as "the last desperate fart of the dying corpse", and removed his album "Atoms for Peace" from the service in July 2013 (Dredge 2013b). David Byrne, lead singer of the American band Talking Heads, raised a more fundamental question: the sustainability of the model. His argument was that if the current cheap streaming music service continues to be the prevailing mode of music consumption, it will lead to inappropriate compensation for artists. Therefore, "[t]he inevitable result would seem to be that the Internet will suck the creative content out of the whole world until nothing is left" (Byrne 2013). Zoe Keating, an unsigned cellist, emphasised this point by publishing her income. In the spreadsheet she shared, she reported 92% sales from streaming service, out of which Apple's iTunes earned her most of her revenue; this confirmed a miniscule pay-per-stream \$0.0044 payout from Spotify.

When all these criticisms were directed at streaming services, especially Spotify, artists from Sweden, the birthplace of Spotify, pointed their fingers somewhere else: at record labels. The Swedish Musicians' Union claimed that record labels, while benefiting from the new surge of revenue from digital music services, had not distributed a fair share of the royalties to artists. Agreement came from Billy Bragg, a British musician. He argued, "Artists have identified that the problem lies with the major record labels rather [than] the streaming service and are taking action to get royalty rates that better reflect the costs involved in digital production and distribution. UK artists would be smart to follow suit" (Dredge 2013c). Billy Bragg reiterated this point at a debate on "The Artist Economics Of Streaming" organised by the Music Tank in London on 7 April 2014. In this debate, he argued that artists seldom see benefits from the significantly reduced cost and risk in the music business. One way to correct this issue, he suggested, is a fairer share of revenue, i.e. 50:50.

Spotify responded with a detailed description of the way they distribute their revenue to rights holders (Spotify 2013). In essence, Spotify's position is that their service created a fertile ground to generate revenue from a digital music business that had been plummeting ever since the advent of Napster. 70% of their total revenue goes to the

rights holders. Spotify argues that however miniscule they might be at the moment, artist earnings are very likely to increase, considering that the streaming business has only just begun and has great potential for further growth. The supporting evidence for this optimism, Spotify suggests, is that (1) Spotify's premium users spend twice more than the average annual spend on music and (2) as a nascent service that has only 24 million users – YouTube has one billion users and iTunes has 575 million users – Spotify pays out at least twice more than other services. If Spotify grows to 140 million users with 40 million paying subscribers, the total payout to artists will increase fivefold.

Despite the continuous rise in the total sum of royalties that Spotify pays out, there is little sign of improvement in the clashes between Spotify and some artists. Through a so-called “windowing” strategy, some artists who are not happy with the new mode of royalty distribution have pulled their albums from Spotify. Taylor Swift is one of them. The American singer-songwriter withheld her 2014 album “1989” from Spotify, arguing that Spotify's meagre payout was not enough for her work of art (Dickey 2014). The Spotify chief responded that Spotify was an answer to piracy, and therefore, proper remuneration for artists was one of its key aims (Ek 2014). He also stressed that it is a myth that Spotify pays little, and that in fact, Swift was on track to earn \$6 million from Spotify. It is debatable what the best way would be to generate the maximum value from Swift's work of art – selling more copies of albums at the risk of losing some through P2P downloads or generating per-play revenue from Spotify and perhaps selling fewer downloads or copies. Later, in June 2015, Taylor Swift raised the same issue with Apple Music right before its launch, but quickly put her album back on this streaming music service upon Apple Music's apology. Why the artist has chosen one out of two seemingly similar business platforms remains unanswered. Some argue that this was less about royalties for streaming than a win-win promotion both for the artist and Apple Music (Bajarin 2015).

“Windowing” is not a digital phenomenon. Its history traces back to the 1920s, when musicians' unions held back their music as an act of “boycott” of the “free use” of their music in what was at that time a novel medium, radio broadcasting (Peacock and Weir 1975, 71). Whether this dissonance between Spotify and artists will turn out to be temporary depends on whether Spotify could rise to a medium where artists are

desperate to plug their albums. In other words, its fate might rely on the way whether Spotify manages to achieve economies of scale and rise to the stature of radio. While the future remains elusive, it seems clear that the problem is rooted in its striking lack of consideration for artists in the actual development of the business.

(2) The Paradox of Celestial Jukebox

The quintessence of Spotify's reputation, hailed as "the future of the music industry", lies in its solution to the industry's struggle to make people pay for music. Spotify's answer to the industry's financial ailments was large-scale access at low cost. Despite its great success, the subsequent growth has provoked some to question its sustainability. The celestial jukebox we have now came at the expense of decreased pay-per-person music consumption. To make the current model sustainable, the scale of economy has become the key. The paradox here is that there is an inverse correlation between the expanding volume of available content and the diminishing attention span of its potential audience. While the celestial jukebox is generally regarded as a boon to world culture, it appears to pose a new challenge: does the ubiquity of music dilute consumer loyalty? Whereas the contemporary music industry is preoccupied with increasing royalties from digital music services, creating an environment where consumers can be loyal to artists is perhaps ultimately crucial for future sustainability. Is the current recording industry conducive to cultivating consumers' loyalty to artists? The answer might lie in how people discover music.

As Spotify is morphing from a streaming service to a mainstreaming one, it is increasingly positioned to exercise influence over consumers' choices and to become an essential route to stardom. Amidst the digital convergence, the resurgence of market control poses a significant danger to harnessing cultural diversity and creativity. In other words, the solution to unravelling the digital riddles could bring back the very problem digital technology was hoped to overturn: control and commercialisation. Allowing such market control to continue would carry the risk of the industry's hard-won digital music listening platform becoming a tollbooth through which copyright meticulously monetises every instance of music listening (Burkart and McCourt 2006), but does not, in turn, foster innovation.

6.3.5 Conclusion

Through Spotify's case, we demonstrated the processes involved in building a commercially viable business model in the digital era. Spotify's streaming service model aimed to provide a better solution to piracy and successfully realigned conflicting interests. The case demonstrated that Spotify's solution appeased two major players – major labels, who were making efforts to maintain market control through copyright licensing, and digital music users, who were able to enjoy a wide breadth of music at the cheapest price possible. As its user base grew, Spotify's main business evolved from a simple digital music search destination to a tastemaker. Although this solution is increasingly perceived as an answer to the industry's struggle over ways to reduce piracy and make people pay for music, it has also created puzzles such as debates over artists' earnings and paradoxes of unlimited access to music.

6.4 Chapter Conclusion

The case studies unfolded in two view points of the industry. The INgrooves case illustrated detailed mechanisms involved in the reintermediation of the industry in the level of the digital music distribution networks. Spotify case demonstrated a process of how Spotify arrived as a solution to a set of problems posed by digital technology. Though the two case studies relate to two different layers of the industry, the study observed that both case studies demonstrate that the initial state of digital disruption did not in fact spell the end of the power of the major labels and existing entrenched power. In other words, business structures in the recording industry did not simply follow the technologically deterministic vision predicted. Spotify's case illustrates that the major labels bought their way into some control over Spotify in return for releasing some of the licensing power they retained. Likewise, INgrooves case demonstrates that the major labels buy their way back into the new digital distribution intermediary structures.

7. CONCLUSION

7.1 Understanding Digital Disruption in the Recording Industry

The prelude to this study was the widespread perception that digitisation and the dematerialisation of cultural content undermined the existing methods of trading music embedded in physical artefacts and opened up the possibility of distributing content over the Internet. The arrival of Napster, the first popular digital music service based on P2P file-sharing technology, stimulated widely-circulated predictions of a seismic shift in the digital recording industry. Though there was consensus that the industry was embarked upon far-reaching change was little agreement about the nature and implications of these changes; the various conflicting interests involved in music networks articulated competing visions of technology-induced change. On the one hand, many media accounts and academics produced a utopian vision of the industry. John Perry Barlow (1994, 1996) argued that the mechanism of Intellectual Property Law would no longer exist in the digital world. Nicholas Negroponte (1996) proclaimed that copyright law as a Gutenberg artefact would dissolve in the new mode of cultural production and therefore level the mass media playing field. It was believed digital technologies would serve to bring about the demise of the conventional recording industry and the end of the copyright regime (Kelly 1998; Shirky 2001; Alderman 2002; Ku 2002; Knopper 2009). For example, Alderman (2002) described the digital recording industry as “struggling to maintain control and remain relevant”, and said:

“The big-record-label-dominated music business that developed in the last century is now under assault by successive waves of young techies such as Napster’s Shawn Fanning and Gnutella creator Justin Frankel and their tsunami of followers. These arbiters of innovation share several traits, namely technical ingenuity and priorities that fall polar opposite to traditional business...Technology brings power, and the level of technology now in the hands of individuals will present challenges to everyone with a vested interests in the status quo.” (Alderman 2002, 1–2).

Their argument was that the decreased costs involved in music recording, combined with the ability to create a perfect duplication of music files at zero cost, would shorten the value chain in the recording industry by diminishing the roles of intermediaries or rendering them redundant. The dematerialisation of cultural artefacts has been heralded as the end of copyright: the possibility that artists can retain copyright over the sound recordings with higher returns and greater control over their works would undermine the control that is in the hands of a few major recording companies.

New opportunities such as lowered barriers to entry, including cheaper and more powerful tools of music production and dissemination, would level the playing field (Théberge 2001; Bakker 2005). Peer production would reverse the long-lasting trend of the pre-Internet era typified by capital-intensive production and centralisation of information (Benkler 2006). Non-proprietary production would offer the opportunity to shift the conventional methods of production, distribution and consumption of cultural products. The unlimited access to music known as “Celestial Jukebox” - through which music fans can enjoy an immeasurable scope of music choices, combined with peer review and viral impact on the Internet – would help music fans discover lesser-known or unknown music and therefore contribute to achieving a better cultural context where a diversity of music choices could flourish (Mann 2000; Pasquale III, Weatherall, and Fagin 2002).

On the other hand, the notion of a terminal crisis was formulated largely by the recording industry. The technological possibility of the ease of duplication, in conjunction with large-scale distribution of free music through P2P file-sharing networks, was perceived as a great challenge to the conventional recording music business practices of granting exclusive rights to copy. Decrying the possible change as a threat, the recording industry created the rhetoric of “digital crisis” to describe the economic downturn of the recording industry. The primary evidence supporting this argument was a decline in record sales, with P2P file-sharing often cited as the main cause of the sales loss. Denouncing all kinds of P2P file-sharing as “digital piracy” or “copyright theft”, the recording industry created the rhetoric that “piracy kills the industry”. They contended that piracy damages the fiscal soundness of the industry as a whole, making record companies unable to continue creating music for the public. The

decline of record sales, therefore, was frequently equated with harm to artists, musical experience and cultural creativity. For example, the Recording Industry Association of America (“RIAA”) asserted,

“While downloading one song may not feel that serious of a crime, the accumulative impact of millions of songs downloaded illegally – and without any compensation to all the people who helped to create that song and bring it to fans – is devastating” (RIAA 2007).

Both views, however, offer an essentially techno-centric vision, which focuses almost exclusively on P2P distribution and its consequences when explaining how music was traded/valorised and infers from this a radical transformation of the industry. This thesis presents some steps towards mapping out the actual process of change. It explores the recent history of digital music and examines changes in real time as they were unfolding. This proximity has allowed detailed insights, though this may be at the cost of analytical distance. The study seeks to overcome this potential shortcoming by addressing developments from a number of viewpoints in the sector, through which a set of heuristics in different settings allow us to explore the technological development over multiple locations (Pollock 2009; Hyysalo 2010; Williams and Pollock 2012).

The early history of the digital recording industry reveals the complex responses of the key established players: the major labels. On the one hand they reacted defensively, resisting new forms of distribution and seeking to reassert prior forms of copyright. On the other hand, as we see later, they also sought to ensure that they were not displaced by new forms of digital distribution. In an effort to maintain their long-established business structure, major labels employed diverse strategies such as lobbying for stronger copyright enforcement and development of DRM technologies (Hesmondhalgh 2006; Burkart and McCourt 2006; Cummings 2010; Rogers 2014). Alongside these attempts to stigmatise and criminalise P2P, the major labels also sought to develop their own digital music services. The subscription business model for a limited number of streams, incomplete catalogues and restricted usage left a large gulf between market affordances and digital music users’ demands for new digital music consumption.

However, not all players resisted the digital changes. Independent labels, which did not have as much to lose, embraced the new opportunities. Some independent labels tried to commercialise Napster. A group of organisations representing independent labels' interests, such as IMPALA and AIM, struck a deal to use Napster's repertoire, enabling consumers to listen to diverse independent music legitimately and compensate artists at the same time. However, this project did not materialise, not only because Napster's domestication was mostly in the hands of a few recording companies (Spitz and Hunter 2005) but also because there was a fundamental lack of supporting assemblies: large-scale infrastructure for digital music transactions was not ready, and Internet connection was still an issue in many countries.

When the change happened, as often seems to have been the case in the history of the recording industry, the key breakthrough was made by a technology firm, in this case Apple. As a computer manufacturing company, Apple wanted a music service to promote their portable media player, iPod. Apple developed a media management application called iTunes and created a gateway to consume music on a legal platform. Its innovative approaches, such as a-la-carte download options and seamless integration with music playing devices at a fairly low price, proved to be an alternative model for a commercially successful music business. It allowed labels to generate revenue from digital music, enabled users to consume music legitimately at a lowered price and gave more opportunities to independent musicians to distribute their music online. However, this was not the final stage in the process: although it addressed the recording companies' concerns, a large proportion of digital users who had been exposed to the free option remained unwilling to pay for music.

iTunes' model proved to be insufficient in undercutting piracy, and left a space for experimentation with new models, most of which were geared toward providing a free service⁵⁰. Among much experimentation, this study looked at two popular digital music services, Last.fm and YouTube. Both services offer free access to a large number of catalogues based on an advertising model and faced challenges of copyright licensing deals with major labels. The way they dealt with the challenges changed the fate of their

⁵⁰ For more discussion on this, see p.137-138

development path. Last.fm closed down some of its popular features to avoid paying hefty licensing fees to the labels and its popularity began to wane. YouTube took a more compliant approach by adopting measures to enhance the legitimacy of the service, such as Content ID and reaching agreement with major labels. YouTube continues to be a popular digital music service.

In a situation where major labels' power in maintaining control over legitimate digital music services persisted, the friction between the market response and digital music users continued. The entrenched market created around physical sales also remained unresolved. Two possibilities could have resolved this issue. One was the network effect enabled by P2P file-sharing which, in principle, could create sufficient additional value for artists so they could pursue their professional careers without having to rely on intermediaries.⁵¹ The network effects of P2P file-sharing or the sharing economy, however, is increasingly perceived as one of the options available to artists rather than as a new channel to replace the pre-existing system (Galuszka 2012; Rogers 2013; Reia 2014). Another way is to build the commercial viability of a new technology that could achieve a critical mass (Graham, Spinardi and Williams 1996). No business model has been able to achieve this, largely due to a lack of understanding of how to match new technical capabilities to digital music users. In the digital recording industry, it was compounded by the conflicts between major labels, who wanted to extend their market control and consumers, who withheld their willingness to pay for music.

Spotify's solution to this market entrenchment was to offer large-scale access at low cost, which appeased both labels and consumers. By configuring changing users' requirements and realigning multiple visions and interests, Spotify appears to offer a solution to the industry's dilemma of how to make people pay for music. The company, however, also posed a few paradoxes to make this business sustainable. Spotify's licensing deals were traded with the company's equity at a meagre amount from the labels (Jerräng 2009). Labels' ownership in Spotify raised a serious concern that this signified majors' usurpation of control in the digital music business (Teague 2012; Barr

⁵¹ Gayer and Shy (2006), Oberholzer-Gee and Strumpf (2007) and Zentner (2006) discussed the way that the network effects of P2P file-sharing as a promotion and discovery tool can create sufficient additional value in the market.

2013). Its lack of consideration for artists' commercial gains also left Spotify embroiled in debates on inadequate remuneration for artists.

A significant reconfiguration was also observed in digital music distribution networks. The arrival of iTunes spawned a new breed of intermediaries, digital music aggregators, to solve unexpected problems arising in the digital era: large-scale digital music transactions required middlemen between digital music services and independent labels. Digital music services dealt with major labels directly, but could not reach out to thousands of independent labels by themselves. Likewise, independent labels had neither sufficient funds nor knowledge to build a digital music distribution infrastructure. iTunes' platform, which allows traditional bargaining power stemming from marketing and promotion, has been criticised for having created the entry barrier needed for major labels and rebuilt the walls broken down by digital technology (Arditi 2014). As the digital transaction volume increased, major labels' distribution systems began to break down. This unexpected problem opened windows of opportunity for digital music distributors. Independent distributors' nimble approach proved to work better in the digital environment than majors' monolithic approach.

- How did the social shaping of technology operate in the context of disintermediation/reintermediation?

The debates over the disintermediation of digital technology in the recording industry so far have fallen within the ambit of the dichotomy between utopian and dystopian understandings of the industry. Focusing on either the challenges or the opportunities imposed by technologies, such views often ignore the diversity and heterogeneity of the actors involved in the innovation process and the way their enrolments play out in the development of technology. In bridging this gap, this research drew upon the two STS approaches of Social Shaping of Technology (MacKenzie and Wajcman 1985; Williams and Edge 1996) ("SST") and Social Learning in Technological Innovation (Sørensen 1996; Williams, Stewart and Slack 2005). SST offers a valuable framework to move beyond technological determinism and unpick the social processes involved in innovation. By adopting a broad church approach, SST emphasises a multifaceted intertwining of choices involved in designing and developing technologies in

heterogeneous networks. As an extension to SST, the Social Learning framework examines the gradual improvements of technological changes that arise over time, and focuses upon the reflexive efforts of factors involved in the development of technologies. Drawing upon concepts such as “learning by doing” (Arrow 1962), “learning by using” (Rosenberg 1982) and “learning by interacting” (Sørensen 1996), the Social Learning framework highlights the ways in which technological developments are not immediately apparent, but must be discovered in the course of making technologies work in the market.

Of central importance to the Social Learning framework is the users’ appropriation or domestication of technologies through the process of tinkering and finding meanings of technologies. Radical technological change would both allow very different ways of meeting user needs and lead to the creation of new markets. The gulf between people’s everyday use of digital technology and the supply creates uncertainties about which product will be attractive to consumers and thus be commercially viable. The concept of “innofusion” is crucial to understanding how innovation continues in the process of an artefact being appropriated and domesticated (Fleck 1988). It highlights that the ultimate power remains with users in making choices and finally ensuring that a technology is adopted in the market. Therefore, a technology has to be encultured in a particular circumstance during the process of consumers making sense of it (Lie and Sørensen 1996; Silverstone and Hirsch 1992). The proliferation of trial and error and the struggles that digital music companies experienced in the course of matching and discovering digital music users’ constantly changing demands highlight the crucial role that users play in the technological innovation of the digital recording industry. The uneven trajectory of technological development in the industry sheds light on the choices, complexities and contingencies involved in the innovation process through which technologies are appropriated, domesticated and embedded in the market.

SST’s broadened framework, which includes the mutual shaping of technological and societal change, combined with Social Learning’s focus on the contested choices, provided a useful framework to move beyond the prevailing account of the digital recording industry, which placed a single point of focus on the point of sales. Following the two theoretical approaches, this study explored the multiplicity of actors and sites of

innovation, and demonstrated different players struggling in this constantly changing environment to develop their own commercial space amongst a constellation of players and stabilise their space in that configuration. In contrast to the widely adopted notion that music is just a point of distribution, the empirical analysis of this study reveals the complexity of the processes involved in the development of digital technology. Although conventional mechanisms for valorising music by selling material products was obliterated by the dematerialisation of music, digitisation did not lead to a simple, e.g. technologically-driven, transformation of the industry. In the process of developing digital music distribution, a whole chain of players had to be realigned in the networks of digital recording industry - licensing, distribution and valorisation. This reconfiguration of digital technology was achieved through a significant realignment of interests amongst heterogeneous players who tried to situate themselves in the legitimate digital music business practice so as to fit their needs in technological and socio-legal infrastructure. The interactions and negotiations of conflicting interests and differing commitments produced a reworking of relationships and guided diverging choices in the market where market conditions and consumers' requirements are constantly evolving. The detailed innovation processes in which digital technology were implemented and domesticated disclosed a complex and constantly evolving landscape in which the development of digital technology was far removed from the smooth uptake as envisaged by the technology deterministic visions, and was instead imbued with tension and contradictions.

7.2 Social Shaping of Business Models

The technical availability of trading cultural contents without conventional middlemen cultivated the widespread idea that the conventional business models revolving around the distribution and sale of physical artefacts would be overthrown (Kelly 1998; Shirky 2001; Alderman 2002; Ku 2002; Knopper 2009). The complexity of goals and interests and the various exigencies involved in the process of innovation, however, render the trajectory of technological developments uneven. In examining digital disruption in the digital recording industry, this study has observed that a significant technological innovation was manifested in the process of building a commercially viable business model. Through empirical analysis of the evolution of digital music business models, this study critically examined the prevalent accounts of understanding business models.

Strategic conceptions of business model design arising from the Business School presume that it is possible to develop business models for new services through a one-off rational calculative act. Presupposing that other players' behaviours can be anticipated adequately and that it is straightforward to bring the other players into alignment with the plans, this approach conceptualises the way business models emerge through a calculative process. Their chief concern has been to identify archetypal characteristics that constitute a template of the way a firm operates and creates value for the parties involved (Zott and Amit 2010).

A different approach was developed from management studies for a more procedural understanding of the way firms operate. Mintzberg (1987), for example, refutes an analytical approach of understanding business models that assumes that deliberate calculations can materialise and that profit maximisation is the only cause for the success of strategy. He critiques the concept of strategic planning as the "fallacy of prediction" for disregarding the complexity and contingency involved in formulating strategies (Mintzberg 1994). He emphasises that strategic thinking can hardly be developed as planned or be predicted precisely. Strategy-making, he argues, develops through "messy processes of informal learning", which involve sophisticated and subtle human engagement with specific issues. This approach emphasises the divergence and complexity of strategies formed in the process of refining and elaborating on the way

the business operates. In this respect, strategies are emergent because visions can only provide a general direction which leaves much for adaptation; therefore, the detailed process of business emerges en route. Underpinning emergent strategy is the process of learning what works and what does not in the market, which is difficult to conceive fully at the outset and subject to change. Mintzberg perceived that these strategies can be refined through a process of “crafting”, which requires continuous feedback and adaptive learning.

New business models that emerged in the digital economy posed particular challenges to applying this formal strategic model in a digital context. The use of digital technologies is becoming ever more ingrained in almost every corner of society, and the unprecedented pace of change posed an immense uncertainty surrounding the process of technological development. As the user base with its divergent demands grows, the indeterminacy of users’ acceptance and building of new markets is especially pronounced in the field of digital media. The calculative approach assumes that key elements of business models follow the underlying logic of matching requirements and ignores the fact that users’ requirements are constantly evolving in emerging circumstances.

Moving beyond the approach characterised by the view of conceiving the business model as a calculation, a more sophisticated understanding of the business model arose from the business schools, which takes into account complex and changing business environments. This approach conceives business models as a proposition for a sustainable business in a particular set of circumstances. Doganova and Eyquem-Renault (2009), for example, define business models as a device to achieve what they describe in the business proposals. As a future-oriented tool, business models in this context are viewed as a device of persuasion to align players as either internal entrepreneurs that secure commitments and external players that engage in investment. By propelling the encounter of these two players, they argue, business models operate as a demonstration of value, linking entrepreneurs’ value proposition and investors’ appraisal. In this context, valuations are not a fixed concept but are constructed following “heuristics” (Callon and Muniesa 2005) in the constantly changing market. As

a prototype to demonstrate “asset-becoming process”, they argue, business models can be imitated.

This approach has strong resonance with Baden-Fuller and Morgan (2010), who conceptualise business models as “ideal types” that can be formulated as a typology. Following a broadly institutional perspective, they propose a typology of business models that can act in multiple roles. The typology of business models, they suggest, could be achieved by extrapolating common features that depict the archetypes of the way firms create and capture value. These notions focus on the characteristics that make business models “performative” and “reflexive” and argue that these features could produce an ideal outcome. This also emphasises the flexibility of experimenting with the model; recipes can be used to build a new business model with great variations and innovation just as a chef can create an entirely new dish by arranging and combining existing recipes. The four core ingredients of the recipes are: customer identification, customer engagement, value delivery and monetisation (Charles Baden-Fuller and Haefliger 2013). Successful models subsequently could become institutionalised (Mikhalkina and Cabantous 2015).

Drawing upon the framework of Social Shaping of Technology and the Social Learning approach, this study demonstrated the processual shaping of business models in which multiple forms of interests and visions were aligned through trial and error. The empirical analysis observed the difficulty of technological change, in which companies reconfigure their business model through the learning process informed by feedback from the consumers who slowly find meanings in technologies. Over the course of this iterative process of “learning by interacting” (Sørensen 1996), where the linkages between users and suppliers are achieved, business models mutate into something different from the initial design. The thesis illustrated the multiplicity of actors and sites of innovation in order to depict the constellation of players involved in the innovation process. By placing business models within a broader context, this study observed the actual process of innovation across all of the networks of business: production, distribution, valorisation and consumption. The dispersed and highly complicated networks of the music business across a wide range of players, sites and phases highlight a configurational process of business model shaping that is not conducted by a single

player, but instead emerges through an interaction amongst heterogeneous players with different interests and diverging motivations and negotiation power. The evolutionary view of business models has therefore produced a more effective understanding of the digital recording industry than deterministic accounts of the technology-driven view of industrial restructuring or instrumental visions of strategically planned technological change. Based on this empirical analysis, this study proposes the concept of “Social Shaping of Business Models” as a new method to describe the emergent process of business strategy-making in which business strategies emerge en route in the process of technologies being appropriated and domesticated in the market.

The two successful business innovation case studies have exemplified how Social Shaping of Business Models operates in the digital recording industry. Quite contrary to the claim that business models calculated in advance can lead to successful innovation, the detailed empirical analysis of in-depth case studies demonstrate that business models are rarely fully formed from the outset, instead being configured over time in relation to complex heterogeneous networks and evolving user requirements. The proliferation of trial and error carried out in the digital recording market, in particular, underpins the unpredictability of outcomes and the complexity of interactions around the development and use of the technology. INgrooves’ case demonstrates the significance of the intermediate use of technologies in order to make the business model relevant and meaningful to an array of players involved in the business. Spotify’s case encapsulates the crucial role that users play in deciding which business models can succeed in the market. No matter how well a business model is designed, the final decision about its success remains with users, who have the ultimate veto power. Information about potential users, however, can hardly be complete. It is particularly challenging to gauge actual users in the case of radical technologies, which do not have previous data to rely upon. The significance of measuring users’ needs has become heightened as digital technology has endowed users with the power to withhold their willingness to pay. The illustration of the evolution of music discovery features on Spotify – from simple search to digital music curation – signifies the choices users can bring to bear in the process of refining business strategies. The intertwining innovation and domestication process in the implementation and use of the business captures the iterative nature of business model shaping in the process of understanding users’

appropriation of new technologies (Fleck 1988; Williams, Stewart and Slack 2005). The thesis did not conduct a direct observation of users in understanding their contribution to the technological development in the digital recording industry. Instead, the role and importance of users was observed indirectly through our detailed fieldwork with key intermediaries in the digital music valorisation process. We observed the extraordinary attention paid by these players to users. For example, the thesis offered an insight on how users' constantly changing requirements directed the innovation process was observed in the changing business model and music discovery features on Spotify.

Case Summary 1 – INgrooves

INgrooves is a digital music distributor providing custom services for artists and independent record labels. The company was set up by Robb McDaniel with a vision of commercialising European dance electronic music for TV commercials and video games in the US. The company began acquiring rights as “synchronisation” for popular catalogues and helped rights owners to exploit their contents.

With the arrival of iTunes, the business moved in a different direction. iTunes sparked large-scale legitimate digital music business transactions, and independent labels needed help with getting their content onto this new digital music consumption avenue. All the information on the catalogues INgrooves held for other types of digital transaction became essential assets in extending the business into digital music downloads. This change of business reveals the way that unexpected issues arose in the digital era. As the control of distribution has always been essential for controlling the market, major labels built a direct distribution system with iTunes. Unlike major labels, however, independent labels could not afford to build direct distribution channels with digital music service providers. Although many tools were developed in the digital age, which lowered the hurdles to reproducing, distributing and promoting digital music, converting files from physical formats into digital formats is still a considerable obstacle to overcome for most independent labels. Alex Branson, SVP at INgrooves International, shares an anecdote:

“Essentially the problem was there were these record companies. And then technology companies came along, and said to the record companies, ‘Okay, this is great. We like your music. Can you send that to me in a particular file format, and can you send me the data in XML?’ And guys in the record companies were like ‘XM what? Can I send you a Word document? Is that the same thing? Can I send you a CD?’ There was a long period of time when people were literally doing this. Here’s a box of CDs, and if you’re lucky you’ve got a spreadsheet with data typed out.”

(Alex Branson, SVP at INgrooves International, Interview, 16 May 2013)

This brought about the emergence of digital music aggregators. The demands for this new breed of intermediaries are fourfold: (1) whereas major labels had the capital to build the digital music distribution infrastructure, independent labels did not have either the funds or the negotiation power to build a direct distribution channel with digital music service providers; (2) quite contrary to the belief that digital transaction is easily carried out, commercial transaction of digital contents entails professional skills, and tasks involved in digital distribution, such as converting the information contained in physical products into digital, digital rights management and settling payment was a novelty and thereby required special expertise; (3) it was almost impossible for digital music service providers to handle thousands of independent labels in the market, and they could not just ignore the independent labels in order to cater to the digital music users already exposed to the unlimited access to music enabled by Napster; and (4) the abundance of content brought about by the abolished barrier to entry required music service providers to control the quality of their contents to ensure better consumer experiences.

In terms of the growth of the company, Robb McDaniel’s entrepreneurship played a crucial role. As the demand for digital conversion increased, INgrooves sought to scale the platform. The problem was solved fortuitously. An insurance agent for Robb McDaniel happened to be a former HR Director at Napster. He put him in touch with David Kent, a former director of new technology at Napster. David Kent, now CTO at INgrooves, was the primary architect of the enterprise software application, which was

essential for INgrooves' growth. Robb McDaniel raised venture capital to expand the business. His contact with Al Teller, head of MCA Records (which later became part of Universal), played an important role in taking the company to the next level.

As the digital music business grew, the main business shifted from a simple aggregator to a distributor whose business line included features such as marketing and promotion. The change of this direction underlines an important change that emerged in digital music consumption. As streaming services enabled unlimited access to music on a legal platform, the abundance yielded a "tyranny of choice" (Mulligan 2014) in which the majority of consumers could not decide between the 300 million tracks available in the world⁵². This is what Herbert Simon (1971) called an "attention economy".

"When we speak of an information-rich world, we may expect, analogically, that the wealth of information means a dearth of something else – a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention, and a need to allocate that attention efficiently among the overabundance of information sources that might consume it" (Simon 1971, 40–1).

Such changes presented a new role for INgrooves as a middleman between independent labels and digital music service providers. Out of 600 new albums released weekly, INgrooves' marketing team chooses 10 albums to highlight for digital music service providers, bringing back the industry's old strategy of filtering. Dominic Jones, International Sales and Marketing Director at INgrooves explains:

"The biggest hurdle to overcome [in the analogue era] was getting record shops to want to stock it in the first place...The hurdle with digital is getting the most profile for it and making sure it is in the homepage or a genre page or on a newsletter...We have to convince those retailers that our releases should be higher profile and bigger priorities than those of all our competitors."

⁵² A more detailed discussion can be found at p.189-190.

(Dominic Jones, International Sales and Marketing Director at INgrooves, Interview, 5 August 2013)

Another unexpected problem took INgrooves' business to a new level. Through a vertically integrated system, the major labels have long maintained tight control over distribution of music products in the market. Terrified by the idea of losing this control⁵³, Universal built their own distribution system, which they could afford to do in the beginning. As digital music transactions increased, Universal realised their outmoded system was failing to address their needs efficiently. Distinct from the common belief that large companies would be able to afford the world's best engineers and the best system available, this is not the case with digital music distribution. This is attributed to the fact that the organisational structure became fundamentally out of sync with the fast-changing nature of digital technology. An industry entrepreneur encapsulates this:

“If we think about the troubles majors experienced in building distribution system [it] makes it daunting [that] this once-used-to-be-a-very-small-company could. While we believe big companies would be able to afford the world's best engineers and the best system available, this is not the case with digital music distribution.”

(Interview with an Independent sector entrepreneur, name unrevealed at his/her request)

Universal created a partnership with INgrooves to use INgrooves' distribution system. The fact that the largest record label chose to use INgrooves' system acted as a market validation. Although independent labels and major labels were on a level playing field in technical terms, subsequent business development raises a question about this. By acquiring Fontana, Universal's North American independent physical digital distribution division, INgrooves helped Universal to finalise its ambition of purchasing EMI. By reducing the Big Four (major labels) to a Big Three, this acquisition led to market consolidation. The “attention economy” intensified the competition for exposure. By allowing major labels to overstate their market share (Christman 2013) and therefore

⁵³ See 5.2.2 section 1) for more information.

increase the exposure of major catalogues on digital music services, the partnership between independent digital music distributors and major labels appears to be indirectly contributing to the resurgence of market control.

Case Summary 2 – Spotify

Since the advent of Napster, a diverse array of trials and experimentation has taken place in the market to valorise music on the digital music networks. A period of uncertainty ensued with no clear way forwards. A series of moves took place such as iTunes, Last.fm and YouTube, leaving the piracy issue unresolved. Spotify arose in 2006 in the midst of piracy's golden era. The business began with a vision to provide a solution better than P2P file-sharing. The key attraction of P2P file-sharing lay in its ease of use and free and unlimited access to music, with the major weakness of illegality. Spotify's solution was an easier-to-use service with a lowered fixed price to legal access to a worldwide catalogue. This freemium-based streaming music business model proved to be sufficiently attractive to consumers to be commercially viable. However, the key success factor lay less with the solution per se than with the process of making this model work in a constantly changing environment. Far from straightforward, the process of business development was imbued with contingency, uncertainty and challenges.

The major challenge for Spotify's model was attaining licensing deals with major labels. For major labels, Spotify's model, with a freemium-based lowered monthly fee for large-scale access, was a bitter pill to swallow. For a new technology to survive in a harsh selection environment, a protected space, also known as a niche, could provide breathing room for a new sociotechnical configuration to arise (Kemp 1994; Kemp, Schot and Hoogma 1998; Geels 2002). For Spotify, this protected space was created in the least likely place, Sweden, the stronghold of piracy and the birthplace of two major piracy organisations, The Pirate Bay and the Pirate Party. The failed copyright policy in Sweden had created a legal vacuum in Sweden, leaving nothing to lose in this

experimentation.⁵⁴ The downturn of business forced Per Sundin, Chairman and CEO of Universal Music Sweden, to lay off 200 employees. The Swedish election debate in 2006 was heated over the endorsement of piracy and the debate urged Sundin's mother to try and persuade him to make a career change (Lynskey 2013). Spotify's technical superiority and the willingness to license, which was a rare combination back then, persuaded Sundin to convince his bosses to support the service. All major labels, along with Merlin, an independent music licensing agency, had 18% of shares in Spotify when it was incorporated (Jerräng 2009). After trying Spotify's demo, Per Sundin said to his team,

"This is Jesus coming to town! If this fucks up, we're going to be dead. So let's go all in."

(Dorian Lynskey (2013) "Is Daniel Ek, Spotify Founder, Going to Save the Music Industry...or Destroy It?" *The Observer*, 10 November 2013, Available online at: <http://www.theguardian.com/technology/2013/nov/10/daniel-ek-spotify-streaming-music> (sampled 15 February 2016))

What appears to be particularly crucial to Spotify's successful innovation is its efforts to make this technology relevant and attractive to digital music users. Sung-Kyu Choi, Global Head of Content Operation at Spotify, explains Spotify's efforts to find and match what the users wanted.

"We filled the gap for the consumers. They've been shouting about it. In Sweden, for instance, everyone said I download it illegally, but I want it to be legal, but I don't have any good alternative."

(Sung-Kyu Choi, Head of Global Content Operation at Spotify, Interview, 27 January 2013)

⁵⁴ The discussion of protected space in radical innovation so far is limited to a space created artificially to nurture a promising technology. Spotify's case challenges this concept in broader contexts.

Spotify also continuously refined technology by learning consumers' requirements. The latency, a delay in playback, was the largest bottleneck to attaining popularity for streaming services before Spotify. Daniel Ek's previous experience of running μ Torrent, one of the largest Torrent trackers for BitTorrent, served a crucial role in solving this problem. Knowing that the P2P network is very efficient for fast and seamless searching and downloading, Spotify integrated a P2P network in pre-fetching data and thus resolved this issue. In order to make Spotify's freemium service work in the market, Spotify had to convert people to premium. The premium service features evolved based on information from Spotify users, who slowly figured out what worked best for them. Spotify's premium service began as an advertising-free service. Later, attuning to the increasing uptake of smartphones, Spotify developed its "offline mode" feature, which allowed users to listen to their saved playlist without Internet connection. It dramatically reduced the friction in downloading and transferring files to mobile devices. Realising that "offline mode" was the most important vantage point for converting people to its premium service, Spotify made this feature available exclusively to premium service users. Olof Carlson, Product Manager at Spotify, explains the background:

"We have a very good free offering that is fantastic which is also now works on mobile. Users find out that they love music and they love Spotify and they decided that they want to be able to listen on demand anywhere, they want offline music and they want to get rid of the ads. And that effectively converts them to be paid users instead of being free users. So we have a tremendous belief in our model, how it works."

(Olof Carlson, Product Manager at Spotify, Interview, 25 June 2014)

Contrary to the widely believed idea that digital music has to be free, although important, free music was not all that mattered to digital music users. This offline feature gained Spotify a 20% conversion rate in 2008, making the service the first successful freemium-based digital music business model. By proving that the model would work in the market, Spotify began to expand and established a business model of ownership replaced by access. Through an iterative process of "learning by interacting"

(Sørensen 1996), Spotify now offers 30 days' free premium service in an effort to attain more premium service subscribers.

In ensuring that the service was widely adopted worldwide, Sweden proved to be an important launchpad for “translation terrain” (Williams, Stewart and Slack 2005). Building upon Sweden's specific market situation, the service achieved critical mass and reached out to global terrain. Spotify carefully addressed the issues that arose in Sweden's specific situation as the hotbed of piracy. Based on the experience of the immediate array of players with their historical and contingent concerns and capabilities, it mapped out their strategy in interaction with other players in a global setting. Perhaps the most significant change Spotify has made in the digital recording industry is attributed to its role in reducing the P2P file-sharing rate. By carrying out a double role of supporting copyright licensing deals and setting new rules for digital music consumption, or what Sørensen (1996) described as “learning by regulating”, it is bringing P2P users onto a legal music consumption platform (Aguilar and Waldfogel 2015).

The changing strategies involved in digital music discovery underpin the emergent process of refining a business model in light of constantly evolving market conditions and user requirements. As the number of subscribers increased, Spotify learned that their user requirements diverged from the initial prediction about users. Spotify's beta version was modelled after a P2P file-sharing website. Presuming that digital music users would know what they wanted, Spotify provided a basic keyword search on its service. Soon after Spotify's official launch, its user base grew meteorically. This expanded user base and exponential growth in its music library prompted Spotify to pursue technological advances in music discovery. It offered algorithm-based personalised recommendations based on the previous tracks to which a consumer had listened and what other people with similar tastes had been streaming. As the streaming market crossed further into mainstream adoption, Spotify realised that the majority of users, in fact, wanted their music choices to be presented to them.⁵⁵ The company therefore

⁵⁵ In fact, “Hit-heavy, skinny-tail” distribution has also been observed on P2P file-sharing networks (Page and Garland 2009).

began providing its own curated playlist. Olof Carlson, Product Manager at Spotify, explains this change:

“When Spotify started out, what it had was really a search box where you could input your search query and you could find any music in the whole world...That became a huge success especially in Sweden where people were very used to Pirate Bay, where people were used to having music in the computer and searching for it...As the market is growing and more mainstream users, if that’s what you call [them] are coming in to streaming, into Spotify and they don’t have the same drive to search music. They want it to be presented to them, with less friction and at least that’s one hypothesis that we have. So then we felt that we needed to create, we have to reduce friction while still increasing the quality of music recommendations that you get.”

(Olof Carlson, Product Manager at Spotify, Interview, 25 June 2014)

Spotify’s playlist is increasingly becoming an important destination for digital music discovery. The unexpected outcome of this is Spotify’s new role as a tastemaker. David Whittle, Director of User Analysis at Spotify, compares this to the role of the record shop, which had the ultimate decision power of choosing which records to be displayed on the shelves:

“We have so much knowledge at our disposal. It is very easy for us to put things up for people and say, ‘Hey, maybe you like this’. In some ways, we are like a record shop used to be 20 years ago.”

(David Whittle, Director of User Analysis at Spotify, Interview, 18 June 2014)

A more significant result is perhaps Spotify’s position as a hit-maker. Lorde, a 16-year-old New Zealand singer-songwriter, is one of those who rose to stardom overnight

through Spotify. Will Page, Director of Economics at Spotify, explains how Sean Parker's⁵⁶ playlist on Spotify brought her this instant stardom.

“Here’s the streams from Spotify from 19th of March to 16th of April...What happens on the 2nd of April? So this is not a radio plugger or PDs, promotion department, this is just drinking a coffee, like that song, put it on my playlist and he [Sean Parker] has 850,000 followers to that playlist. Pretty mad, huh? So much so that by the second week, she got to number two in the US viral chart. Crazy, for a 16-year-old-girl in New Zealand.”

(Will Page, Director of Economics at Spotify, Interview, 6 March 2014)

As Spotify is increasingly positioned to exercise influence over consumers’ choices and become an essential route to stardom, concerns have been fuelled that it is bringing back the industry’s old practice of market manipulation and contributing to the resurgence of the market control of the majors (Peoples 2015).

- Entrepreneurship

There exists a large body of literature devoted to the discussion of entrepreneurship, and it is not the intention of this study to claim a definitive contribution to this field of study. However, the set of developments studied here allows us to make some observations about the particular capacities and experiences of the entrepreneurs involved in the innovation. The by-product of the observation that this research made through two successful innovation cases in the digital recording industry appears to provide some insight into the indispensable role key innovators play in leading a successful innovation. The innovators’ crucial roles observed by this study observed make them what Hughes (1986) described as “system builders”, who successfully integrate a technology into a system by considering the way in which technologies are interrelated in an organisational, sociotechnical and legal context.

⁵⁶ Co-founder of Napster. He negotiated licensing deals with Warner and Universal on behalf of Spotify for its launch in the US and now serves as a board member for Spotify.

First, the empirical analysis revealed that entrepreneurs' ability to mobilise knowledge and resources in and outside of the organisation is crucial to their success. This is often achieved by their ability to cross different spaces by engaging with people in different organisations, departments and communities (Williams, Stewart and Slack 2005). What makes this ability crucial is the information relationship, which is not established within the organisational hierarchy but can be a driving force for firms' future growth. This can be observed in the case of INgrooves, where Robb McDaniel, the founder of INgrooves, had the ability to cut across boundaries to raise funds and build informal relationships. This played a crucial role in steering the innovation and particularly in bridging the gap in inter-organisational systems.

Secondly, an ability to be reflexive about changes and challenges can play a vital role. The complex and changing conditions in the digital recording industry are imbued with constraints and contingencies. The case studies demonstrate that entrepreneurs' ability to negotiate multiple visions and navigate measures to cope with conflicts can decide firms' growth. For example, Daniel Ek, Spotify's CEO, played a vital role in responding creatively to novel and changing circumstances. He was highly successful in obtaining support for the new business model by redefining the market solution in relation to the legal regime, new technologies and potential users of the services. His ability of "learning by regulating" (Sørensen 1996) was particularly essential in setting new rules for digital music consumption by carrying out the double role of supporting copyright licensing deals and making the new product attractive to new consumers.

7.3 Socio-technical Constellations of the Digital Recording Industry

Technological innovation in the recording industry entails a complex interplay amongst a diverse array of factors such as digital technology, copyright regulation and the more or less conflicting interests between heterogeneous players such as major labels, other intermediaries, music consumers and artists. Radical technological innovation is subject to conflicts and struggles, and therefore typically deviates from the envisioned technological trajectory (Rogers 2014).

Only through an analysis of the whole network can we fully understand the intricate interplay between innovation actors and their interaction in the economic, cultural, legal and institutional context (Russell 1986). SST and the Social Learning approach provide a generic account of the processes by which technologies are shaped in particular historically structured contexts and configurations of actors. To emphasise the heterogeneity and loose coupling of players involved in the development of digital technologies, the Social Learning approach employs the term “socio-technical constellations” (Williams, Stewart and Slack 2005). This metaphor describes not only the closely organised arrays of players but also the loosely connected linkages amongst players, especially with some groups who remain on the fringe. However, it does not provide specific accounts of the changing landscape of the digital music economy. Here we turned to the substantive literature in this domain and in particular Leyshon’s (2001) networks of music economy and Hennion’s (1989) mediation. Developed upon Attali’s (1985) political and economic music value framework, Leyshon’s (2001) value networks explore the allocation of the different functions of the industry in four musical networks. His networks of musical economy depict the constellations of four major networks in the music industry. This framework is particularly valuable for capturing the complex relationship amongst heterogeneous forces and the blurred interaction among the four networks – creativity, distribution, distribution/promotion and consumption.

This study observed the importance of intermediaries in developing the whole system of viable commercialisation of music. Multimedia developments typically call for collaboration amongst heterogeneous constellations of players with diverging power,

interests and commitments, and therefore often carry uncertainties and difficulties in development, implementation and use of technologies (Williams 2000). The most pronounced uncertainties relate to future users whose needs constantly change in emerging contexts; therefore, active intermediation is often involved in order to mitigate the gap between supplier and use. There has been a deep uncertainty about how to build a commercially viable service that will be attractive to digital music users and how much or even whether they will be willing to pay. In the digital recording industry, this process involves a negotiation amongst a diverse array of players in a legal and sociotechnical context. Spotify's crucial role as an intermediary in this aspect is what Nicoll (2000) described as the ability to build an internal sociotechnical constituency by mobilising the necessary resources and configuring users' demands in a naturalistic environment. In bringing the streaming service to mainstream adoption, Spotify played a key role in domestication by making the technology relevant and attractive to digital music consumers, and bringing P2P users onto the legal music consuming platform.

The increasing complexity of technology requires combining many different kinds of knowledge, specialities and multi-level sets of skills. The production of this combination is highly dependent on the infrastructure of knowledge, skills and proficiency or meso-level characteristics (Sørensen and Levold 1992). In building inter-organisational systems, theoretical knowledge alone is not enough. Practical, often tacit, knowledge embodied in living persons is vital to innovation. The thesis demonstrated that INgrooves, as a system-building intermediary, played a crucial role in building the inter-organisational system and making digital music transaction work. The INgrooves case also illustrated that the nature of the tacit knowledge circulates better in a certain hierarchical setting: despite the majors' capital and resources, the independents' approach fit better with the digital distribution system and could not be transferred to the major labels.

In understanding the recording industry, most existing studies focus on a single locus, either drawing attention to major labels' influence on innovation or innovative approaches by independent labels or artists. Distinct from this approach, this research looked at multiple loci - record labels, aggregators, service providers, artists and users, and presented their respective roles and contributions to technological development and

innovation practices. Hennion's (1989) concept of mediation guided this research to explore a comprehensive analysis of the interaction and intermingling of the diverse actors across the entire networks of the digital recording industry. As a result, the thesis looked at the chains of interplay amongst these diverse players and identified a more complicated account of the dynamics in the heterogeneous networks, which moves beyond a simplistic and linear understanding of the digital recording industry.

By exploring the socio-technical constellations of the digital recording industry, this study produced a more complete and sophisticated account of the industry. This picture is quite removed from the prediction of an imminent and radical transformation of the industry and highlights flaws of focus on dematerialisation of commodity. A comprehensive analysis of the interaction and intermingling of the diverse actors across the entire network of the digital recording industry produced a new landscape, which moves beyond the simplistic and linear understanding of the industry. The complexity of choices, uncertainties and contingencies involved in the innovation highlights the complex and often contested processes in which technologies are actually adopted, employed and embedded in society.

7.4 Discussion

The thesis originally began at the Law School, where I studied copyright issues in the music industry. At an earlier stage of my research, however, the issues that came up were centred upon innovation in a sector in which law, though an important element, was not per se the key dimension. I was also notified that the supervisor who gave me the admission was about to leave the school. At this stage, I shifted department and developed the thesis in a new direction. The recording industry at that time was experiencing interesting shifts in times of growth. Prompted by Spotify's streaming/subscription-based service, it had just begun to recover from the economic downturn persisting since Napster. The thesis set out to provide a better understanding of the changes at this critical time in the contemporary digital recording industry in which digital music users were becoming more attracted to legal and paid services than to free, often illegal options. While the increasing revenue generated from a digital platform could potentially signal the economic recovery of the recording industry as a whole, it was estranged from the radical transformation of the digital recording industry initially predicted. To this end, this study investigated why there was a mismatch between the predictions and what actually happened in the market.

Despite the popularity of the subject, digital music research has rarely been done within the STS framework. Insights from SST and its extension, the Social Learning approach, allowed this study to capture the complexity of choices involved in the innovation processes, arising as interplay amongst a wide array of actors with different interests, motivations and commitments. This was first observed in the development of business models in digital music networks. Distinct from the prediction that P2P distribution channels would be widely used to enable artists to disseminate their works and to engage with their fans directly without the help of conventional gatekeepers, P2P technology over time waned in the course of legal, sociotechnical configurations. Instead, a commercially viable business model arose in the legitimate distribution channel as a result of realignment amongst heterogeneous players. The process that digital music companies configured over time in relation to complex heterogeneous networks and evolving user requirements underpins the emergent process of the developing business model. The exploitation of copyright has proven to be crucial to

the success of the music business (Bettig 1996; Frith 1987; Negus 1992; Litman 2001; Towse 2004). Moving beyond the current scholarship's great emphasis on the law's impact on the market, the study explored copyright regulations in the context of innovation process in relation to the expectations and visions of various players. Underpinning the critical change in the digital recording industry in which Spotify's streaming business model was increasingly perceived as a solution to the industry's struggle to eliminate piracy was the process of "learning by regulating" (Sørensen 1996) whereby Spotify played the crucial role of supporting copyright licensing deals as well as setting new rules for digital music users.

The thesis also observed users' crucial role in the uptake of digital music services. Although the music business has always relied heavily on the fickle and unpredictable nature of popular taste, the artificial scarcity created by physical artefacts has given record labels considerable power to control consumer price and musical choices in the market. The free and unlimited access to music enabled by digitalisation has granted digital music users the power to withhold their willingness to pay. As a result, finding and matching digital music users' requirements proved to be vital in deciding firms' success in digital music networks. Spotify's contribution of filling the gap between free, convenient but illegal P2P vs. convenient but expensive or inconvenient free legal options underscores the significance of appropriation and domestication (Fleck 1988) and the reiterative process of "learning by interacting" (Sørensen 1996) for a successful innovation.

Based on the detailed analysis of two successful innovation case studies, this study proposed the concept of "Social Shaping of Business Models" as a new method to describe the processual shaping of business models in which multiple forms of interests and visions were aligned through trial and error. Both case studies in this thesis demonstrated the process of business innovation is highly contingent and dispersed in complicated networks of the music business across a wide range of players, sites and phases. Rather than following the technological possibilities or strategic plans, business models emerged through an interaction amongst heterogeneous players with different interests and diverging motivations and negotiation power. This evolutionary view of

business models has therefore provided an effective tool to address why the digital music business models have diverged from the initial predictions.

The STS framework was particularly useful for moving beyond a simplistic and linear understanding of the digital recording industry caused by a single focus on technology or law's impact on society. To gain a broadened range of social groups and knowledge of relevant influences on innovation, the study drew upon the concept of the "socio-technical constellation" (Williams, Stewart and Slack 2005) which emphasises the heterogeneity as well as the loose coupling of players involved in the development of digital technologies. In understanding the constellation of the digital recording industry, this study identified four major factors: digital technology, copyright law, users and business models. For specific accounts, the study turned to Leyshon's (2001) networks of music economy and Hennion's (1989) mediation. This research framework allowed the study to capture the interrelations and interdependencies of a wide range of actors involved in the innovation, as well as to provide a detailed understanding of how the diverging expectations, visions, sets of rules and interests have aligned in the process of innovation.

An in-depth examination of the industry was conducted from two different "viewpoints" (Williams and Pollock 2012) – digital music services and digital music distribution networks. INgrooves' case demonstrated the detailed process of reintermediation in which unexpected problems that arose in the digital era brought an emergence of independent digital music distributors as a new breed of intermediaries. As a case of meso-level innovation (Sørensen and Levold 1992), INgrooves illustrated the vital role of the inter-organisational system intermediary in innovation. Spotify's case attested that a realignment of conflicting interests had to take place when building a commercially viable business model in the digital music networks. It addressed the crucial role that users play in business innovation, as well as Spotify's role as an intermediary in building an internal sociotechnical constituency by mobilising the necessary resources and configuring users' demands in a naturalistic environment (Nicol 2000).

The multiplicity of actors and innovation sites and the intricate interaction amongst the constellation of players in heterogeneous networks provides a much more complicated picture of the industry than the simplistic understanding induced by technology-driven visions. In the broadened framework which considers a wider range of innovation processes and a wider array of players, the thesis depicted the comprehensive innovation process subject to power struggles unfolding in the legal, societal, technological and organisational settings. This complicated account of the industry helped overcome the bias I had when embarking on the thesis at the Law School. This thesis has hopefully contributed to developing a more sophisticated and nuanced understanding of technological change.

- Implications for Methodology

The thesis is largely inspired by the disparity that began to emerge between the grand vision of the digital recording industry and the new changes prompted by Spotify. Considering the significant changes Spotify has made, this study intended to take Spotify as a single in-depth case study. But access often changes the direction of research, and when I was offered an internship at a digital music distribution company, INgrooves, the work placement provided me with rich information on the course of the struggles the industry players experienced and the intricate relationships amongst a diverse range of players. I was able to observe the inter-organisational interactions and the diverging choices made from the coordinated negotiations. For the originally intended case study of Spotify, I relied on interviews with diverse employees at Spotify and media interviews and articles available on the Internet. The research design that emerged as a result of a combination of strategic planning and pragmatic opportunism surrounding research access allowed me to acquire understandings of the evolution of the digital music industry from two different “viewpoints” (Williams and Pollock 2012). Triangulating between these provided the basis for a richer and more robust understanding of developments and the way these were negotiated amongst an array of players in diverse and changing locations in the sector. The detailed account of the actual innovation processes across the entire network of the digital recording industry proved to be a much more efficient framework for demonstrating the complex

dynamics involved in the reconfiguration of digital technology and exposing the deterministic myths surrounding digital revolution hype in the recording industry.

In understanding the changes in the digital recording industry, much current scholarship has, pursued a narrow focus, in part through disciplinary framings either upon the law or technology's impact on the market. This has often produced a simplified account of change that does not do justice to the complexity and multidimensionality of these developments. To move beyond these linear accounts of technological change, the study widened the perspectives that includes the diversity and complexities of sociotechnical factors influencing technological innovation (Williams and Edge 1996). An analysis of the whole network is required to fully understand the intricate interplay between innovation actors and their interaction in the economic, cultural, legal and institutional context (Russell 1986). To that end, the study developed a framework of the "socio-technical constellation" (Williams, Stewart and Slack 2005) which allowed us to examine the circuit of the innovation process in which heterogeneous players struggled to stabilise their location in relation to a changing environment. The empirical investigation was conducted through two in-depth case studies – Spotify and INgrooves. Through these two different viewpoints in the sector, we addressed a set of heuristics in different settings of technological development over multiple locations (Pollock 2009; Hyysalo 2010; Williams and Pollock 2012). Following the practical guidance from Leyshon's (2001) networks of music economy and Hennion's (1989)' concept of mediation, the study looked at multiple loci and their respective roles and contributions to technological development and innovation practices among the four networks – creativity, reproduction, distribution/promotion and consumption. In understanding the constellation of the digital recording industry, the study identified four major factors: digital technology, copyright law, users and business models. In this research framework, law and users were not directly addressed in my study, except insofar as they were addressed by the interview respondents. Here we summarise the respective role of these factors.

- Digital Technology

The study offers a more complicated view of digital technology, which did not follow the deterministic view that the dematerialisation of cultural contents would lead to radical transformation of the industry. The complexity of goals and interests and the various exigencies involved in the process of innovation rendered the trajectory of technological developments uneven. Along the way to find ways to valorise digitalised music, multiple forms of interests and visions were aligned through trial and error. The iterative process of “learning by doing” (Arrow 1962) underpins the linkage between users and suppliers that had to be discovered in the course of making technologies work in the market.

-Copyright

Quite contrary to the prediction that the disintermediated market will allow artists to retain their legal rights for their own sound recordings and overturn the control in the hands of major labels built through access to copyright law, copyright law continued to exert strong influence in the shaping of digital recording industry. In the form of copyright licensing deal, copyright enabled major labels to retain their market control by mobilising the negotiation power. This is not to say that copyright was a single factor which steered the market. It was reflexive of the heterogeneous factors, including the market conditions and users’ constantly changing demands. To demonstrate the multifaceted role of copyright law that is subject to negotiation amongst players with divergent motivations, interests and power, the study drew upon Sørensen’s (1996) concept of “learning by regulating.”

- Users

Although the elusive nature of the audiences’ fickle taste has always meant that some level of control continues to reside with users in the music business, the business structure built around physical artefacts has given a considerable power to recording companies to control the price and the choices of music. Digital technology lifted this control and empowered digital music users to enjoy music for free, and to wield great influence in the shaping of digital music services. Digital music users did not merely follow the technological functionalities or legal enforcements. In the process of

adoption, consumption and use of technology, users' responses were a direct influence on the shaping of digital music services. The protracted process of bridging the gulf between users' requirements and supply highlights the instrumental role of users attached to valorisation dimension of the digital music services. Distinct from the widely circulated assertion that 'nothing can compete 'free'', free, albeit important, was not all that mattered. Though the research design only allowed us to observe users indirectly through the various intermediaries who have a direct access to consumers, the study observed, that digital music users' requirements are more complex and constantly changing, manifested in changing strategies of the innovation.

- Business Model

The development of new business models in the digital music sector was far removed from current conceptions within Strategic Management writings in Business Schools, which presume that a one-off calculative act suffices to develop and replicate a successful business model. Instead we saw a protracted process of trials and error learning within and between a number of new digital music start-ups. Over the course of iterative process of finding ways to valorise music on the digital music networks, business models were reconfigured in response to diverse factors such as users' selective decisions to purchase and appropriate technology, and licensing deals with major labels. Through two detailed case studies of players who had managed to develop and sustain successful business models, the study presented how business models emerge in a dispersed and complicated networks in the process technologies are encultured in the market (Lie and Sørensen 1996; Silverstone and Hirsch 1992)

- Shortcomings and Future Research

In conducting research in a context of finite time and other resources, there are of necessity difficult trade-offs between depth and breadth of study. The research design revolved around detailed examination of an array of key strategic sites in the evolving music value chain – and in particular exploiting the very detailed access that was secured to Spotify and INgrooves. This was part of an attempt to manage the tension between breadth and depth by applying a biography of artefacts perspective that encompassed

historical and contemporary ethnographic study and addressed contrasting viewpoints on the sector (Pollock and Williams 2012). In the course of research, additional interviews were made with players that were available – notwithstanding limited time and other resources for undertaking fieldwork. One prior research decision was that it was not possible to produce an effective sample of users – so this was not a plausible priority for the research.

The breadth of knowledge for which this research opted came at the expense of the depth of a single case study. As such, further research could go in two directions: expanding the case depth of either digital distribution networks or digital music services. An in-depth analysis of a digital music distribution network could demonstrate much more detailed dynamics involved in the reintermediation and the digital music distributors' changing roles in relation to other players such as major labels, independent labels, digital music service providers and digital music users. Meanwhile, an analysis of digital music service providers, for example a comparative analysis of two competing digital music services, could give insights into the specificities of business innovation in particular contexts and situations and explain why one firm is more successful than the other. The scope of research could also be expanded to a greater breadth of the digital music industry as a whole by exploring changes in digital music publishing. This would provide a more complete perspective of the dynamics in the digital music industry. The case of Last.fm also suggests that an investigation into the internal processes of a firm could be a further direction of the research. In the course of conducting a comparative study across different locales in the digital music constellation in especially the two detailed ethnographic case studies, there was not scope for direct observation anything more than a token sample of users. Deeper understanding of the user dimension through a direct observation, for instance via survey, could offer a better understanding in the role of the users in the innovation process. Such a study could easily warrant a PhD on its own. As of this writing, royalty payments from streaming services have generated a great debate on the proper compensation for artists. The main discussion of this subject centres around the fact that the music on streaming services is undervalued and that there is a need to build a “fair” compensation scheme. This discussion of undervalued music derives from a comparison to previous means of music consumption such as physical music products or downloads, and ignores the changing dynamics in

the digital era. A broadened framework that covers a variety of music valorisation channels in the complex constellations of value creation could bring a new perspective to understanding the changing value of music in the digital era.

Postscript

The thesis has shown why the promises of revolutionary transformation have not materialised in the digital recording industry. Instead of the anticipated deep structural change, we found a number of incremental adjustments as a result of the intricate interplay between innovation actors and their interactions in the economic, cultural, legal and institutional context. This evolutionary change is manifested with the development of streaming services. The service now seems to have become established as the de facto main means of digital music consumption (Nielson 2016). Streaming services arose as a response to a set of problems posed by digital technology: how to valorise music in the digital environment. The success of this new service and business model provided an effective solution to this dilemma by converting 100 million digital music users to paid music consumers (Resnikoff 2016). However, this development, though catalysed by technology-focused actors outside the music sector, did not involve the wholesale displacement of existing players. In particular, it allowed the major record labels to retain their power. The major labels have successfully repositioned themselves in the digital sphere by mobilising their massive resources - from financial and social capital to legal and lobbying power. The existing power structure, rather than being overthrown as predicted, has survived the so-called digital crisis. The major recording companies invested in new streaming platforms and built partnerships with independent digital music distributors. By establishing indirect vertical integration, they retained much of their market power.

Today when the costs/barriers of music publishing are falling we find ourselves in an attention economy (Simon 1971). The majority music listeners' tendency to listen to the popular music is bringing the industry's old practice of market manipulation. As a result, the contemporary digital recording industry shows a strong strand of continuity. However, the recording industry is not able to impose solutions unilaterally – the outcome that emerged was also a response to the digital music users' demands and new technological opportunities. The shifting terrain in this arena is therefore producing new dynamics. On the one hand, artists are experiencing unparalleled opportunities and options, and digital music users are enjoying ready access at modest cost to potentially much more diverse music wherever they go on any device. On the other hand, the

gatekeepers' roles are becoming increasingly significant and their control over market is resurfacing.

Today's streaming services are surely not the end of the process. At the initial stage of the new restructuring of the industry, a plethora of new players have entered the marketplace to compete with distinctive features. Tidal, owned by an American rapper Jay Z, is competing with the high quality sounds and artists' curated playlists, Amazon music with its existing customer base and a variety of other services, and Google play with the online music locker. Over time, the industry will enter into a stable stage in which a few big players will merge small and medium players and dominate the market, resulting in a lock in to one of the technologies. A further investigation on how this new convergence in the music industry, as the canary down the mine, could illuminate insights in understanding other sectors of the cultural industries.

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