The classics going online
Digitalisation and the recording of classical music

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ABSTRACT

This paper investigates the effect of digitalisation on the classical music recording industry (CMRI). Whereas the popular music industry in the digital age has been studied extensively, there is a gap in the academic debate on the influence of digitalisation on the classical music industry. With the use of both qualitative interviews with industry officials and a quantitative content analysis of album reviews since 1999, this research investigates the extent to which the developments in demand and supply witnessed in the pop industry hold for the CMRI and how this has influenced the practice of actors in the field, focusing on symphony orchestras in the Netherlands.

Keywords: cultural economics, recording industry, classical music, digitalisation

Wordcount: 16,749 words

Inhoudsopgave

Preface

In the search for a research topic, I came about an article describing the ill-adapted features of streaming services for the use of classical music. Despite having experienced some of these problems myself and having heard about it from close relatives, I never considered this problem to be of a big scope or having a significant impact on the industry as a whole. Searching on this topic a bit more, I discovered a serious lack in research on the effects of digitalisation in this specific industry and decided to investigate this further. What started as my initial starting point of the investigation became only one of the aspects in the bigger story of digitalisation and its effects on the classical music recording industry. Why was this topic not investigated on a bigger scale beforehand? As I soon figured out, data on the demand and supply of this industry are hard to acquire and the research methods needed to be adapted in order to work with the available data several times. This resulted in a mixed method approach combining both quantitative and qualitative data which however enabled me to not only look at the metadata or big shifts in demand or supply, but rather work on an inductive basis focusing on real changes within the field, in the practice of the musicians and organisations and on the artistic level. And for the streaming of classical music, the launch of MeloMe, a new high-quality streaming service especially for this genre, in less than a month shows the industry keeps evolving and getting more integrated with the digital world and its consumers.

1. Introduction

"When people look back a hundred years from now, this time will be seen as a crucial turning point, when we went from analog to digital. Much of what is special about this transition gets articulated by music, those waves of magic that happen when the human spirit joins with technology to create vibrations that enchant regardless of language or age, afloat between novelty and tradition and always asking to be shared." [1]

Last month the NOS reported a serious fall in the amount of illegal downloading in the Netherlands (NOS, 2017). What caused these changes? Why did the Dutch people suddenly download less? And what have been the consequences of piracy at first and its decreasing popularity at the current moment? A lot has been written about digitalisation and its effect on the recording industry. Most literature starts with the introduction of Napster, the influence of legal and illegal downloading, after which in recent years the main focus has become the influence of streaming services. Digitalisation in this work is defined as the online availability of music for consumers since around 1999, as opposed to digitization, which refers to the process of storing music on digital formats such as CDs and MP3 instead of analogue (Bourreau et al., 2013) Almost all literature about this topic is written with the focus on popular music and its related genres, creating a gap in research about the extent to which and in what way digitalisation has influenced classical recording music industry (CMRI). Classical music is on many aspects very distinct from the popular music as do their respective economies and industries, raising the question whether the trends studied and analysed for the popular music industry are also valid for the classical music (recording) industry.

Despite this lack of research on the effect of digitalisation, the industry of classical music itself has not gone unnoticed in the academic world. There is an extensive amount of literature focusing on questions such as the changing demographics of the audience of classical music and how this can or should be changed as well as the economic aspects under which symphonic orchestras operate, mainly referring to the cost-disease of Baumol and Bowen (for example: Heilbrun, 2011).

This thesis will investigate the influence of digitalisation on the CMRI with a special focus on symphony orchestras. These are not only the most prominent actors in this field, but are also characterised by certain aspects such as size, tradition and subsidies differentiating

[1] Clayton, J. (2016). *Uproot: Travels in twenty-first-century music and digital culture*. New York: Farrar, Straus and Giroux, p. 3.

them not only from the rest of the classical music genre, but making it a very differentiated case from the popular music industry in order to be juxtaposed to the developments in that field. In other words, this research will not only attempt to fill the gap in the academic debate about digitalisation and the CMRI, but also look into how this has influenced the actual practice of symphony orchestras in the Netherlands.

Several sub-questions will be dealt with throughout this thesis in order to answer this question. First of all, in an extensive literature review the effects of digitalisation on the recording industry will be analysed, as well as the differences between the two genres which could lead to possible similar or different results. In this chapter, the specificities of orchestras and the cost-disease from Bowen and Bowen will also be further developed.

By a mixed method approach using both qualitative and quantitative data and methods, this research performs an unprecedented analysis juxtaposing the trends established in the popular music industry with those in the CMRI. First, a dataset is created comprising data from the coding of classical albums reviews since 1999 from the Luister, a Dutch classical music magazine discussing newly issued albums in each issue, which enables a longitudinal trend analysis into the effects of digitalisation on this market. Based on the exploratory nature of this research, these data are supplemented with qualitative in-depth interviews with actors from the field to provide a complete picture and investigate the influence of the developments on the actual practice in the field. Based on the availability of data as well as societal and academic relevance, the focus of this research is placed on the Netherlands. Whereas some research is done on American orchestras in the digital age, this type of investigations is missing on the European continent where the classical music has long traditions and is furthermore highly subsidised by governmental institutions, which emphasizes the societal relevance of this study.

Because the data for this research are based on album reviews as well as inside information from field experts, the analysis will not only refer to economic or meta aspects of the industry, but refer to the artistic aspects of the music as well. In other words, not only how much and in what way music is recorded, but also what kind of music. This gives this research relevance not only based on its academic value, but also provides new insights into unstudied effects of digitalisation on the practice of (symphony) orchestras in the Netherlands and highlights the possibilities that this new digital age has for this (academically) underestimated genre.

2. Theoretical framework

This chapter discusses the current status of the academic debate and empirical research about digitalisation in the music industry. Where possible, specific literature on the classical music industry is included, but since most of this literature is written with a focus on the pop music industry the first paragraph will provide an overview of the main differences between the pop and classical music industry and its consumers in order to be applied in the rest of the chapter dealing with the academic debate about digitalisation in the music industry. In this way, this chapter attempts to add to the academic debate by focusing the attention on the CMRI and the practice of classical orchestras as well as develop the context for the empirical analysis.

2.1 The classical music industry and its consumers

This paragraph will highlight the main differences between classical music and pop music focusing on the characteristics of its audience influencing demand and the economics of the industry in order to avoid a too detailed discussion of classical music history, belonging to the research domain of musicology.

Based on the findings of several empirical studies, classical music consumers are identified as relatively old, highly educated and earning a higher income than the average person in society (Prieto-Rodriguez, 2000, p. 148; Oakes, 2003). It is argued that classical music is of a higher complexity than most popular music, therefore requiring a certain level of cultural capital. Cultural capital is an immaterial concept developed by Bourdieu, is built over time by consumption (Oakes, 2003, p. 168-169) and in that way forms a barrier for entry for inexperienced classical music consumers further raised by the existence of several rules and habits concerning the consumption of (live) classical music (Green, 2003). A last aspect characterising the classical music consumer is the relatively high valuation of sound quality, influencing consumption decisions not only directly based on the quality of the product but also indirectly because of convertibility of sound systems and switching costs, as will be explained in more depth further on.

Looking at the industry structure an important factor is the high dependency of the classical music sector on subsidies. Although this paper will not go into depth in the policy aspects of subsidies, it is important to take the situation into account because it creates a different cost and revenue structure than experienced in an industry without subsidies. Despite subsidy cuts in the aftermath of the financial crisis of 2008, subsidies still form an important

source of income for this sector (Bongers, 2016). In the Netherlands all professional symphony orchestras, as well as several chamber orchestras and ensembles, are included in the BIS,[2] and have earned on average 28% of their total budget from own revenues (Ministerie van Onderwijs, Cultuur & Wetenschap, 2017). At the same time there has been much political pressure to increase the own revenues and taking an entrepreneurial attitude, even though it is excepted in the field that such revenues cannot be created ad hoc (Raad voor Cultuur, 2011, p. 5-6). Complicating the situation is the fall in supply of private sponsorship as a consequence of the financial crisis during this same period (Mauskampf, 2013). This leads to a contradictory situation in which own revenues play a relatively minor role in the overall budget of classical institutions, yet are under much attention and high pressure to be raised in order to fill the gap of plunging subsidies and private sponsorship (Blokland, 2012).

One of the justifications for these subsidies is based on the cost disease of Baumol and Bowen (1966), which predicts an income gap for this industry creating the need for subsidies to enable this art form to take place. The theory of the cost disease holds that certain industries are more labour dependent than others, reinforced by the technological revolution that took place in the 20th century. Where other industries were able to make their production process more efficient and save on labour costs, these industries are inherently more labour intensive and unable to do so. The classic example is the symphony orchestra, since despite technological innovations, a symphony still takes the same amount of people and same amount of time to play. This does not only indicate high costs on itself, but mostly in relation to the overall economy where innovation has led to a rise of wages, creating an even greater burden of labour costs and income gap for these labour intensive industries (Baumol & Bowen, 1966; Besharov, 2005).

Despite the high prominence of the cost disease theory for cultural economics, the theory is not undisputed. Some scholars argue the authors were too pessimistic in their analysis (Toma, 2007), overlooking opportunities for cultural institutions to overcome the income gap or focusing too much on the supply side. As Robinson (1969) explains, increasing costs are not necessarily a problem if demand rises simultaneously. In that case a higher price can be charged or fixed costs can be spread over a greater output. For a good understanding of the

[2] The 'basisinfrastructuur' (BIS) funds the core cultural institutions for the Dutch government who receive subsidies on a 4-year basis. It forms the biggest part of national cultural subsidies in The Netherlands, followed by the Fonds Podiumkunsten, which funds smaller organisations and initiatives. The Netherlands has nine professional symphony orchestras, which are all supported through the BIS as well as the Radio Philharmonic Orchestra, which is part of the public broadcasting and receives subsidy through the media fund (https://www.ocwincijfers.nl).

consequences of the cost disease, demand should be taken into account more. In recent years, more research has been done in order to include the influence of digitalisation into the theory and investigate whether this reinforces the effects or whether digitalisation has created possibilities to overcome the cost disease. Whereas some scholars argue that the live concert is indeed affected by the cost disease and unable to become significantly more efficient, there are opportunities in the back office to become more efficient and save costs (Carrol & Koehne, 2013). Yet other academics, such as Mauskampf (2013), argue the entire concert experience needs to be rethought to enable further innovation in this sector. One example is the possibility of live streaming to increase output in the amount of people reached giving the same amount of concerts, but given the focus of this research on recorded music, this phenomenon will not be dealt with further.

Most of these articles have focused on live concerts and little attention is paid to the recording industry. Cowen (1996) is an exception who argues that specifically in the recording and distribution sectors technological innovation has taken place and costs are decreased. Furthermore, also the production process has seen shifts in practices, such as a growing number of live recordings compared to more costly studio recordings. The consensus in literature remains that, regardless of occasional innovations and cost reductions, the cost disease is influencig the classical music industry and leads, especially in combination with reduced subsidy levels, to a high pressure on orchestras to reduce labour costs. In the Netherlands empirical data show this issue with orchestras forced to merge (Orkest van het Oosten and het Gelders Orkest; Raad voor Cultuur, 2016) or cut heavily on their staff personnel (Radio Philharmonic Orchestra; Den Hond, 2017) or musicians (Ballet Orchestra; Raad voor Cultuur, 2016). Because the cost effect is stronger with bigger ensembles, such as symphonic orchestras and opera productions, a rise of releases by smaller ensembles is expected, although it is to be questioned to what extent the benefits of digital means are bigger for either larger or smaller ensembles.

Hypothesis 1: Due to the cost disease, the CMRI witnesses a decrease in releases of records of bigger ensembles, such as symphonic orchestras and opera productions, compared to records by smaller ensembles or soloists.

As mentioned before, creating higher demand is a way to deal with or balance higher costs. When it comes to classical music and the attraction of new audiences, the gradual aging of its core public and difficulties in attracting new and young audiences dominates the academic debate as well as empirical research (see e.g. Flanagan, 2008; Prieto-Rodriguez & Fernandez-Blanco, 2000; BV Musikindustrie, 2010, 2015) Yet, contrary to what might be expected, given the financial crisis and lower buying power of the population, the Ministry of Education, Culture and Science in the Netherlands reported that visits to subsidised cultural organisations went up by 12% in the period from 2009 to 2015 (Ministerie van Onderwijs, Cultuur en Wetenschap, 2015). A report based on visitor numbers of venues furthermore suggests a slight growth of attendance for classical music in the period between 2009 – 2015, with most growth taking place in the last years where classical music also takes a bigger share of total attendance to performing arts (growing from 13% in 2009 to 15% in 2015) (Bongers et al., 2016, p. 79-80). Comparable data are not available for the consumption of recorded music, but it indicates that there is still an interest in classical music despite the relative high age of its audience.

A more artistic aspect of classical music that influences its economic structure, is based on level of variation and authenticity. In popular music it is the norm to record new songs written by or for the artist (Garofalo & Waksman, 2014; Somdahl-Sands & Finn, 2015), with value being created by the newness of the songs released and covers playing only a limited, though not to be underestimated, secondary role. The most important data for a song in the popular music industry are the artist and song name, after which the album on which it is released follows. The author of the song is of less importance and in fact quite often unknown to the bigger audience (Somdahl-Sands & Finn, 2015, p. 817-818). The concept of a cover is not common in the classical music discourse, even though it is usual for the same piece to be recorded multiple times by different groups or even the same artist (Van Tilburg, 2017). For a work of music in the classical genre the most important piece of information is usually the composer of the work, after which more data follow, such as the conductor, executing artists, soloists, name of the piece and recording methods and place. More value is placed on the specificities of each recording than the novelty of the music itself. As a consequence, even though each recording is unique, the amount of variation between new classical recordings seems to be smaller than in pop music. With the empirical research on pop music indicating that people attach more value on ‘new’ music and music loses its utility as it is owned for a longer period of time (Waldfogel, 2011b), this has economic implications in terms of substitution and profitability of new recordings in the classical genre.

2.2 Digital file-sharing and the demand for (paid) music

This paragraph focuses on the effects of digitalisation on the demand in the CMRI. Digitalisation, meaning the online availability of music for consumers, includes both legal and illegal forms of downloading as well as streaming through several websites and special services. Already in 1992 the MPEG-1 Layer Three (MP3) was developed as a new way to save music as a digital file taking little space yet losing quality only on a marginal level. With this development, the digitalisation of music was possible, but it was not till the creation of peer-to-peer (P-2-P) networks, with Napster as its prime example, that music became easily accessible for mainstream users. Napster enabled the 'dematerialization' of music (Moreau, 2013, 18), reducing physical and time barriers (Meisel & Sullivan, 2002) which resulted in a significant rise of (illegal) downloading. This leads most scholars to accept 1999 as the starting point of digitalisation (see e.g. Tschmuck, 2006; Mortimer, Nosko, & Sorensen, 2012; Bourreau, Gensollen, Moreau & Waelbroeck 2013; Waldfogel, 2011a).

Even though Napster did not have a long life and was shut down after legal affairs, online availability of music through downloading, both legal and illegal, has been a part of the music industry ever since (Tschmuck, 2012). The main source of income for the music industry at the moment downloading and piracy emerged were records sales and downloading was supposed to lead to a fall of them based on the law of demand (see e.g. Liebowitz, 2004). This basic economic principle holds that, paribus ceteris, people go for the highest utility for lowest costs (see e.g. Parkin, Powell & Matthews, 2012) and this predicts people to go for the free downloading option which gives similar utility in accessing music yet for a lower price. The assumption was that consumers who would normally have bought a CD now instead make use of digital possibilities to acquire the music for free, resulting in lower revenues for the industry (Kos Koklic, Kukar-kinney & Vida, 2016, p. 15). While there is a general consensus among scholars that this substitution effect has been causing the fall of record sales in the last decade, there is still much discussion about the exact effects and consequences of digitalisation on the recording industry because of both ambiguity of the data and several contradicting forces (Tschmuck, 2012).

A problem in discussing the effect of digitalisation is the ambiguity of the data. First of all, the last decades have seen a trend of 'unbundling' music with a market revolving more around singles than albums. This results in lower revenues since it is much harder to reach the level of revenues earned by albums sales by single song sales (Tschmuck, 2012, p. 189-190). Although the digital revolution as Tschmuck calls it further enabled and sped up this process,

it is not the cause of this development, which had already started before the advent of P-2-P networks, and interferes in data blurring causality analyses of digitalisation.

Other variables interfering causality analyses are for example the illegality of downloading which can lead to a downward bias in analyses (Dang Nguyen et al., 2013) and the limited availability of valid data due to a lack of administration of these data by governments and restricted access to information from organizations in the market (Handke, 2012). These ambiguities can explain the ongoing debate about the exact effect of digitalisation on record sales, expressed in a 2012 article referring to the 'heated and very controversial debate' (Dewenter, Haucap & Wenzel, 2012).

Despite ambiguity in data on the overall effect, several factors have been established that interfere with the effect of the law of demand on the music. First, while file-sharing is free in monetary terms, there are 'hidden costs' based on the fact that file-sharing is an illegal activity. Kos Koklic et al. (2016) refer to them from a psychology background as social drivers whose intensity, depending on a person's believes about involved risks and consequences for society, influences their inclination to engage in illegal file-sharing. These costs that come with the consumption of a good but are not included in the price, also called negative externalities in economic discourse, can fluctuate between people and over time (Kos Koklic et al., 2016, p. 18-19). The higher the externalities, the smaller the actual price difference between a 'free' download and a CD. This theory overlaps with empirical results, showing that in Germany, where individual downloaders are still prosecuted which raises the risks involved (Tschmuck, 2012, p. 186), the physical music market shares are significantly higher than global averages.[3] Weijters (2013) extends this argument based on empirical research resulting in age as one of the prime indicators for illegal downloading, a result confirmed by other empirical studies which show significantly less downloading activity among the older age cohorts (Peitz & Waelbroack, 2005, p. 375). Young people are more inclined to download music illegally, mostly stemming from economics reasons which leads to higher preference for free music (Weijters, 2013, p. 548). Given the described demographics of classical music consumers the expectation is that downloading has been less appealing for this consumer group, based on age as well as preference for high quality sound formats.

[3] The IFPI has reported the digital music market is growing, leaving physical music with a marketshare of only 56,1% in 2012 (IFPI, 2014, p. 7), compared to 79,9% in Germany in the same year (BV Musikindustrie, 2012, p.7)

The physical character of a CD also has certain aspects raising its utility for certain consumers, leading them to buy CDs despite to higher price (Waldfogel, 2010). The most prominent aspect in relation to classical music is the sound quality of a CD, which is much higher than of MP3 files or streaming services. Even though more quality download options have come available, such as the FLAC file, these are still considered of a lower quality than the CD format, especially considering the possibilities mainly in the first years of digitalisation to play digital files over high tech sound systems, which is necessary to hear the quality differences. Changing to another sound system which is able to connect to the computer and digital files comes with high costs, also referred to as consumer switching costs (Klemperer, 1987). Since the priority of sound quality and thus possession of high quality sound system is lower in the popular music industry, the conversion to digital formats is made easier and less costly. It is further argued by people involved in the pop industry that for them other aspects than sound quality, such as download and sharing speed, are more important in format of preference due to other use practices such as for the use of DJing which is common in the popindustry but mostly non-existent in the CMRI. In other words, with lower switching costs, price of the product itself becomes a more influential factor in consumer choice, leading to higher price elasticity of demand for physical albums in the pop industry than in the classical music industry (Clayton, 2016, p. 60-61). Lower (cross)price elasticity means less influence of the difference in price between a download and CD, based on other values and factors such as sound quality, negative externalities, use of digital means and switching costs (Parkin, Powell & Matthews, 2012; Lysonski & Durvasula, 2008).

Hypothesis 2: In the CMRI a lower price elasticity of demand for CDs and SACDS leads to less substitution of physical music by digital music.

In recent years, a further shift in the function of a CD has occurred from being a means to acquire music to being an experience good providing utility for people based on values and memories. The concept of experience good has different meanings in cultural economics, but is used in this thesis to refer to a good that is bought not only for the basic utility is holds as a material good, but for the additional value created by the experience of consuming or gifting the product (Towse, 2010, p. 151-152). This value created for the good outside of its pure functional utility dampens the cross price elasticity of demand between the physical and digital product, because the download is a less perfect substitution for the physical product, and is one of the factors that explains the continued demand for CDs. While in some cases the

product itself has changed to create this extra value, for example visible in empirical data showing the popularity of gifting and deluxe boxes (IFPI, 2014, p. 7) as well as the rise of vinyl sales, which is unexpected in view of its inefficient size, price and convertibility (IFPI, 2017, p. 7; Bartmanski & Woodward, 2013), the shift in function is mostly noticeable in the changing attitude towards and use of the product by consumers and can be seen for example in the relatively high sales of albums after live shows and on festival, where albums are sold as a souvenir to that day or event rather than purely for the music (Brenner, 2017). With the abundance of music available online and for a low price, the value of the physical product now comes more from the extra (experience) value than its actual utility as carrier of music. Given the above explained expectation that price elasticity of demand for CDs as well as its use and function is different in the CMRI than in the pop industry, this research will investigate to what extent this shift in function is experienced similar in the CMRI.

Hypothesis 3: The CMRI has seen a similar shift of the function of the CD towards an experience good.

An adverse effect of digitalisation covered by some scholars is the sampling effect, referring to the complementarity instead of substitution of online accessibility of music and physical CD sales. This argument is built on the theory that digitalisation enables people to try or 'sample' music more easily which increases their ability to estimate the value of a potential CD purchase. With the increasing ability to match wants, perceived utility and actual utility, the demand is expected to rise (Peitz & Waelbroeck, 2006). Nevertheless, studies linking download activity to CD sales tend to be biased towards a positive relation because the people who download already show an interest in music and thus have a higher potential for purchasing music than an average person. Peitz and Waelbroeck (2006) do find a positive relationship between downloads and music purchases, but also argue that down the line the substitution effect is of a stronger (negative) relationship, resulting in an overall negative relationship between digitalisation and recorded music revenues.

After the initial focus on downloading, streaming came up in the second half of the last decade and resulted in drops of illegal download activities and increases in revenues earned from recorded music. Despite the enormous popularity of streaming in general (IFPI, 2011; 2014; 2017), the demand for streaming classical music seems to be an interesting case with several complaints being expressed. First, due to the different data that are of importance as well as the amount of metadata relevant for a classical music piece and streaming services

being designed to fit with for pop music relevant metadata, streaming services turn out ill-adapted for the use of (experienced) classical music consumers (Gardner, 2015; Tsioulcas, 2015). It is often difficult to find the right piece, since the variability is lower in classical music and data such as the conductor and place of recording are more important than the name of the 'song'. Furthermore, the before mentioned requirement for high sound quality by many classical music consumers is not met by most streaming services (Tsioulcas 2015). Lastly and similar to downloading, streaming is a digital form of acquiring music which requires a certain level of computer skills and knowledge, which are on general lower for people with a higher age. Together, these aspects lead to the expectation that streaming will be less popular as a substitution for CD sales among the classical music consumers and thus have less of an impact on the demand for physical music.

Hypothesis 4: In the CMRI, streaming is a less perfect substitution for other forms of music acquisition and has less impact on the elasticity of demand for CDs than in the pop industry.

2.3 The supply of music in a digital age

In the following paragraph the consequences of digitalisation for the supply and structure of the recording industry are discussed. The serious fall in revenues from record sales created an incentive for the recording industry to innovate and change its earning structures. Since the discovery of phonograph and the ability to record music, the recording industry has been an important segment of the overall music industry, complemented by the broadcasting and live music industries. The structure and output of this industry have been changing over time, with new technological innovations as primary catalyst for change (Tschmuck, 2006). In that sense, digitalisation can be seen as a further innovation, transforming the industry of recording music both in its production and distribution aspects. Yet, due to its disruptive nature it did not only cause changes in the technological aspects of the output, but had a more profound effect in which it forced the industry to change its business models (Moreau, 2013, p. 27).

Despite MP3 technology being developed in 1992, in 2004 only 1,5% of revenues in the music industry came from digital sales (Moreau, 2013). Record labels did attempt to compensate losses from CD sales with legal and paid download initiatives, but these did not succeed until the launch of the iTunes Music Store in 2003, which managed to offer what P-2-P platforms did before: a comprehensive music catalogue including licenses from all major

record labels (Tschmuck, 2012, p. 190 – 191). It was up to newcomers to create such a platform, since the major labels stuck to their old practices and spent the first years of the new millennium mainly on fighting piracy, thus creating opportunities for newcomers to the industry to gain market share with innovating platforms (Krasilovsky & Shemel, 2003; Moreau, 2013). Yet while iTunes and other services finally managed to reach paying customers, the technology of streaming already came up at the end of this decade. With streaming, which comprises both free access to music enabled by commercial breaks and paid services that exclude commercials and/or offer higher quality (Dang Nguyen et al., 2013), the industry moved away from the dominant "free-illegal versus paid-legal dichotomy" (Weijters, Goedertier, Verstreken, 2013, p.537). Last years saw a rapid growth in revenues earned from streaming services (International Federation of the Phonographic Industry [IFPI], 2017), finally creating revenues from digital music which the industry was eager to find in order to fill the created income gap (IFPI, 2011).

The record labels have been active in their pursuit of fighting piracy. Creative products, including music, tend to have high fixed costs and low marginal costs, which raises the issue of copyright protection (Waldfogel, 2011a). Only in a context of legal enforcement of this copyright remuneration for intellectual property is possible, a framework illegal piracy has put under pressure (Liebowitz, 2004). As "file sharing reduces the revenue available for any particular digital product (…) [o]n its own, this would tend to reduce the flow of new products, particularly if creators are motivated by economic factors." (Waldfogel, 2011a, p. 716). Theoretically, a slowdown of both number and quality of new works coming to the market is expected in order to reduce the costs, but Handke (2012) does not find such results empirically in a research done on the German music industry from 1984 to 2006. This can be explained by several interrelated factors. First of all, the theory of art for art's sake, holding that artists will produce their art also in absence of monetary rewards since their main motivation is of an intrinsic or artistic nature (Eikhof & Haunschild, 2007), can explain continued production by musicians. Record labels on the other hand are commercial businesses with profit as main goal, yet also for them Boureau et al. (2013) find in their research on French labels that while commercial output, referring to the amount of albums sold, remained stable despite digitalisation, the creative output, referring to the amount of new albums being produced, rose during this period. These empirical findings overlap with the theory of the long tail of supply, which predicts a business model where 'less is sold of more', a trend in the music industry that will be discussed later in this chapter in more detail.

Paschal and Rogers (2011) describe in their article about the 'new' music industry how the narrative about digitalisation emphasizes the 'story of decline in face of novel file-sharing technologies' and undervalues the possibilities digitalisation creates for single businesses as well as to restructure the whole industry (Paschal & Rogers, 2011, p. 17). For all three activities of the music recording industry, production, distribution and promotion, costs have fallen due to digitalisation (Bourreau, 2013; Waldfogel, 2011a), but it is argued before that for the CMRI efficiency improvements are hard to achieve due to the cost-disease, raising the question to what extent costs are saved in this sector due to digitalisation as well. Cost savings seem to come mainly from the distribution sector for which Berthon (2007) describes the development of 'the blue-eyed shop assistant in the local store to be replaced by a computer programme as intangible as the musical product it is dispensing.' (Berthon, 2007, p. 21). Thus, costs are not saved by making particular activities more cost-efficient, but by a gradual elimination of a whole chain of supply in distribution, being the record store and its personnel (Fountoukidis, 2015). The empirical study will look into these opposing effects of lower costs but assumed lower demand and to what extent the output of classical music labels on both commercial and artistic level have changed due to these phenomena.

Hypothesis 5: The commercial output levels of classical labels have remained stable, but with a higher artistic output.

Another possibility to uphold output levels is by collecting new revenues. Whereas paid downloads have never been able to offset the losses of CD sales, revenues from streaming have been rising on a fast pace, mostly since 2010 (IFPI, 2011, p. 7). Nevertheless, it is ambiguous to what extent classical music consumers are using these services given the discussed difficulties of these services for this genre. This is complicated by the low visibility of classical music on the big streaming services (Dang Nguyen, 2013). Despite the possibilities of reaching a global audience offered by streaming services, such big numbers of music are offered on these platforms that it is even harder than before to be noticed, especially for classical music. As Nguyen concludes, 'access does not mean visibility, and for niche content or unknown artists, attracting the attention of Internet users is still difficult on platforms which offer millions of videos and songs' (Nguyen et al., 2014, p. 326). Lastly, where reimbursement for artists being consumed on these services is already a point of discussion in the popular music industry, the revenues for the CMRI can be expected to be

even lower due to the dominant payment per song and generally long movements in classical music compared to average pop songs.[4]

Hypothesis 6: Streaming does not provide a significant source of income for the CMRI.

Yet the biggest rise of income in the last decade has come from the revenues earned from live music, a sector that used to be separated from the recording industry. The revenue gap caused by digitalisation created an incentive for the industry to put more focus on the live aspects of music. For this to happen, an interplay between rising demand, growing supply as well as a restructuring of the industry was crucial. Recorded music used to be the core of the music industry in which live music performances were mainly seen as promotion for the album (Montoro-pons & Cuadrado-garcía, 2011, p. 20). In today's music industry, this situation is replaced by a system in which live music represents the core activity of musicians with recorded music as a promotional tool for these shows (Tschmuck 2006, p. 193; Montoro-pons & Cuadrado-Garcia, 2011, p. 20l1; Brenner, 2017). From the supply side, the growing relevance of the live aspect of music makes sense in the situation of falling revenues from recorded music and is enabled in part by the surge of festival supply, also called festivallization. Recent years saw an enormous growth in the amount of (music) festivals (Bongers et al., 2006). Even though there are doubts to what extent the public is in fact consuming music or rather a generic festival experience to which music is just a side or complementary good, the festival industry provides a significant source of revenues for the music industry (Brenner, 2017).

At the same time and despite the financial crisis, demand for live music rose as well. In a 2001 article economist Earl applies Simon's travel theorem (Simon, 1991) to the case of live music in order to explain its seemingly inefficient consumption in terms of time and costs compared to the less costly recorded music. He concludes that live and recorded music are separate products that can interact as substitutes, complements or even completely separated markets depending on the type of consumers and level of need fulfilment (Earl, 2001). Empirical evidence shows that in the last decade not only ticket prices, but also the amount of touring activities of musicians has grown. Together with the empirics on rising consumption of music, albeit through piracy or free streaming, this indicates that recorded music does not act as substitute for live music, but rather that the two interact as complements (Montoro-pons

[4] Most streaming services, Spotify included, pay a fixed amount per song regardless of its length.

& Cuadrado-garcía, 2011; Krueger, 2005). As a result, the music industry which used to be dominated by the recording music industry, with live music as a promotional complimentary good, has turned to an industry where live performances form the core business, with recorded music as complementary, promotional product. Because demand and supply structure as well as traditions and habits concerning the consumption of music both live and recorded are different for classical, the empirical research will look into the extent to which this shift in importance from recorded to live music is visible in the classical field, looking at both its importance for revenue streams as well as value in the eyes of the practitioners.

Hypothesis 7: The classical music industry has witnessed a similar conversion of the relationship between live and recorded music, with live taking over in importance from recorded music both in financial terms as in valuation.

This increase in supply of live music led to a restructuring of the industry on a legal and contractual level. Whereas music labels were primarily involved in the recording business, currently they are more active in the live spectrum of the music industry. So called 360 degree deals, contracts that comprehend revenues earned from all activities connected to a musician or band including live performances, are becoming increasingly popular. This new contract form is a tool for record labels to take back a part of the market share that had been lost from the CD market to the digital (unauthorized) file sharing (Stahl & Meier, 2012). It is also a stratagem to ensure their own raison d'etre which used to be the high initial and fixed costs for the production and distribution of albums and has disappeared due to technological innovations enabling artists to employ do-it-yourself (DIY) practices (Meisel & Sullivan, 2002). With the different demand and cost structures of the CMRI, the question remains to what extent labels have been able or even willing to incorporate these live revenues of classical music into 360 degree deals.

Hypothesis 8: In the CMRI a similar trend towards 360 degree deals by labels is witnessed.

The new industry structure witnesses two opposing trends. Vertical integration has led to a structure with an integrated business model where all value generated by the music is collected by and concentrated in the recording companies (Tschmuck, 2006, p. 194). This is complimented with horizontal integration with an ongoing concentration of recording rights into the hands of a few *majors*, large recording labels owned by media conglomerates and

possessing the majority of resources and revenues of the music industry (Mulligan, 2017), resulting in 2011 in an oligopoly market structure with only three majors, Sony, Universal and Warner, dominating the market (Tschmuck, 2006, p 181). Thus, in both vertical and horizontal level, the music business is becoming more concentrated with artists being contracted for their full range of activities instead of only recording by one of the few majors. The extent to which this holds for the CMRI will be tested in the research.

Hypothesis 9: The CMRI witnesses a similar concentration based on both vertical and horizontal integration of the industry.

Also on the level of individual musicians concentration takes place. Rosen's superstar theory explains how a few people become very successful and dominate the market (Rosen, 1981). Popular music, being an experience good in the sense that you enjoy it more when you consume more, but mostly in the sense that you need to experience it in order to fully grasp its utility, is assumed to be characteristic for the phenomenon to take place. A successful artist becomes even more successful due to the (positive) information available about this act and the higher search costs involved in finding less successful artists, resulting in a skewed industry with a few highly successful *superstars* (Crain & Tollison, 2002). This process is assumed to be reinforced in the digital age due to the amount of information available online, the low marginal costs for additional production and the global access to music (Dolfsma, 2000). In that sense a concentration in the market is expected also on the musicians' level, which will be tested on its validity for the CMRI in the empirical analysis.

Hypothesis 10: The CMRI sees a concentration in the output of artists with successful artists gaining relatively more market share.

In contrast with this concentration a scattering of the market is described with the upsurge of independent labels and DIY artists, a trend enabled by the progressing technical and digital innovations, lower costs and easier accessibility of production, distribution and promotion means, which lowered the barriers to entry (Tschmuck, 2006; Hesmondhalgh, 1999). Different definitions of independents circulate, but they are defined for this thesis as those labels not affiliated with a major label for production, yet possibly making use of major distribution companies (Hesmondhalgh, 1999, p. 37). The new industry structure consists of a few very big actors, the majors, controlling the majority of the market, combined with a large

base of small, independent artists and labels providing for the niche markets (Waelbroek, 2013). This industry structure brings forth an output structure that is referred to as the 'long tail', in which the verdict is 'selling less of more' (Anderson, 2008). Stores used to be constricted by the physical shelfspace, but with online stores, downloading and streaming options these restrictions become less important, a wider variety of products can be offered and niche markets can be better served. Because of the low distribution costs and virtual evasion of geographical borders, music that would otherwise not reach a big enough audience to exist, can now get to people around the world in order to break even. Besides concentration, digitalisation thus also resulted in a broadening of the possibilities for small and independent artists and the spectrum of supplied music. Assuming these developments affect the CMRI in a similar fashion, a wider diversity of music being recorded would be expected in this genre too.

Hypothesis 11: The CMRI witnesses a similar phenomenon of a long tail of supply.

Some research is done on these trends for CMRI in specific, with several articles written about orchestras in the U.S.A. employing DIY practices for their recordings (Bambarger, 2000; Weinman, 2011). The motivation for this is said to be the retrieval of record labels from the CMRI, forcing the orchestras to take recording into their own hands. As a consequence, most albums issued by such DIY orchestras are live recordings, based on the lower costs and techniques involved. This does not only lead to a cultural shift in supply, but is also argued to have led to a decrease in the quality. Whereas an idea or concept first had to be accepted by a record label, it can now be recorded right away. In other words, by orchestras going DIY a gatekeeper for the industry has fallen away, which may lead to a decline in quality. Lastly, it may impact the programming decisions of the orchestras, given the close connection to live and recorded music.

There are some profound differences between the classical music industry in the U.S.A. and the European continent, regarding amongst others the concentration, travel distances, subsidy structure and private philanthropy culture that affect the economic and practical culture of these industries. For that reason, the empirical research will investigate the level to which the trend of DIY and live recordings is noticeable among European orchestras in a similar fashion and what the opinions of field experts is on the quality of the output.

Hypothesis 12: In the CMRI, a trend is witnessed towards live instead of studio recordings.

2.4 Conclusion theoretical framework

As little as has been written about digitalisation in the CMRI, so much has been written about digitalisation for the music industry in general. In order to create a context for the empirical study, the most relevant developments in the pop industry have been analysed as well as the differences between the classical and pop industry in order to come to a set of hypotheses on the effect of digitalisation in the CMRI. Digitalisation has been very disturbing for the music industry, causing a complete restructuring of the industry. Despite some ambiguity in the precise effects of piracy, its sampling effect and the changing function of CDs in our current society, it is accepted that due to digitalisation revenues from recorded music dropped majorly. However, the end of the music industry, as anticipated in some early studies on the effects of digitalisation, has far from realised. Not only were labels able to cut on the costs, they found new sources of revenue in streaming and, more importantly, live music, which now became integrated in the business model of the labels. The superstar model led to a concentration on both horizontal and vertical level of labels and artists, even though lower barriers to entry led to a contrary development with a rise of independent labels, DIY artists and a long tail supply targeting the niche markets. Although there is some research describing a similar trend in the CMRI with American orchestras 'going DIY', the other development have not been tested in this sector. The inherent differences in both the audience, in terms of demographics and preferences, and the industry structure, with much larger ensembles, consequent problems with the cost-disease, subsidies and low variability, lead to the expectation that overall different outcomes of digitalisation and its effects on the CMRI will be visible in the empirical study.

3. Methodology

For this research a mixed method approach is used for which a dataset is created based on reviews of classical albums in a Dutch classical music magazine as well as qualitative interviews with professionals in the industry. This section expands upon the different methods which together form a comprehensive mixed method approach employed for an exploratory analysis of the effects of digitalisation in the CMRI.

The central question of this study is how the classical music recording industry has been influenced by digitalisation. More specifically, the effects as elaborately studied in the pop music industry are juxtaposed with the situation in the classical music industry in order to establish to what extent similar effects can noticed in this genre. In this research, a special focus is given to (symphonic) orchestras within the classical music sector and how their practice has changed as a consequence of this digitalisation.

3.1 Methods and operationalization

Despite the extensive research on digitalisation and its effects on the music industry, most research has been focused on the pop music industry specifically or the music industry in general. In the latter case, classical music is included but due to its limited market share in the overall music industry it is difficult to distract meaningful conclusions from such research. This research will therefore be of an explorative character and employ a mixed methods approach to give a comprehensive analysis of the current situation. With the lack of research to build on as well as limited availability of market data, it is valuable to take data from several sources, both qualitative and quantitative, in order to create a comprehensive information base to perform the analysis upon. Despite the lack of data and research into this subfield in specific, there is an extensive theoretical basis for research on digitalisation and the music industry in general. Therefore, despite its exploratory character, this research is of a deductive nature, assessing the reliability of a developed theory with the use of empirical research (Babbie, 2011). Below the different analyses will be discussed separately before discussing the overall limitations and expected results of such an analysis.

3.1.1 Quantitative analysis

A quantitative longitudinal trend study has been performed on the basis of a dataset created from albums reviews published in the Luister, a Dutch classical music magazine, during a timeframe of 18 years, ranging from 1999 until 2016. A trend study is 'a type of longitudinal study that examines changes within a population over time.' (Babbie, 2011, p. 111). Each issue of the Luister contains reviews of newly released albums, leading to a dataset comprising 1411 individual cases coded on a range of variables.[5] The Luister is a magazine that hires independent journalists on freelance basis to write the reviews. While the experts are independent, the magazine takes revenues from advertising and additionally there is the possibility of attempts by labels or industries to 'capture' the experts in order to influence their writing (Reinstein & Snyder, 2005, p. 28). Nevertheless, in accordance with the academic consensus, the experts and their reviews are valued as relatively objective and an important and valuable source of information for trends in the market (see e.g. Reinstein & Snyder, 2005; Clement, Proppe, & Rott, 2007; Eliashberg & Shugan, 1997). The objectivity is further improved by the high number of entries and distance that has been maintained between the management of the magazine and the reviewers. As a commercial enterprise a tendency can be expected to have a bias for reporting on the bigger or more popular releases, a factor that cannot be avoided in any other way, but is taken into account in the interpretation of the results. Since this study attempts to create an insight in trends in the market, for which the demand developments and thus the popularity of certain music, artists or releases is of importance, this bias towards the more popular releases does not harm the analysis.

The sample consists of all album reviews of one issue of each year, starting in 1999 based on the accepted point in time for digitalisation to take off. Of each year the October issue has been used, containing on average 78 reviews each. An independent samples t-test on the amount and genres reviewed in the first three years indicated October as the most average. This can be explained by the absence of any big events in this or the following month, such as Christmas with gift-giving or Eastern with the high popularity of the Passions in the Netherlands, which could have created a bias to certain albums. This sampling method resulted in a dataset of 1411 individual cases coded on several variables, which was further developed in a year-based dataset for which the valid percentage of each variable is used. This year-based data set consequently consists of 18 cases and is, unless otherwise stated, the source for all statistic tests that are run.

[5] For a full code book, see Appendix A.

In order to smooth out the effect of minor variations in the data resulting from outliers, the percentages of the compiled year-dataset have been processed in order to create 3-year moving averages. Besides the smoothing of irregularities, moving averages have as a benefit that graphics are visually more understandable and show the long-term trends rather than periodical fluctuations (Armstrong, 1949, p. 10). Based on the length of the series and the degree of smoothing desired, the lowest-item average possible has been used in order to prevent too much data lost in the beginning and end of the series.

Each review is coded on several variables regarding artistic aspects such as the type of music recorded, by what musicians and what creates unity within the album as well as variables on the type of label and format and the information and image on the albumcover. Most importantly, the variable digitalisation is not being measured directly, but by time as its proxy, based on the assumption that the level of digitalisation has increased over time. In appendix A a full code book is included, consisting of all analysed variables and meaning.

3.1.2 Qualitative analysis

In addition to the quantitative content analysis of the album reviews, interviews have been conducted with six actors in the field. These in-depth interviews are held with the use of a semi-structured interview guide (see Appendix C) as guideline.[6] The interviewees are chosen by a non-random probability sample through a combination of snowball and … sampling. As the focus of this is study is on symphony orchestras, interviews are held with employees involved with the recording activities of four different orchestras, being the Royal Concertgebouw Orchestra, the Rotterdam Philharmonic Orchestra, the Radio Philharmonic Orchestra and the Amsterdam Symphony Orchestra. All orchestras fulfil a different role in the Dutch classical music landscape and have different attitudes towards recording and releasing of music. A more extensive description of the cases, can be found in Appendix B. Next to the orchestras, one interview is held with editor-in-chief of the Luister, Jan Vredenburg, in order to reflect on the overall changes in the market and give more information about the working of this magazine in relation to their reviews. Lastly an interview has been conducted with Merel Vercammen, an independent professional violinist, in order to include the perspective of the independent solo and ensemble musician. By both her personal experience and academic research Vercammen could further highlight the ongoing developments regarding the attraction of young and new audiences.

[6] All interviews are recorded and available at request by the author via saskia_groot@live.nl

3.2 Hypotheses

Based on the literature review, the following set of hypotheses is developed. For the empirical investigation, the hypothesis are combined and discussed by topic.

- Due to the cost disease, the CMRI witnesses a decrease in releases of records of bigger ensembles, such as symphonic orchestras and opera productions, compared to records by smaller ensembles or soloists.
- In the CMRI a lower price elasticity of demand for CDs and SACDS leads to less substitution of physical music by digital music.
- The CMRI has seen a similar shift of the function of the CD towards an experience good.
- In the CMRI, streaming is a less perfect substitution for other forms of music acquisition and has less impact on the elasticity of demand for CDs than in the pop industry.
- The commercial output levels of classical labels have remained stable, but with a higher artistic output.
- Streaming does not provide a significant source of income for the CMRI.
- The classical music industry has witnessed a similar conversion of the relationship between live and recorded music, with live taking over in importance from recorded music both in financial terms as in valuation.
- In the CMRI a similar trend towards 360 degree deals by labels is witnessed.
- The CMRI witnesses a similar concentration based on both vertical and horizontal integration of the industry.
- The CMRI sees a concentration in the output of artists with successful artists gaining relatively more market share.
- The CMRI witnesses a similar phenomenon of a long tail of supply.
- In the CMRI, a trend is witnessed towards live instead of studio recordings..

3.2 Validity and reliability

Whereas quantitative research in general scores high on reliability, meaning the extent to which the research is able to be generalised in a reliable manner, but lower on validity, meaning the level to which the results correspond with a truthful representation of the reality, qualitative research tends to have the opposite results (Babbie, 2011). By combining both methods, this research overcomes part of the problems related to reliable and valid analysis. Although the quantitative data are collected over a long period of time and a high number of cases is collected, some variables are scoring lower on validity since they only indicate certain trends as a proxy instead of confirming causality with certainty. By linking all topics dealt with in the quantitative data to the interview analysis results these issues are overcome. Because of their personal involvement and level of expertise, validity for the qualitative data is high.

The sample of interviewed people is kept small in order to enable in-depth interviews to increase validity of the overall research. Although this decreases some of its reliability, here as well the crosslinking with quantitative data covers this pitfall. Furthermore, the interviewees are chosen on the grounds of the different characteristics of their orchestras and its relationship towards recording, as further explained in the case descriptions in appendix B, in order to create a comprehensive view of the industry as a whole. In conclusion, reliability and validity issues are expected to remain very limited for this research.

4. Results and discussion

Two research questions are central to this thesis: to what extent can developments witnessed in the popular music industry be apposed in the CMRI and how have orchestras (in the Netherlands) adapted their practices to this new industry model? In this chapter the results of the research of both quantitative and qualitative data are discussed and connected to the theories and hypotheses developed in the theoretical chapter.

4.1 The classical music industry and its consumers

In the theoretical framework the characteristics and demographics of the classical music audience as written about in the existent literature have been described. In general, most interviewees agreed with this description, mainly referring to the relatively high age and education of the average classical music visitor as well as the high valuation of sound quality and sound systems, which was mostly referred to by the Luister-editor. Although the high age is accepted by the industry experts as a challenge, they were, for different reasons, still relatively positive about the future. One orchestra mentions to attract enough visitors despite these challenges, but also adds that much attention is paid to education and attracting younger audience for the long the long term viability of the orchestra itself and demand for classical music in general. Another interviewee refers to the fact the classical music audience has always been relatively old and this on itself also creates stability in the industry. The expectation they expressed is that the relatively high age will not further slowdown digitalisation in this industry because within the next generation also the older people will be used to the use of computers and digital means. In respect to the demand for recorded music consumption the experts argued the classical music consumer to be different from the popular culture consumer, but were in those case mostly referring to what they called the ‘die-hard or core fans’, ‘top 5%’ or even ‘hoarders’ about whom the assumption is that they will continue to buy CDs based on the strong valuation of this music. In the words of one of the interviewees, ‘these are really a different type of consumers than those for the pop music’. It can be concluded that while the relatively old age of the classical music audience presents the industry with a challenge, it is not seen as a problem to the experts and their distinctive characteristics can also result in higher demand based on the high involvement with the art form.

4.2 The album as an experience good

To what extent has the consumption and function of a classical music album changed as a consequence of digitalisation and does the CMRI see a similar growing relevance of recorded music as experience good? These questions are investigated from different angles, looking at the sort of albums released, the music that is recorded and the popularity of vinyl.

An important aspect influencing this phenomenon is the variability and substitution between classical music albums, which creates a different interplay between supply and demand than in the pop industry. The qualitative analysis shows that in general variability between albums in the CMRI is assumed to be lower than in the pop industry. As one of the interviewed experts mentions: "In the classical music this is different, because you don't make the music yourself, you always play music that's already recorded by others as well." Whereas the low variability itself is inherent to the CMRI and not caused by digitalisation, the digital means increase the accessibility of music and enable consumers to easily reach the extensive catalogue of recorded music. Thus for an orchestra it has become more important to distinguish the new record from the rest, by marketing or artistic content. Another interviewee exemplifies this further, stating that with the easy accessibility of digital music, also die-hard classical music consumers will at some point question the marginal utility of buying yet another Mahler recording. This leads orchestras to put more emphasis on marketing, but also try to create distinguishability with special releases.

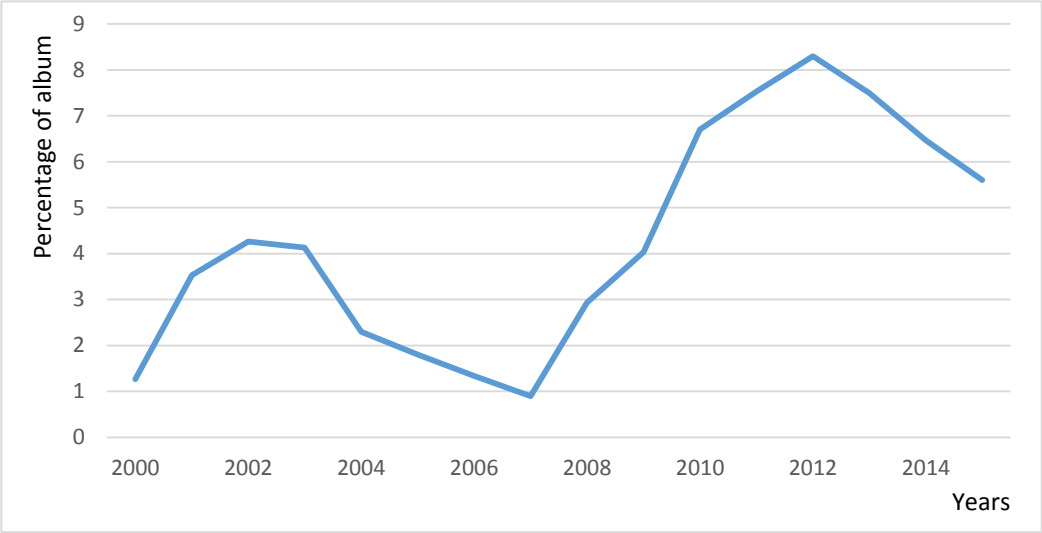
In popular music a trend is described for more deluxe boxes and gift sets since the advent of digitalisation, based on the fading function of a CD for the sole containment of music and the growing emphasis on its utility based on gift giving or memory value. The expectation is that this development will not be as strong in the CMRI, due to the remained relevance of the CD as a format on itself, yet the above analysis assumes the CMRI to also move to more distinct, niche market recordings.

Since deluxe boxes and gift sets are mostly multiple CD boxes, a bivariate correlation analysis between time and the amount of albums released with more than 2 CDs has been run. In our sample, the amount of one- or double CDs has grown over time, with a moderate and positive relationship between time and amount (r = .461, p > .05), and the amount of multiple CD releases has decreased, with a moderate, negative relationship between the time and amount (r = -.467, p > .05), but as the p-values show, this relationship cannot be assumed to statistically significant for the CMRI. In proportion, the amount of single or double CDs is much higher than of multiple CD boxes, with an average of 95,57% of the CDs falling in this

category. Interestingly, the proportion of single or double CDs was relatively stable around 94% (with 2% above and below) from 2000 till 2010, but went up to 96% in 2011 and didn't drop under the 97,2% in the following years years. Taking the sample from 2005 to include six years before and after this breakyear, a bivariate correlation test shows a significant very strong correlation between time and the amount of multiple CD boxes (r = -.840, p < .01). These results contradict the expectation for more multiple CD boxes, based on the shifting function of CDs as gift giving or experience good and constitutes a distinction between the pop and classical recording businesses.

Another way to look at the changing function is to focus on the content instead of the amount, with the expectation that albums will become more distinctive in order to be marketed as a special edition. This is tested with the variable UNITY, referring to the aspect of the album that creates the unity, with the research hypothesis H0: In the CMRI, there is no relation between the UNITY and time and a directional H1: In the CMRI, there is a positive relation between albums with a distinguishing UNITY variable and time. The majority of albums are recorded by the same executing artists and (if applicable) conductor, but contain multiple pieces by one or more composers (respectively 44,4% and 18,09% on average in the sample). Also a recording of one piece is relatively common, with on average 28,18% of the reviewed albums in our sample. The expectation is to see a trend towards albums that are more distinctive and can be marketed as special editions, such as collection albums containing all works from a certain conductor, soloist or style instead of a regular release of work by one or more composer. The one-tailed, bivariate correlation analysis shows statistically significant results for a strong, positive relationship between time and unity by a single piece (r =.668, p < .01) and unity by a certain style or theme (r = .701, p < .01) as well as a moderate positive relationship between time and unity by an event (r = .584, p < 0.01). Graph 4.2.1 shows the moving average of the percentage of albums reviewed on which diverse songs by multiple artists are recorded with a certain style or theme creating unity within the CD, a category that saw a strong growth over time, mostly since 2007. Even despite a small slow down since 2012, the moving average proportion of albums reviewed in the category did not drop under 5,6% anymore, which is already 1,4% higher than the 2002 peak.[7]

[7] See appendix D1 for percentages per year



Graph 4.2.1: Moving average of percentage of albums with unity category 'theme/style'

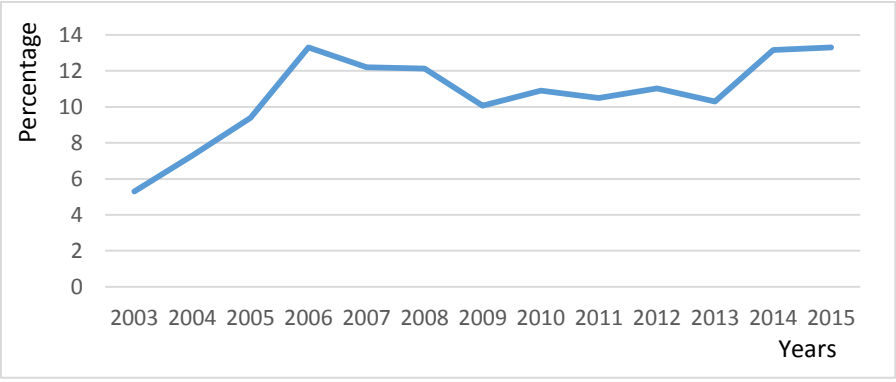
Simultaneously, a strong negative relationship is found between time and unity by executive and composer, but different pieces (r = -.780, p < .01), unity by the soloist (r = -.692, p < .01), unity by the executive artist (r = -.609, p < .01) and unity by conductor (r = -.721, p < .01).[8] Especially the albums with different pieces by different orchestras recorded under the lead of one conductor have become less, with zero album reviews of such albums in the last 7 years. This overlaps with the trend of major labels, who used to have record deals with conductors, pulling out of the CMRI, as will be discussed in more detail further on.

These results indicate that the CMRI in the last 18 years saw a trend towards albums being recorded in order to be marketed as a distinguishable product compared to the rest of the offer, a strategy that makes sense in a market that is under pressure and characterised by a relatively low level of variability and high level of substitution between albums. It must be noted that not all efforts of orchestras to distinguish their releases from the mass are expected to be visible in these data. One of the orchestras interviewed mentions for example their attempt to innovate and create extra value by distinguishing themselves on other aspects rather than content, such as societal value by connecting to the city and the album as experience good with high quality live recordings, variables that are not visible in the UNITY analysis that is run on these data.

[8] Appendix D2

4.3 Sound quality and digital formats

From the theoretical framework the assumption is developed that classical music consumers place a high value on the quality of the sound of recordings. This is confirmed by the industry experts, although some also point at the subjectivity of this quality and argue the difference of a SACD in sound quality is debatable. Two other interviewees on the other hand refer to the SACD specifically for its higher sound quality, although with the addition that it is mainly the hardware that creates a difference in sound perception. Luister-editor Vredenburg confirms the importance of hardware on which the magazine spent much attention in terms of reviews and discussion of sound devices. This high valuation is enabled by demographics of the classical music consumer being on average higher educated and earning enough to afford such devices. Based on this the hypothesis is that the SACD has been successful in the CMRI and over time a growth in its market share is visible in the data. In order to test this, a bivariate correlation analysis between the time and percentage of albums released on the SACD format results in a statistically significant, strong and positive relationship ($r = .716$, $p < .01$). Because SACDs were developed in the beginning of this millennium, only the data after 2001 are included in this test. Especially given the disappointing performance of the SACD in the popular music genre, these results confirm the high valuation of sound quality by the classical music consumers. As can be seen in graph 4.3.1 showing the moving averages of the percentage of albums released on the SACD format, after the introduction the CMRI saw a rapid growth in the number of SACD released, after which it stabilised around an average of 11,92% of the releases since 2005. Despite multiple possibilities to acquire music online for free or cheaper as well as to buy regular CDs for a lower price, SACDs took a significant part of the market share, confirming the high valuation of sound quality by CMRI consumers.[9]



Graph 4.3.1: Moving average of percentage of albums reviewed that are released on the SACD format

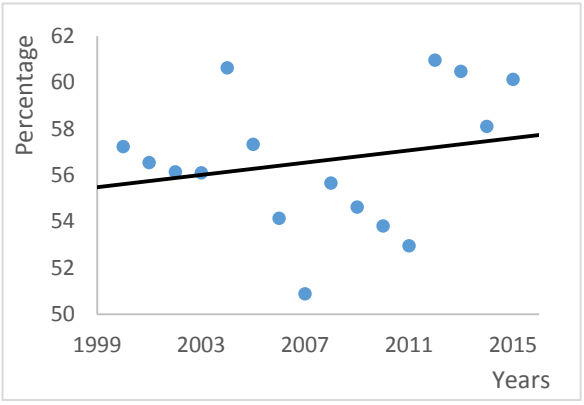
[9] See appendix D3 for percentages of the different formats in the sample

In contrast to the SACD, most digital services use highly compressed files reducing the quality of the sound. That leads all interviewees to argue downloading and streaming have affected CD sales in the CMRI less than in the pop industry. As one of them argues, this is caused by what he sees as real differences between the pop and classical music consumers. This does not mean he believes nobody downloads classical music illegally, but people doing this existed before the digitalisation as well, copying CDs for example, and these are more exceptions. Piracy and downloading is not done on such a big scale as it is done for pop music. The interview analysis shows that there is agreement on the fact that revenues from CD sales have decreased drastically in the last decade, but the experts do not refer to piracy as the cause for this crisis in the CMRI. Rather, decreasing subsidies, changing deals with labels and overall too high costs and too low demand are mentioned as causes for the decrease in sales.

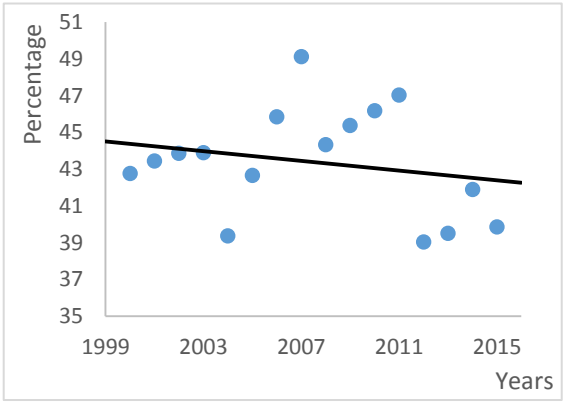
The use of digital music is agreed by the interviewees to be further delayed or impeded not by the quality of the offer itself, but the possibilities to connect it to their sound system. Even when the file itself is of high quality, such as FLAC files which are increasingly available, this is only noticeable when played through a high quality sound system. Once money is invested in a certain sound system which is not yet able to be connected with mobile phone or computer for the use of digital files, the switching costs are relatively high and therefore more likely to be postponed (Towse, 2010, p. 389). This can explain why even though there is the apparent willingness to spend money on recorded music and demand for high sound quality legal, high quality paid downloads have not been successful in the CMRI either and revenues from digital music have been marginal until at least 2015.

4.4 Cost-disease, group size and profitability in the CMRI

Based on the available literature, the hypothesis is developed that as a consequence of the cost disease, which is further reinforced by digitalisation, more recordings will be made by smaller ensembles rather than the big ones such as symphony orchestras or opera ensembles. To test this, each review is coded on the group size divided into five categories. Graphs 4.4.1 and 4.4.2 depict in a scatterplot the results in our sample after combining the smaller groups of 1 – 34 people and bigger groups of 35 – 100+ people, confirming the trend for smaller groups to gain market share, $r = .238$.



Graph 4.4.1: Scatterplot of moving average percentage of albums recorded by 1-35 people

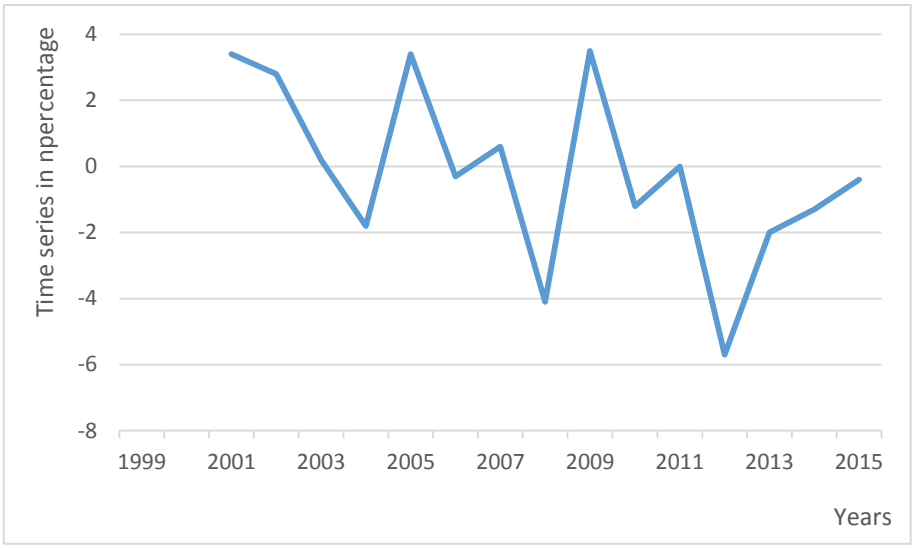


Graph 4.4.2: Scatterplot of moving average percentage of albums recorded by 35+ people

A one-tailed bivariate correlation test shows that there is a weak, positive relation between time and the albums recorded by smaller groups (1 – 9 and 10 – 34 people), a weak, negative relation for ensembles having a middle size (35 – 59 people) and a weak, but relatively stronger, negative relation with the big ensembles (60+ people), yet these findings cannot be assumed statistically significant for the CMRI, r = respectively .238; -.151; -.206, $p > .05$.

An interesting aspect to point out is that the percentage of albums recorded by the biggest size category (100+ people) saw the biggest drop in the years following the financial crisis and the subsequent subsidy cuts. In 2008 its share within the sample still went up, which can also be explained by the relatively high amount of DVDs issued that year, being mostly opera productions. In 2009 the total amount of albums released by this group size went down by 9.7%. Graph 4.4.3 shows in a time series analysis the growth of the percentage of albums within this category per year. After 2009 the difference does not get above 0.0% anymore, indicating a continuous decrease in the market share of this group size.[10] Although full causality cannot be proved here since more factors can influence this outcome, it is an indication that confirms the assumption of the negative impact of lower subsidy levels on the output of big ensembles.

[10] See appendix D4 for percentage of albums by groups of 100+ per year



Graph 4.4.3: Time series analysis of album reviews of albums recorded by 100+ people

This assumption is further confirmed in the qualitative analysis with an interviewee claiming a growth of ensembles and quartets can be noticed as a consequence of decreased subsidy levels for classical music, which have hit the big ensembles most. Other interviewees agreed that lower subsidies made it more difficult to maintain quality and full employment, forcing many orchestras to fuse or cut on labour costs. In this context the concept of '*kaartenbakorkest*' was raised, referring to an orchestra with high level of freelance or part-time employees. Regardless of the consequences for the output of the orchestras, this more importantly left many professionals without a job or only part-time employed, consequently leading them to enter the market for smaller ensembles, raising the supply from these groups. This phenomenon bears a resemblance to the phenomenon of studio musicians or session musicians in the pop industry, which are also individual musicians that enter the recording market for small ensembles or bands[11]. Whereas the studio musician is working on a freelance basis for different bands that need a certain instrumentalist, the tendency in the CMRI is for individual musicians who enter the market to look for an ensemble to join or start one themselves to play with for a longer period of time, rather than being hired for single recordings or performances on a more occasional manner as common in the pop industry.

[11] See for example Gander, J. M. (2015). Situating creative production: recording studios and the making of a pop song. *Management Decision, 53*(4), 843–856. doi:10.1108/md-03-2014-0165; Hull, G., Hutchison, T., & Strasser, R. (2011). *The music and recording business.* London: Routledge.

All experts confirm that is almost never profitable to make a classical music recording. Nevertheless, the output has remained stable for most of the organisations or even rose for some of having their own label. This can be explained by changing function of an album for an artist and connected motivation to record and release it. All interviewees, including Vercammen as a soloist, agree that the choice to record an album is not motivated by financial goals. Rather, in many cases the process costs more than it delivers in revenues. Two of the orchestra employees refer to the record deals that were common before, where the orchestra as a whole as well as the individual musicians earned money from the records, but stated that these contracts are not common anymore. For the current industry model, the interviewees mostly referred to recording an album for its promotional value. Although some doubt was expressed about the continued relevance of CDs, they all agree that having them is of vital importance or a minimum requirement for successful marketing of an orchestra. The Amsterdam Symphony Orchestra (ASO) is an exception here, since it does not release CDs anymore, but also the director of this orchestra endorses the value of having a CD. While the orchestra does not release new albums, it has recorded albums in the past which are still used for their promotional value. The publicly funded orchestras furthermore emphasized the motivation to record albums for their cultural and societal value, meaning its value for capturing the quality of the music and the type of music played at this point in time and reaching as many people with it, extending the impact of the orchestra outside of the concerthall.

4.5 Streaming and classical music: demand and supply

The above mentioned constraint in the demand for downloads based on the high standards for sound quality by classical music consumers holds similar for most streaming services who deliver music in a compressed quality. In the literature further complications for the use of streaming for classical music have been raised. The interviewees agree that streaming services are mostly relatively ill-adapted for the use of classical music and even though there are some initiatives for high quality services, specialised on classical music, these are not developed very far yet. One of the orchestras mentions as a consequence that ‘streaming up till now has not really influenced us’, which is the opposite of the situation in the pop industry, which is currently dominated by streaming. On the other hand, some refer to new consumers to be reached by streaming, especially through playlists which lower the barrier to entry for people with relatively little knowledge about classical music. These consumers are referred to in the

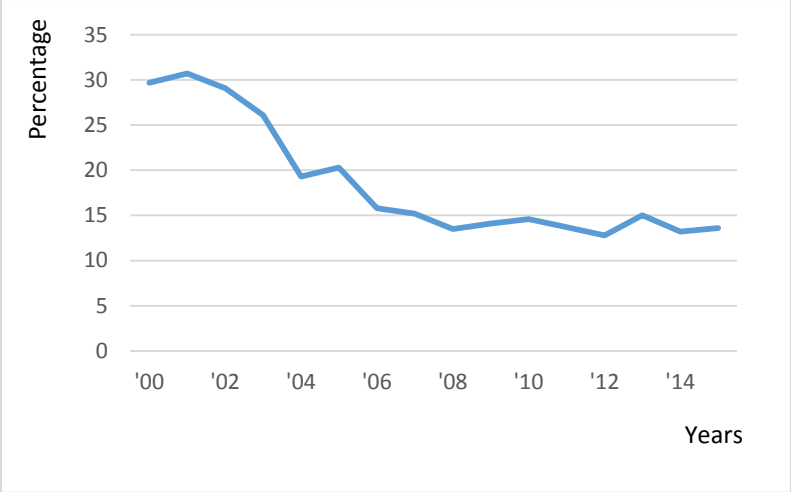
interviews as the ‘95%’ or the ‘fastfoodmarket’ for whom the lower sound quality is sufficient and there is no need to find specific editions or recordings, while for the remaining 5% or ‘hard-core’ fans there is a need for new, better equipped specialised classical music streaming services.

Despite these problems with streaming, most interviewees hold a generally positive view on the future and digital possibilities. Van Tilburg points out that since 2015 he has seen a big rise of revenues from digital music both for his label and orchestra. This trend is confirmed by other interviewees who argue streaming is increasingly used for classical music. The legality, easy accessibility and low cost can explain a part of this demand from established classical music consumers. Several interviewees point at new demand by consumers that did not use to listen to classical music or buy CDs before to add to this growing demand, although, as one interviews says: ‘I do not believe these growing revenues are only caused by new demand. It must also include existing classical music consumers switching to streaming services.’ Comparing the responses of the interviewees with market data on the revenues of streaming, it shows that this rise in subscriptions to streaming services in the CMRI have come later than to the overall music industry, for which in 2010 already 29% of the revenues has been earned from digital music and continuously high growth rates from digital music have been reported since than (IFPI, 2011, p. 5). Nevertheless, the report also suggests that most of the demand for streaming comes from consumers switching from piracy towards the legal form of consumption through streaming, which leads to lower subscriptions from classical music consumers since they have been less involved in piracy and downloading.

While almost all experts in conclusion argued that this lower barrier resulted in a democratising of the market and a way to attract new people, they were more divided in their opinions regarding the effect on their own supply. As mentioned, one of the orchestras regarded the streaming influence as nil. Others argued it to have more effect, but mostly as a form to reach people, not as a significant source of revenues. Here reference was made to the payment structures, which are especially for orchestras far from cost covering, mainly due to the amount of people involved and the low payment per song. Two experts mentioned that in the last years revenues have been rising, but it was agreed that this added up to a significant amount only for the more successful artists, while for the average classical musician or orchestra the music is only offered on these platforms in order to gain promotional value. This holds mainly for the subsidised organisations, who have also expressed to do not have financial rewards as main goal for their recordings, but rather to reach as many people as possible with their music, for which streaming services are well adapted.

4.6 Labels in the CMRI

In the pop industry a continuous trend towards both horizontal and vertical integration of the record labels is noticed since digitalisation has started. To test whether this is also the case in the CMRI we looked at the distribution between majors, independents and own productions. For the majors, which are the same ones as for the pop music industry, horizontal integration has occurred resulting in only three majors from 2011 onwards, being Warner, Universal and Sony. In terms of market share, the data show that the percentage of albums from either a major or one of its sublabels reviewed in the Luister have decreased in our sample, as visible in graph 4.6.1. A bivariate correlation test further shows that there is a significant, very strong, negative relationship between time and albums by majors and their sublabels, $r = -.874$, $p < .01$.[12] These data indicate that digitalisation did not lead to horizontal integration in terms of majors gaining more market share in the CMRI. This might be explained by the before established reality that making a recording in the CMRI is not a profitable activity, leading majors to pull out of this business.



Graph 4.6.1: Moving average of percentage of albums released by a major or sublabel.

For the level of vertical integration, meaning the bigger share of activities and associated revenues being concentrated in one company, the expert perspectives expressed in the interviews are analysed. Asked directly to the presence of such integration, all interviewees reject it. They do not see a trend in the CMRI for labels to incorporate more functions as is done under the common 360 deals in the pop industry. Some even mention that the opposite is

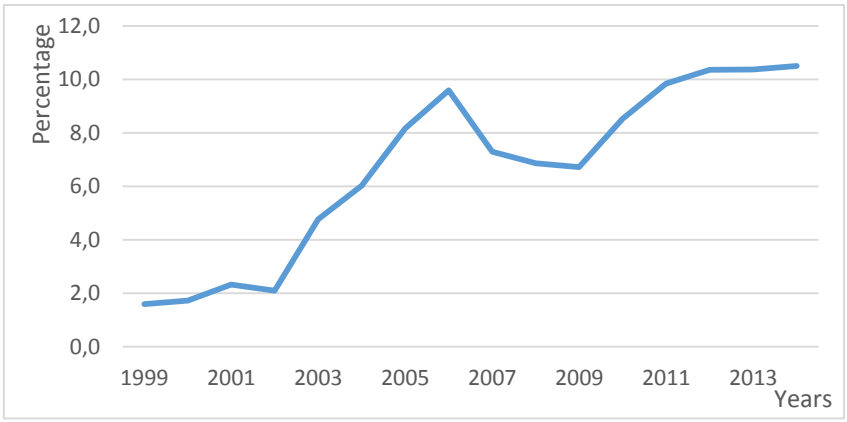
[12] Appendix D5

happening. Labels used to act as scouts and promote new talents, but now are only active in the promotion and distribution of 'ready-made products'. This seems to be most applicable to the soloist and ensemble scene, where it has become common for an artist to have to pay a label in order to record an album with them. For the orchestra industry the situation is slightly different. Most orchestras themselves do not have record deals with labels anymore, but conductors and soloists are still offered contracts sometimes. Orchestras as a consequence seem to have become more interchangeable, but it also led to more agency for the orchestras themselves. Before, labels used to have a big influence on what an orchestra was supposed to play, whether they had a direct deal with the orchestra or, more commonly, with a conductor who in turn had the power to decide or at least influence which pieces were to be recorded. Nowadays orchestras may seem to have less agency with the labels, but have more power and freedom in their programming decisions.

The above analysis suggests that live music remains a relatively separated activity in the CMRI with little horizontal or vertical integration, but this analysis is omitting the role of production labels owned by the orchestras themselves. As expressed by most interviewees, all major orchestras are gradually moving to a business model where live recordings are produced by their own label, although distribution is usually outsourced or combined with Naxos or other global distribution companies. Productions from these own labels are usually live recordings, with only very few exceptions for non-live recordings. In this manner live and recorded music have in fact become vertically integrated, although on a very horizontally dispersed manner. The quantitative data are inefficient for the analysis of the growth in live albums due to the inconsistent registration of the recording method. As graph 4.6.2 shows, a consistent growth of output by own labels is recognisable with moving average percentage moving from 1.6% of the reviewed albums in 2000 to 10.5% in 2016.[13] This is also shown by the statistically significant, very strong positive relationship between the amount of own labels and time, $r = .916$, $p < .01$.[14] A temporary dip can be seen around 2008, which can be explained by the economic crisis, which as explained before hit the orchestras relatively hard.

[13] See appendix D6 for percentages per year

[14] Appendix D5



Graph 4.6.2: Moving average percentages of albums released by own labels

4.7 Output of labels

As a consequence of digitalisation, the pop industry saw a growth of the long tail in the output of albums, leading to a more diverse and scattered supply. At the same time, despite changing types of albums, the overall output levels of labels remained stable.

A first sign of such a development in the CMRI, would be an increase in independent labels targeting niche markets. In congruence with the decreased market share of majors described above, independent have gained a bigger market share in the CMRI, shown in a strong positive relationship between the amount of albums by independents ($r = .649$, $p < .01$) and a very strong positive relationship between the amount of albums by own production labels and time ($r = .916$, $p < .01$).[15] The extent to which niche markets are targeted more as a consequence of digitalisation is tested with the correlation between contemporary classical music released and time, where contemporary music is taken as a proxy for niche market targeting. For the CMRI music by contemporary composers is defined as a niche market, both in the literature as in some of the interviews covering this topic, where it is stated for example that 'our orchestra now records more contemporary music, which is considered a niche market. We can do so now because we have the production and recording in our own hands.' At the same time, it is also expressed that conductors still have a big influence on programming and recording choices, not in the last place because they are sometimes under label contracts. This may reduce the effect of niche output due to goals and objectives held by the individual conductors. As one of the interviewees expresses 'These conductors have their own wishes as well, making the programming of contemporary music harder.' The quantitative data confirm the expectation for growing niche targeting with a one tailed

[15] Appendix D5

bivariate correlation test showing a strong, positive relationship between time and niche market as defined by contemporary music, $r = .756$, $p < .01$.

Another consequence of the high growth of own recording labels is a high amount of live recordings. Due to ambiguous and not systematic description of the recording method, a quantitative analysis to show this trend is not possible within this dataset, but the steady growth of own orchestra labels indicates this trend. All orchestras interviewed with an own label confirm that what they publish is always a live recording, as well as confirming that this is the practice of other orchestras too. All agree also on the fact that the making of a live recording is cheaper and possible due to technological innovations, but there are different opinions on the motivation for making these recordings. While there are some statements on the fact that live recordings are the only way to release any album based on financial grounds, others argue that the choice for a live recording is based on the motivation to distinguish the product and create more 'artistic value'. The live recording adds another layer of experience to the product and the choice for this method is based on an artistic motivation rather than financial. Nevertheless, also the interviewees referring to such artistic aspects as motivation for this recording practice mention in other parts of the interview that it has become financially impossible to record in the studio. This indicates that while all actors would prefer to make choices for what and how to record on artistic grounds, they are bound by the factual possibilities based on budgets. The Radio Philharmonic Orchestra is an exception to this analysis and is still able to make studio recordings, given the easy availability of a studio, sufficient subsidy levels to cover the costs and occasional record deals with labels. However, also in this interview the decline in possibilities to make studio recordings is mentioned as well as the awareness of their exceptional position in the market.

4.8 The interplay between live and recorded music

The pop industry has witnessed a conversion in relevance of live and recorded music, with albums acting as promotional tools for live shows and the two products interacting in a complementary fashion. The experts mention that such a conversion did not take place in the CMRI, since live music has always been the core activity of this sector. With the gradual aging of the audience and difficulties experienced by almost all of them to fill the concerthalls, it is therefore not to be expected that live music has been used to fill the gap of falling revenues from album sales like it has been done in the pop industry, even more since much of these revenues in the pop industry are earned on festivals, a trend that has not (yet)

extended to the classical music sector. Last years have seen some growth of classical music festivals, with in the Netherlands Wonderfeel and Klassifest as examples that attempt to resemble the atmosphere of a popfestival. The amount and visitor numbers witnessed in the pop industry are however far from reached.

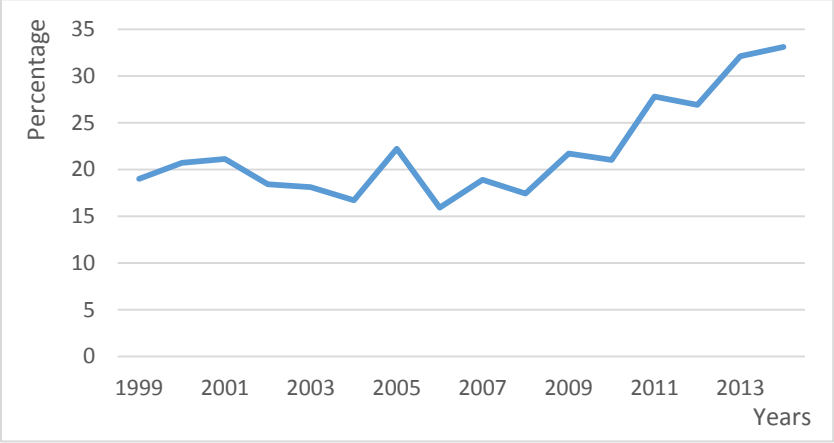
The complementarity between live music and recorded music visible in the pop industry is also referred to by the experts in the CMRI, mostly in the direction of live music visitors buying the recorded version afterwards. This coincides with observations in the pop industry, where most albums, especially vinyl, are sold on festivals or after shows. One of the interviewees refers to an orchestra in Germany that uses new digital recording and production techniques to record a concert and is able to sell CDs of that recording within half an hour after the show. Even though there is a high overlap in the content of the live and recorded product, sales of such CDs are very high and confirm that also in the CMRI CDs are increasingly bought for their value as a reminder of an experience. Also Vercammen mentioned to sell the majority of her albums physically to the audience after a live performance. In economic terms these are strong indications for live music and recorded music interacting as complements, mostly flowing from live music consumption towards recorded music consumption.

The live performance remains the core activity of the orchestras, in terms of earned revenues, but also as mission or objective of the organization, as deferred from interview quotes as ‘in the end, that is our main objective, reaching the people in the concerthall’, ‘live music is the core, recordings become more of a side product’ and ‘We can connect to people online to get them to offline activities, because that is in the end our business model, where we earn our money from’. While the increase in live recordings further connects the live and recording activities, it is, with one exception, strongly denied in the interviews that recording wishes determine what is programmed for the live performances. Although both are taken into consideration and combined to save costs, the programming precedes the recording decisions.

4.9 Artistic output

The extent to which the superstar model also holds for soloists in the CMRI is tested with the use of the variables on soloists, but no significant results are found in terms of a correlation between time and the amount of records with soloists or the type of soloists. Also no significant trends are found looking at the names of the soloists, who seem to be too divergent to result in significant statistic analyses. Yet concentrating on the role of soloists for

orchestras, a bivariate correlation test shows that there is a statistically significant, strong positive relation between time and the amount orchestra albums with a single soloist, $r = .718$, $p < .01$, as can be shown visually in graph 4.9.1. This stems with the previous analysis that the pressure on orchestras to distinguish themselves has grown, for which collaborating with a popular soloist is an option. This is confirmed in the qualitative analysis, where one orchestra mentions that soloists are the way for them to distinguish themselves, which is necessary since the current industry requires marketing '*op het scherpst van de snede*'. It is further added that due to digitalisation, visual aspects have become more important, leading to soloists being chosen not only on their play but also on their looks. The other orchestras mention a similar rationale for working with soloists, although it is stated that the initiative in those cases often lies with the labels who have a soloist under contract and for which they look for an accompanying orchestra. Despite the consensus among the experts on the growing importance of soloists, no statistically significant results can be found in the quantitative analysis of depiction on the album cover nor in the prominence or frequency in fond size of the album cover.



Graph 4.9.1: Moving average percentage of album reviews of albums of orchestras with one soloist

Looking at the level of concentration for orchestras instead of soloists, tests have been run looking at the top 20 orchestras of the world as well as Dutch orchestras and changes in their market share over time, but no significant results are found. This might be explained by the relatively low amount of cases by these orchestras, which in itself indicates that the superstar effect has not resulted in a strong concentration in the market of symphonic orchestras.

Looking at the album cover, the data show statistically significant relationships between the cover pictures and time. For the amount of album covers depicting the composer, a strong negative relationship is found with time (r = -.626, p < .05), from a moving average of 8,8% in 2002 to 3,4% in 2015.[16] Simultaneously a strong positive relationship is found for the amount of albums depicting the executive artist of the record (r = .654, p < .05), which grew from a moving average of 3,3% in 2002 to 6,5% in 2015.[17] These relationships confirm the before described development for higher importance for orchestras to distinguish themselves. With pieces of a certain composer already recorded several times, depicting the composer is not likely to create additional value. Nevertheless, no statistically significant results are found on any of the other variables based on the fond sizes and frequency, neither by bivariate correlation tests nor by ANOVA-tests based on separated album data. This might indicate that while slight changes in the industry are noticed directly by the involved people and thus shown in the qualitative analysis, these are not always translated directly into changes in the actual output.

[16] See appendix D7 for a full list of percentages per year

[17] See appendix D8 for a full list of percentages per year

5. Conclusion

What has been the influence of digitalisation on the classical music recording industry and how have actors in the field changed their practices consequently? This thesis used a mixed method approach combining six qualitative in-depth interviews with experts in the field and a quantitative content analysis of 1411 classical music album reviews since 1999 to map out these developments.

Comparing the CMRI to the pop industry results in several differences influencing the demand and supply of this sector. Not only are consumption patterns different due to demographic and priority differences of the consumers. Also the supply structure of the genre holds intrinsic differences, such as the average group size, but also its reliance on subsidies and a different stance towards concepts as covers, variability and authenticity.

This thesis has analysed the most relevant consequences of digitalisation for the recording industry, caused by the enormous popularity of downloading and drop in CD sales. As a result live music became more relevant, mostly visible in the conversed role of live versus recorded music, and in the last years streaming has started to take over in market share to fill the gap in revenues caused by digitalisation. To profit from these growing revenues from live and digital music, the structure of the industry evolved with more horizontal and vertical integration into the major labels, while simultaneously allowing independent labels and musicians to make use of digital and technological innovations to target the niche markets with independent and DIY productions, leading to a long tail of supply. To investigate the degree to which these developments have found their counterpart in the CMRI as well, this study looked at the output, sampled by album reviews in a Dutch classical music magazine *Luister* since 1999, and the practices and perspectives of actors in the field, focusing more specifically on the symphonic orchestras in the Netherlands.

What is found is that, presumably caused by the use practices and connected sound valuation, switching costs of sound systems and relatively high age of the classical music consumer, both downloading and streaming are less popular in this genre than in the overall music industry. CDs have remained more important as a format for the CMRI than the pop industry, with especially a rise in the amount of SACDs released. Yet, also for the CMRI, similar to the pop industry, a change in the function of CDs can be witnessed. CDs become more of an experience good, meaning that value is not only connected to its material utility, but also to other experiences or values, such as the memory to a performance, shown in high

complementarity between live and recorded music. Also in the CMRI more special editions, proxied by more distinctive repertoire being recorded, can be seen. This is expected to be reinforced by the relatively low variability between classical albums. With the increased supply, it becomes even more important to distinguish new records from the existing catalogue.

When it comes to the conversion of importance between live and recorded music, the CMRI has reacted different because live music was already the core activity of the industry both in mission and revenues of the orchestras. Nevertheless, live and recorded also in the CMRI act as complements and have become closer connected, especially since orchestras are increasingly recording live performances and releasing them on their own labels instead of being dependent on label deals. The trend towards independents and DIY productions as well as the long tail supply can be witnessed in the CMRI, similar to the pop industry, reinforcing the adage of 'selling less of more' to make money from recordings. The activities of the major labels have decreased and also the use of 360 deals seems absent to the CMRI. An explanation might be the average group size, being orchestras who are able to launch their own professional labels which is more difficult for individual artists. The own label recording live concerts has formed a substitute for the major label contracts.

Looking at the artistic changes in output, the CMRI sees an increase in output by smaller ensembles. This is not, as was expected, caused by a slow-down in production of the orchestras, because these continue to record despite the low returns since profit has not been their motivation to record in the first place. Rather, artistic, societal and promotional values are referred to as motivation for recording. Furthermore, a strong increase in the amount of live recordings can be noticed, which is possible due to the technological innovations, but also demanded because of the different values they represent, fitting with the changing function of CDs as experience good. Nevertheless, with the growing supply of musicians entering the market for small ensembles as a consequence of orchestras having to cut on labour costs and the further development of digital means for DIY production, a growth of DIY by individual musicians and small ensembles is expected, producing yet another supply that forms a possible substitute for orchestral recordings.

To conclude and looking at the future, the findings of this study indicate that digitalisation has influenced the CMRI, broadened the range of output and increased the agency of orchestras now owning their own labels. Nevertheless, the changes have not been as disrupting as for the pop industry due to the relatively low interest in piracy, downloading and streaming, but its lack of digital involvement seems possible to be resolved with new streaming initiatives for classical music, a young generation adapted to the digital means and fading out of the switching costs over time. Therefore, it is expected that also for the CMRI, digital music will keep growing in importance and market share and eventually also the classics are expected to increasingly go digital.

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Appendix A: Code book quantitative research

Variable	Meaning	Label	Value
YEAR	Year of review	1	1999
		2	2000
		3	2001
		4	2002
		5	2003
		6	2004
		7	2005
		8	2006
		9	2007
		10	2008
		11	2009
		12	2010
		13	2011
		14	2012
		15	2013
		16	2014
		17	2015
		18	2016
GENRE	Based on Luister categories	1	Orchestral Music
		2	Chamber Music
		3	Old Music
		4	Vocal Music
		5	Opera
		6	Organ
COMP.NAME	Name of the composer	-	String variable
COMP.TIME	Contemporary composer	1	Contemporary (still alive when recorded)
		2	Not contemporary
		-	Missing: multiple composer, unknown
EXEC.TYPE	Type of executive artist	1	Orchestra, symphonic
		2	Orchestra, chamber
		3	Orchestra, old music
		4	Orchesta and choir
		5	Solo piece
		6	Duo
		7	Trio
		8	Quartet
		9	Ensemble, 5 or more
		10	Ensemble, 10 or more
		11	Other, unknown

Variable	Meaning	Label	Value
ORCH.	Recording artist orchestra	1	Yes
		2	No
EXEC.SIZE	Number of people	1	1 - 9 people
		2	10 - 34 people
		3	35 - 59 people
		4	60 - 100 people
		5	100+ people
SOLOIST	Type of soloist	1	Single soloist, vocal
		2	Multiple soloist, vocal
		3	Single soloist, instrumental
		4	Multiple soloist, instrumental
		5	Multiple soloist, diverse
		6	No soloist, orchestral work
		7	No soloist, ensemble work
		8	No soloist, solo piece
SOL.1.ORCH	Soloist with an orchestra	1	Orchestra with one soloist
		2	Orchestra without or more soloists
		-	Missing: no orchestra
SOL.YN	Soloist or not	1	Soloist(s) on the album
		2	No soloist(s) on the album
UNITY	What creates unity on the album	1	One piece
		2	Multiple pieces by same composer; rest same
		3	Multiple pieces by different composers; rest same
		4	One soloist, rest different
		5	One ensemble/orchestra, rest different
		6	Registration of/for an event
		7	One style/theme; rest different
		8	One conductor; rest different
LABEL.TYPE	Type of label; specific	1	Major label
		2	Sublabel of a major
		3	Independent label
		4	Own production, single time
		5	Own label by executive artist
		6	Sublabel of a non-major label
		7	Own label by a venue
		8	Audiovisual production label
		-	Missing: unknown

Variable	Meaning	Label	Value
LABEL.GROUP	Type of label; grouped	1 2 3	Major label Independent label Own record label
MAJOR	Major labels	1 2 3 4 -	EMI Warner Universal Sony Missing: no major label
FORMAT	Format on which album is contained	1 2 3	CD SACD DVD
AMOUNT	Number of CDs in album	1 - 10	1 to 10
AMOUNT.GR	Number of CDS, grouped	1 2	Single or double CD More than 2 CDs
TECHNIQUE	Recording technique	1 2 3 4 -	Live Semi-live Not-live Radio Missing: unknown
COVER	Type of cover image	1 2 3 4 5 6 7 8 9 10 -	Photo soloist Photo conductor Photo composer Photo executive Abstract Scene Landscape Other Photo instrument Photo soloist and conductor Missing: unknown
COVER.GR	Type of cover image, grouped	1 2 3 4 - **Label**	Personality (soloist; conductor; duo) Composer Executive (ensemble; orchestra) Abstract, other Missing: unknown

Variable	Meaning		Value
FOND1	Biggest fond on cover	0	Nothing written on cover
		1	Name of the soloist(s)
		2	Name of the conductor
		3	Name of the executive artist(s)
		4	Name of the composer(s)
		5	Name of the piece(s)
		6	Other
		-	Missing: unknown
FOND2	Second fond on cover	0	Nothing written on cover
		1	Name of the soloist(s)
		2	Name of the conductor
		3	Name of the executive artist(s)
		4	Name of the composer(s)
		5	Name of the piece(s)
		6	Other
		-	Missing: unknown
FOND3	Third fond on cover	0	Nothing written on cover
		1	Name of the soloist(s)
		2	Name of the conductor
		3	Name of the executive artist(s)
		4	Name of the composer(s)
		5	Name of the piece(s)
		6	Other
		-	Missing: unknown
SOL.FREQ	Times soloist mentioned on cover	0	Not mentioned on cover
		1	Mentioned on cover
		-	Missing: unknown
SOL.PROM	Prominence on cover (SOL.FREQ x FOND*)	0	Not mentioned
		1	Prominence 1 (low)
		2	Prominence 2
		3	Prominence 3 (high)
COND.FREQ	Times conductor mentioned on cover	0	Not mentioned on cover
		1	Mentioned on cover
		-	Missing: unknown
COND.PROM	Prominence on cover (COND.FREQ x FOND*)	0	Not mentioned
		1	Prominence 1 (low)
		2	Prominence 2
		3	Prominence 3 (high)

Variable	Meaning	Label	Value
EXEC.FREQ	Times executive artist mentioned on cover	0	Not mentioned on cover
		1	Mentioned on cover
		-	Missing: unknown
EXEC.PROM	Prominence on cover (EXEC.FREQ x FOND*)	0	Not mentioned
		1	Prominence 1 (low)
		2	Prominence 2
		3	Prominence 3 (high)
ORCH.TOP	Top 20 orchestras global	1	Royal Concertgebouw Orchestra
		2	Berlin Philharmonik
		3	Vienna Philharmonik
		4	London Symphony Orchestra
		5	Chicago Symphony Orchestra
		6	Bavarian Radio Symphony Orchestra
		7	Cleveland Orchestra
		8	Los Angeles Philharmonic
		9	Budapest Festival Orchestra
		10	Dresden Staatskapelle
		11	Boston Symphony Orchestra
		12	New York Philharmonic
		13	San Francisco Symphony
		14	Mariinski Theatre Orchestra
		15	Russian National Orchestra
		16	St. Petersburg Philharmonic
		17	Leipzig Gewandhaus
		18	Metropolitan Opera Orchestra
		19	Saito Kinen
		20	Czech Philharmonic
		-	Missing: no top 20 orchestra
ORCH.DUTCH	Dutch orchestras, name	1	Radio Kamerorkest
		2	Het Brabants Orkest
		3	Maastricht Symphony Orchestra
		4	Nederlands Philharmonisch Orkest
		5	Rotterdams Philharmonisch Orkest
		6	Noordholland Philharmonisch Orkest
		7	Residentie Orkest
		8	Amsterdam Sinfionetta
		9	Radio Filharmonisch ORkest
		10	Nederlands Kamerorkest
		11	Metropole Orkest
		-	Missing: no Dutch orchestra
NATIONALITY	Nationality of main artist	1	Dutch
		2	Non-Dutch

Appendix B: Case description qualitative research

The following people have been interviewed, based on their knowledge about the (Dutch) classical music industry and the influence of digitalisation for their work or organisation.

Peter Santa – Amsterdam Symphony Orchestra

Peter Santa is founder and conductor of the Amsterdam Symphony Orchestra (ASO). The ASO is a professional orchestra founded in 2003 and exists without structural subsidies or funding. Since 2009 the majority of the concerts has been for commercial partners rather than public concerts. All concerts by the orchestra are recorded but not released, except one CD from an earlier project.

Wouter den Hond – Radio Philharmonic Orchestra

Wouter den Hond is manager at the Radio Philharmonisch Orkest (Radio Philharmonic Orchestra), a Dutch philharmonic orchestra founded in 1945 and connected to the public broadcasting. Due to their special position in the public media, they receive their funding separate from the other symphonic orchestras through the public broadcasting budget and have agreements for radio- and television performances throughout the year.

Marcel van Tilburg – Royal Concertgebouw Orchestra

Marcel van Tilburg is assistant media productions at the Koninklijk Concertgebouw Orkest (Royal Concertgebouw Orchestra), one of the leading orchestras in the world, and is responsible for everything connected to the RCO Live label and involved in all other media production of the orchestra. The RCO is the first orchestra in the Netherlands to have launched an own record label and takes a special position in the Dutch orchestra scene based on its recognition as (one of) the best orchestra in the world. Next to this, Van Tilburg is manager at an independent classical music label, Etcetera records.

André Heuvelman – Rotterdam Philharmonic Orchestra

André Heuvelman works both as innovator and solo trumpet player for the Rotterdams Philharmonisch Orkest (Rotterdam Philharmonic Orchestra). The orchestra belongs to the top of the Dutch and European orchestras and is, especially in the last years, known for its

innovating projects and marketing[18]. The orchestra makes live recording under the RPHO Live label and sporadically releases historic works on the Rotterdam Philharmonic Vintage Recordings label.

Jan Vredenburg – Luister

In his function as chief editor of the Luister, a Dutch classical music magazine on whose albums reviews a quantitative content analysis is performed, Jan Vredenburg is not only in position to elaborate more on the organisation behind this magazine, but more importantly reflect on developments in the field without taking the personal perspective of one of the orchestras.

Merel Vercammen

Merel Vercammen is a Dutch professional violinist who works as soloists and is member of several ensembles, some of which founded by Vercammen. Besides her personal experience as a young, independent musician, she has worked for the Raad van Cultuur and wrote a master's thesis on the reaching of young audiences with classical music, enabling her to reflect on the developments in the market from both a professional, personal and academic perspective.

[18] Nominated for the Culture Marketing Awards 2017

Appendix C: Interview guide

All interviews are conducted in a semi-structured setting, meaning that an interview guide has been developed before the interview, based on the theoretical findings and expectations. During the interview space has been allowed for the interviewees to expand on topic that were of importance according to them as well as follow-up questions on interesting topics by the interviewer. Each interview was prepared with a specific interview guide, taking the specificities of that case into consideration. The interview guide below has been the basic structure on which these specialised guides have been developed.

- Wie bent u en wat doet u (voor het …)
- Wat is het (…) voor orkest/organisatie?
- Maakt het … opnames?

NEE

- Waarom niet?
- Is hierin een verschil met andere orkesten/ensembles in de sector?
- Zou u opnames willen maken en/of uitbrengen?
- Wat zou de toegevoegde waarde hiervan zijn? Op economisch, promotional, artistiek, … vlak?
- Was dit anders 20 jaar geleden?
- Wat zou voor u moeten veranderen om het wel interessant te maken om opnames te maken?
- Heeft digitalisering naar uw mening invloed gehad op de keuze geen opnames te maken?
- Zou u eerder opnames maken als er meer online aanbod was?

JA

- Maakt het … deze opnames in eigen beheer of bij een label?
- Zijn dit voornamelijk live opnames of studio-opnames?
- Brengt het … de opnames uit? Zo ja, op welk format? Ook online?
- Indien opnames via een label: welk label, waarom dit label?
- Zit het .. al lang bij dit label? Zijn hier veranderingen in geweest?
- Wat is het doel van het maken van opnames? Economisch, artistiek, PR, …?
- Hoe worden uw opnames ontvangen door het publiek?

- Wat is de invloed van digitalisering naar uw mening op de klassieke muziekindustrie?
- Hoe ziet u het effect van downloaden op de klassieke muziekindustrie?
- Hoe ziet u het effect van streamen op de klassieke muziekindustrie?
- Denkt u dat de vraag naar live klassieke concerten is veranderd door -digitalisering? Wat zijn naar uw mening de positieve en negatieve ontwikkelingen hierin?
- Ziet u verschillen of gelijkenissen met ontwikkelingen in de popindustrie?
- Denkt u dat er vraag naar andere soort muziek is dan 20 jaar geleden? Waar denkt u dat deze verandering door verklaard kan worden?
- Denkt u dat het aanbod van muziek anders is dan 20 jaar geleden? Waar denkt u dat deze verandering door verklaard kan worden?
- Hoe ziet u de rol van labels? Ziet u hier veranderingen in? Worden ook live aspecten door labels ondervangen?
- Ziet u de vraag naar opgenomen klassieke muziek terugvallen of toenemen? In geval van toename: hoe komt dit? In geval van afname: hoe wordt dit opgevangen?
- Hoe ziet u de toekomst van de klassieke muziek opnameindustrie voor zich?

Appendix D: Tables and figures

D1: Percentage of album reviews with unity created by style or theme

YEAR	PERCENTAGE
1999	0
2000	0.8
2001	3
2002	6.8
2003	3
2004	2.6
2005	1.3
2006	1.5
2007	1.2
2008	0
2009	7.6
2010	4.5
2011	8
2012	10.1
2013	6.8
2014	5.6
2015	7
2016	4.2

D2: Bivariate correlation test between time (YEAR) and unity in the album (UNITY)

	UNI 1*	UNI 2	UNI 3	UNI 4	UNI 5	UNI 6	UNI 7	UNI 8
Correlation (Pearson)	.668	-.780	-.078	-.692	-.609	.583	.701	-.721
Significance	.002	.000	.387	.001	.006	.009	.001	.001

* Variables
UNITY 1 = unity by a single piece
UNITY 2 = multiple pieces, rest same
UNITY 3 = multiple pieces, different composers
UNITY 4 = unity by soloist
UNITY 5 = unity by executive artists
UNITY 6 = unity by an event
UNITY 7 = unity by a style or theme
UNITY 8 = unity by a conductor

D3: Proportion of albums released on certain formats

YEAR	CD	SACD	DVD
1999	100	0	0
2000	100	0	0
2001	97	0	3
2002	79.45	5.5	15.1
2003	88.12	4	7.9
2004	83.33	6.4	10.3
2005	80.77	11.5	7.7
2006	77.94	10.3	11.8
2007	73.49	18.1	8.4
2008	83.53	8.2	8.2
2009	83.54	10.1	6.3
2010	73.13	11.9	14.9
2011	77.33	10.7	12
2012	88.61	8.9	2.5
2013	82.43	13.5	4.1
2014	81.69	8.5	9.9
2015	75.44	17.5	7
2016	81.94	13.9	4.2

D4: Proportion of albums released by groups of 100+ people in moving averages

YEAR	PERCENTAGE
1999	-
2000	12
2001	15.4
2002	18.2
2003	18.3
2004	16.5
2005	19.9
2006	19.6
2007	20.2
2008	16.1
2009	19.6
2010	18.4
2011	18.4
2012	12.7
2013	10.7
2014	9.4
2015	9
2016	-

D5: Bivariate correlation test between time (YEAR) and type of label (LABEL)

	MAJOR	INDEPENDENT	OWN PRODUCTION
Correlation (Pearson)	-.874	.649	.916
Significance	.000	.006	.000

D6: Proportion of albums released via an own production label in moving averages

YEAR	PERCENTAGE
1999	-
2000	1.7
2001	1.7
2002	1.8
2003	2.1
2004	2.9
2005	6
2006	7.6
2007	9.6
2008	6.6
2009	6.9
2010	6.3
2011	8.5
2012	8.7
2013	10.4
2014	12
2015	10.5
2016	-

D7: Proportion of albums released with the composer on the cover in moving averages. Sample starts in 2001 due to a lack of data from 1999 and 2000.

YEAR	PERCENTAGE
2001	-
2002	8.8
2003	7.3
2004	5.8
2005	4.3
2006	3.4
2007	1.7
2008	2.1
2009	1.8
2010	2.3
2011	3.9
2012	3.9
2013	3.9
2014	2.0
2015	3.4
2016	-

D8: Proportion of albums released with the executive artist(s) on the cover in moving averages. Sample starts in 2001 due to a lack of data from 1999 and 2000.

YEAR	PERCENTAGE
2001	-
2002	3.3
2003	3.8
2004	3.8
2005	5.9
2006	4.1
2007	3.3
2008	2.1
2009	4.3
2010	7.9
2011	10.0
2012	10.1
2013	7.9
2014	6.4
2015	6.5
2016	-