The impact of digitalisation on the recorded music consumption. An Estonian case study

Juko-Mart Kõlar [1]

Abstract
Digitalisation has radically changed how recorded music is produced, distributed and consumed. While physical sales have been declining globally, music subscription continues to be a key driver for digital growth, even though the viability of the "freemium" business model has not yet been proven to be sustainable. A survey questionnaire with 1,544 respondents was carried out to study the changed recorded music consumption patterns in Estonia. The analysis revealed disparities in recorded music consumption among different age and gender groups. It follows that different communication messages are needed to reach these distinct consumer groups in order to monetise their recorded music consumption more effectively.

Keywords: music industry, digital music consumption, digitalisation, digitisation

1 Introduction

This article aims to contribute to the understanding of how digitalisation has affected recorded music consumption. "Digitisation" and "digitalisation" are closely associated terms that are sometimes used interchangeably. However, there is a difference in meaning, as *digitisation* refers to *"the action or process of digitising; the conversion of analogue data ... into digital form"*, whereas *digitalisation* is defined as *"the adoption or increase in use of digital or computer technology by an organization, industry, country ..."* by Oxford English Dictionary. Digitalisation in this context can be understood as the introduction of digital sound recording, editing and playback capabilities along with the

[1] **Juko-Mart Kõlar** is an advisor on music at the Estonian Ministry of Culture, Chairman of Supervisory board for Estonian National Symphony Orchestra Foundation, and Estonian Philharmonic Chamber Choir Foundation. He has graduated from Sibelius Academy Arts Management Master's Degree Programme (Finland). He works as a consultant, mentor and lecturer of various courses related to creative industries. He is also a co-founder of two music industry related start-ups. (jukomart@gmail.com).

development and spread of corresponding digital communication infrastructure.

The introduction of digital audio formats are arguably the most important driving force of the music industry, not only because digital technology has allowed music to be heard almost everywhere and on a multitude of devices, but because it has fundamentally changed how music is produced, distributed and consumed. Dolata (2011: 9) argues that the true music industry's technology-driven transformation began at a point in time when the world of the music business still conformed to its traditional working order. He refers to the two technological developments at the end of the 1990s that laid the basis for what began as a loss of control over production and distribution of music. As a digital file, music could be copied numerous times without any loss in quality, distributed over the internet and managed from a computer. This created new challenges and opportunities for the recorded music industry, but also raised some major concerns, as the cost of reproduction and proliferation of digital files is almost nil.

Various authors (McDonald 2016, Leurdijk 2012, Bourreau, Gensollen & Moreau 2008) have tried to summarize the effects of digitalisation on the music industry. Most authors agree the effects include the following: (i) music consumption shifted online and thus traditional music business models were disrupted; (ii) music became cheaper, more easily accessible and easier to purchase for consumers globally; (iii) artists had increased opportunities to produce and distribute their music independently and free of intermediaries; (iv) record companies lost importance as the key distributors and promoters of recorded music. The IFPI reports between 2012-2016 revealed the extent of these developments varied significantly between markets. While revenues from music streaming have been growing by two-digit margins annually, the global music market is still very diverse in terms of various consumption models. For example, Ipsos found that South Korea (42%) and Sweden (40%) were the leading countries in terms of paid subscription services, with only 15-16 per cent using such services in Germany and Great Britain and a mere 6% in Japan (IFPI 2015: 19).

Various authors have discussed the effects and impact of digitalization to the music industry's business models from different perspectives. For example, Dolata (2011) argues that the gradual transformation of the sector occurs as a longer process of restructuring, characterised by the diversification of music marketing methods, the creation of new types of distribution, and the redefinition of the sector's institutional framework. He studied the outcomes of digitization from the socio-economic perspective, especially the reasons for the industry's failure to adopt, but his approach concentrates on the institutional structure of the supply side without exploring these changes from the demand side. Perritt (2011) was among the first authors to go beyond the debate focused around the viability of access-based model and the question of whether online subscription services make traditional ownership-based music distribution models obsolete. He was also among the first to discuss the "rise and fall" of the online subscription-based model. However, some of Perritt's conclusions have proven too ambitious, such as the total demise of physical music mediums, or the lack of copyright potential in the 21st century. Wikström (2012), among others, proposed a typology of new music distribution models to provide additional perspectives on the on-going transformation of music industry, but his research is exploratory and conceptual in character and calls for additional empirical research. This paper aims to fill this gap by exploring the effects of digitalisation on the recorded music industry from the consumers' perspective. It investigates the changed patterns of digital music consumption in Estonia, but also explores and discusses the trends and business opportunities inherent to the dominate business model of paid subscriptions. Additionally, this paper analyses the reasoning adopted by different age and gender groups for switching or for a reluctance to switch to digital music consumption, especially to paid subscription, which is essential to the long-term viability of the whole recorded music industry.

To create a context for the Estonian case, the following table provides an overview of the global physical and digital recorded music

revenues from 2011-2015 and highlights how digital music surpassed physical sales in 2014 for the first time.

Global revenues (in billion USD)	**2011**	**2012**	**2013**	**2014**	**2015**
Physical	8.1	7.5	6.7	6.1	5.8
Digital	4.9	5.5	5.8	6.1	6.7

Table 1: Global physical and digital music revenues from 2011-2015. Source: IFPI Digital Music Reports 2011-2016

The following breakdown of global digital music revenues reveals that music streaming has become the key growth driver for the global recorded music industry.

Breakdown of global digital revenues	**2011**	**2012**	**2013**	**2014**	**2015**
Digital revenues (in billion USD)	4.9	5.5	5.8	6.1	6.7
Permanent downloads	N/A	3.9	3.9	3.2	3.0
in % of digital revenues	*N/A*	*70%*	*67%*	*52%*	*45%*
Streaming (subscription and ad-supported)	0.7	1.1	1.6	2.2	2.9
of which subscription	0.4	0.7	1.1	1.6	2.3
in % of digital revenues	*14%*	*20%*	*28%*	*36%*	*43%*
Other (e.g. mobile)	N/A	0.5	0.9	0.9	0.8
in % of digital revenues	*N/A*	*10%*	*15%*	*15%*	*12%*
Share of streaming in the global recorded music revenues	5%	7%	7%	14%	19%

Table 2: Breakdown of global digital music revenues from 2011-2015. Source: IFPI Digital Music Reports 2012-2016

According to the IFPI (2012-2016), global physical recorded music revenues between 2011 and 2015 decreased by 28.4%. 2014 was the first year when the industry revenue was derived equally from physical and digital channels. 2015 signified a key milestone, as digital became the primary revenue stream for the recorded music industry. The breakdown of digital revenues suggests that music streaming has become the growth driver for the recorded music industry, while revenues from physical sales and permanent downloads are decreasing. In 2011 streaming's share of digital revenues was 14%, but in 2015 it reached 43% of the total digital revenues. Music streaming's share of total recorded music industry revenues was only 5% in 2011, but increased to 19% by 2015. Significant growth in streaming and subscription revenues now outweighs the decline in digital download sales for the whole industry. However, the business model based on music streaming has not yet proven to be sustainable, as none of the major services as of 2015 has managed to earn net profits. For example, the analysis of Spotify conducted by Tschmuck (2016) revealed that, despite an annual revenue growth of 80%, the cost of revenue increased by more than 85%, further widening the net losses for the company to 184.5 million EUR in 2015. He argued that Spotify's business model relies on the conversion of the Freemium users to become paid subscribers to increase average revenue per user (ARPU). Even though the "freemium" business model of music streaming has not yet proven sustainable, both revenues and the number of paying subscribers have grown substantially over recent years, while music ownership (both physical and digital) has decreased, signalling an important transformation in the distribution and consumption phases of the recorded music industry's value chain.

2 Methodology

A survey questionnaire was carried out to study the impact of digitalisation on recorded music consumption in Estonia. The

questionnaire consisted of 29 questions and the process of conducting the survey and analysing the results included the following steps.

Selecting the type of survey. The purpose of the survey was to gather information on evolving consumers' habits, expectations and limitations in recorded music consumption. The questionnaire included structured and unstructured questions: (i) dichotomous yes/no questions, (ii) multiple choice questions, (iii) Likert Scaling (unidimensional scaling questions using 1-to-7 rating), (iv) Guttman Scaling and (v) open-ended questions. The questionnaire also contained contingency questions, where respondents were asked one question in order to determine if they were qualified to answer a subsequent one.

Constructing the questionnaire. The number of questions varied between 19-29, depending on respondents' answers to contingency questions. To avoid confusion and ambiguity, short explanations were added to the questions, which contained potentially ambiguous terms, such as "subscription service" or "P2P services". Open-ended questions were also used to allow deeper exploration of related topics that the respondents considered important to explain in more detail.

Age group	Male	Female	Total	Percentage of total
...-14	1	3	4	0.2
15-24	79	167	246	15.9
25-34	238	301	539	34.9
35-44	172	198	370	24.0
45-54	78	144	222	14.4
55-...	68	95	163	10.6
Total	**636**	**908**	**1544**	**100.0**

Table 3: Respondents in different age and gender groups

Sampling. Snowballing was used to distribute the questionnaire. The snowballing method inherently implies the danger of over-representation of a single, networked group of respondents. However,

the following aspects need to be considered. Firstly, the questionnaire was sent to over ten different institutions, social media networks, blogs and email lists with a request to distribute it further among their members, colleagues, friends and relatives. The types and backgrounds of the recipients varied greatly, ranging from public institutions, universities, blogs and social media communities from different fields of life, including a group of people with physical disabilities. Secondly, all age groups and genders had an equal opportunity to become involved in the survey. The analysis of the diversity of recipients' backgrounds revealed that there was under-representation in only one group (ages 0-14), but both gender groups and all the other age groups received sufficient number of replies to conduct quantitative analysis.

Distributing the survey and collecting the results. The questionnaire was distributed on September 29-30, 2015. There was no specific deadline by when the responses had to be submitted, but the initial target was to receive at least 1,000 responses. As Google Forms provides statistical overview about the response rate, it revealed that the target was achieved during the first week after distributing the questionnaire. The collection ended on October 17 as the daily accrued number of responses had been less than ten for seven consecutive days by then. The total number of responses increased to 1,544.

Analysing the results. The analysis of respondents' age groups revealed that only one group (ages 0-14) received 4 responses, which does not allow quantitative analysis, but all the other groups received an adequate number of responses to conduct quantitative analysis.

3 Analysis and discussion

The aim of this paper was to study the impact of digitalisation on the consumption of recorded music in Estonia with a special focus on the music consumption habits, expectations and limitation of different age groups and genders. Although the survey was carried out in Estonia, analysis of IFPI reports (2011-2016) suggests digitalisation has had

similar effects on the consumption of recorded music in other countries as well.

Listening to music plays an important role in the everyday lives of respondents. 69.4 per cent of the respondents claimed to listen to music every day. In comparison, Nielsen's study (2014) found that three-quarters actively listen to music, and many do so while at work, doing chores, and in the car. On the other hand, only 32.3% of the respondents claimed that legal access to music had increased the time dedicated to listening to music. 67.7% replied that the time dedicated to listening to music had not significantly changed or even declined. Therefore, although music plays an important role in the majority of respondents' lives, free, legal access to music had increased the time dedicated to listening to music among only 1/3rd of respondents. Therefore, free and legal access to music has had a limited impact on the time dedicated to music listening.

Age group	Gender	Number of respondents	Have you bought a physical CD in the past 12 months?		Have you bought any digital music files in the past 12 months?		Have you used any music streaming services in the past 12 months?	
			YES (%)	NO (%)	YES (%)	NO (%)	YES (%)	NO (%)
15-24	M	79	46	54	24	76	96	4
	F	167	48	52	18	82	99	1
25-34	M	238	61	39	35	65	100	0
	F	301	53	47	23	77	99	1
35-44	M	172	62	38	29	71	94	6
	F	198	70	30	20	80	93	7
45-54	M	78	67	33	24	76	92	8
	F	144	72	28	7	93	85	15
55-...	M	68	63	37	9	91	82	18
	F	95	64	36	6	94	68	32

Table 4: Consumption of recorded music in different formats in Estonia

The analysis within table 4 reveals only minor (0-10%) or moderate (11-20%) differences existed in the consumption of recorded music in different formats between genders and within particular age groups. However, major differences existed between the different age groups in terms of purchasing digital music files and using music streaming services. While less than half of the respondents in the age group of 15-

24 had purchased a physical CD over the past 12 months, the number increased to up to 72% for the older age groups. A total of 60.1% of the respondents had purchased a physical CD within the last 12 months, while approximately 2/3rds of them spent more than 20 EUR on CDs.

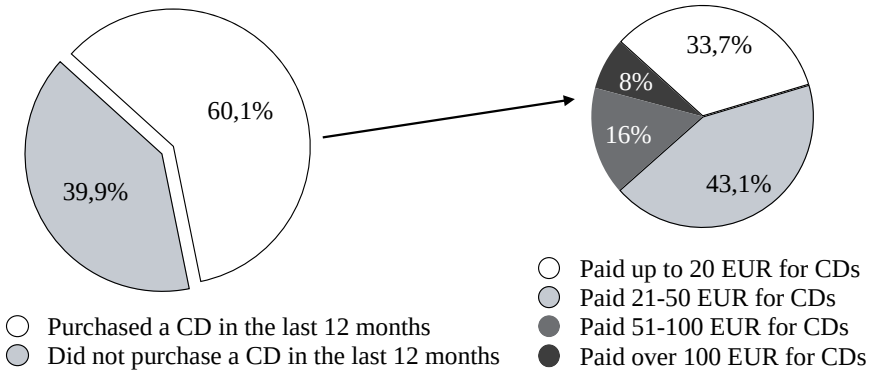

Figure 1: Consumption of physical CDs in Estonia. Source: author

During the same time period that Spotify has been available in Estonia (since 2013) and even though the annual rate for Spotify's premium account equalled the retail price of 3-4 physical CDs, there was still a large group of respondents, who preferred physical CDs to streaming services for various reasons.

Minor and moderate differences existed among younger age groups of respondents, of whom 18-35% had purchased digital music downloads over the past 12 months. The same number decreased to less than 10% among the oldest age group. Variances between age groups in recorded music consumption delineate most clearly in the use of music streaming services, as 18-32% of the respondents in the oldest age group had not used any music streaming services, including YouTube, over the previous 12 months. By comparison, over 90% of the respondents in the age groups from 15-44 had used music streaming services in the previous year.

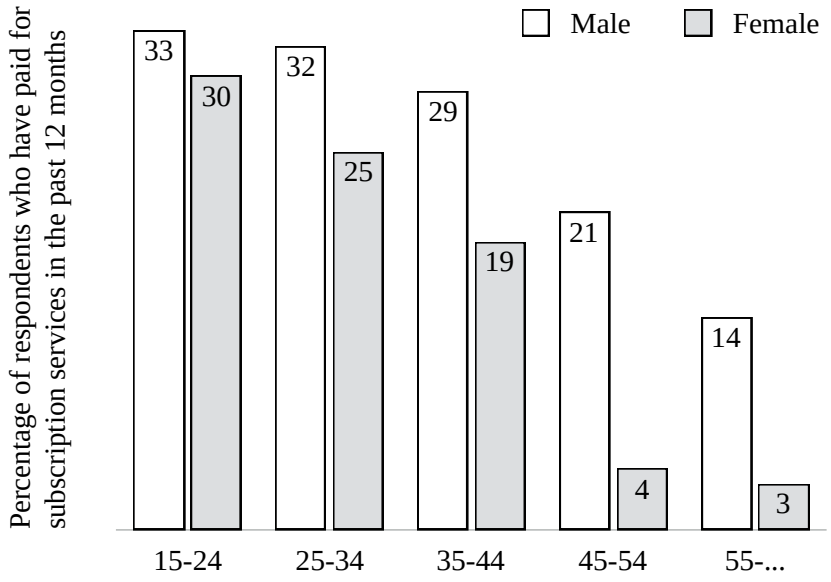

Figure 2: The use of paid subscription services among different age groups in Estonia

The above table reveals the use of paid subscription services is in inverse correlation to the age of respondents. Only minor differences among different genders exist in using paid subscription services for respondents between 15-44, but the gap becomes significantly wider in the age groups of respondents over 45 years old as only 3-4% of the female respondents in these groups have used paid subscription services. The analysis also reveals that 54-59% of the female respondents in these two groups were not willing to pay for recorded music in digital music services, but 36-39% of the same group recognized that although they are not currently paying, they would be willing to do so in the future. The following two tables provide an insight into why variances in willingness to pay for recorded music in digital music streaming services might exist among the different age groups and genders.

Age group	Gender	Number of respondents	Would you be willing to give up physical music mediums entirely?		
			I am ready to switch entirely to digital music consumption (%)	I will use physical music mediums at least for a while in the future (%)	I would never give up physical music mediums entirely (%)
15-24	M	79	44	25	30
	F	167	34	33	33
25-34	M	238	31	21	49
	F	301	31	34	35
35-44	M	172	27	28	44
	F	198	14	43	43
45-54	M	78	18	23	59
	F	144	6	44	50
55-...	M	68	9	32	59
	F	95	6	33	61

Table 5: Respondents' willingness to switch to digital music consumption entirely

Table 5 reveals that younger age groups are more willing to switch entirely to digital music consumption than the older age groups, while a similar proportion of respondents claimed to use physical music mediums for a while in the future. The older age groups' reluctance to switch to digital music consumption might be for different reasons. For example, Wikström (2012: 9-10) has emphasized the importance of the record collection as an identity marker that corresponds to the logic of the ownership model, but not to the access model. According to him, in an era of social media, the act of listening to recorded music becomes increasingly social and public and the role of music listeners' record collections as manifestations of their music identity is replaced by a steady flow of information about their real-time musical experiences. Some physical music mediums, for example vinyl records persevere as long as they are meaningful for the consumers only as physical products. The whole process of selecting and putting on a good vinyl record could be compared to the process of opening and serving a vintage wine, as it creates a story and meaningful context for the whole event.

The following table reveals the most common reasons for not using paid subscription services.

Age group	Gender	Number of respondents	Why have you not used paid versions of music subscription services so far?				
			I don't listen to music enough to pay for it (%)	Paid versions do not have enough benefits (%)	I haven't had time to figure out how it works (%)	I don't like to pay a monthly fee for services (%)	It seems too expensive for me (%)
15-24	M	79	14	67	18	55	18
	F	167	12	59	21	26	34
25-34	M	238	16	59	27	37	19
	F	301	17	54	36	36	17
35-44	M	172	16	51	20	24	15
	F	198	21	45	45	31	16
45-54	M	78	14	43	13	32	16
	F	144	15	35	17	31	15
55-...	M	68	21	46	40	21	19
	F	95	17	40	41	17	8

Table 6: Reasons why respondents have not used paid for music subscription services so far

Insufficient benefits of the premium versions were considered by 50.6% of the respondents in all age groups to be the most important reason why they had not so far paid for subscription services. It was followed by lack of willingness to pay a monthly fee for services. However, there is a clear difference between age groups: paying a monthly fee was not considered an important problem by older respondents, as only 17-21% of the oldest age group saw it as a reason for not using paid versions of music streaming services. There were also significant differences between genders among particular age groups, as only 26% of the female respondents in the youngest age group considered it to be the reason for not using paid subscription services, compared to 55% of their male counterparts. However, only 18% of the male respondents considered the subscription fee to be too expensive, compared to 34% of the female respondents in the same age group. It follows that this particular age group–male respondents between 15-24–could be provided with different kind of offerings (e.g. an annual subscription fees) to motivate them to become paying subscribers, as they do not consider the subscription fee to be too expensive, but are reluctant to paying a monthly fee. Among other respondents, only 8-19% considered the price to be an important factor in using paid subscription services, regardless of the age group or gender. Compared to other groups, a relatively high percentage of female respondents in

the age groups of 25-34 and 35-44 (36% and 45%, respectively) claimed that they have not had time to figure out how paid subscription works. Therefore, service providers could increase the likelihood of turning these distinct groups into paying subscribers by clearly communicating on this particular issue to these target groups.

Finally, the survey questionnaire examined what were the most valued functionalities of music streaming services that the respondents considered worth paying for.

Age group	Gender	Number of respondents	What kind of functions would you be willing to pay a monthly subscription fee for?				
			Ad-free music listening (%)	Listening to music offline (%)	Access to higher quality music files (%)	Possibility to create and share playlists (%)	Various social functions (%)
15-24	M	79	94	83	81	60	12
	F	167	90	81	77	42	9
25-34	M	238	84	72	75	39	20
	F	301	81	70	69	52	15
35-44	M	172	77	54	71	32	11
	F	198	74	70	57	40	9
45-54	M	78	67	43	55	17	12
	F	144	67	56	53	25	8
55-...	M	68	59	26	51	18	3
	F	95	51	18	54	8	5

Table 7: Functionalities of music streaming services that respondents consider worth paying for

This analysis reveals that ad-free music listening was the most valued function of streaming services that respondents would be willing to pay for, followed by access to higher quality music files and listening to music offline. Although listening to music in the digital era has become largely a social experience, none of the respondents' groups valued it more than 20%, while only a small fraction of 3-12% considered this functionality important within the age groups of respondents over 35 years old. Ad-free music listening was considered especially valuable among younger age groups and decreased gradually among older age groups. The same pattern appeared in listening to music offline, access to higher quality music files and possibility to create and share playlists. Therefore, younger age groups consider various functionalities of streaming services more worth paying for.

4 Conclusion

Digitalisation has radically transformed both the distribution and consumption of recorded music. There is a clear tendency to move from music ownership (both physical and digital) to music access, as music subscription services have become a major driver of growth for the recorded music industry globally.

A survey questionnaire was carried out in Estonia, where 1,544 respondents from different age groups answered the questions about the changes in their recorded music consumption habits, expectations and limitations. The analysis of the survey results reveals that digitalisation has had the following effects on the recorded music consumption in Estonia.

Firstly, although listening to music plays an important role of the majority of respondents' everyday lives–69.4% of all respondents claimed to listen to music every day, free, legal access to recorded music has had only a limited impact on the time dedicated to music listening, as fewer than 1/3rd of respondents claimed to dedicate more time to listening to music as a result of free legal access to recorded music.

Secondly, CDs still play an important role in the recorded music consumption in Estonia, as 46-64% of all respondents in all age groups had purchased at least one CD within the past 12 months. Among those who had purchased CDs, over 60% had paid more than 21 EUR for CDs in the past year. Even though streaming services that provide free legal access to recorded music have been available since 2013 in Estonia, over 40% of respondents still preferred physical CDs to music streaming services for various reasons.

Thirdly, although listening to music in the digital era has become largely a social experience, less than 20% of respondents considered social functions worth paying for.

Fourthly, the long-term viability of the music streaming services depends on their potential to increase average revenue per user (ARPU) by converting freemium users into premium subscribers. 38% of the respondents who are currently not paying for subscription services claimed to be willing to do so in the future, given the proper

communication and offering. The analysis revealed different age and gender groups are currently not paying for listening to music in digital channels for different reasons. For example, male respondents in the youngest age group of 15-24 do not consider the premium services to be too expensive, but they are reluctant to pay a monthly fee. They also value different functionalities of the music streaming services to be worth paying for. Therefore, distinct communication strategies that address particular age and gender groups could help convert freemium users into paying subscribers and thus monetize digital music consumption more effectively.

5 References

Bourreau, M., Gensollen, M. & Moreau, F. (2008) The Digitization of the Recorded Music Industry: Impact on Business Models and Scenarios of Evolution, working paper no. ESS-08-01, Telecom ParisTech.

Dolata, U. (2011) Radical Change as Gradual Transformation Characteristics and Variants of Socio-technical Transitions, SOI Discussion Paper 2011-03, Institute for Social Sciences. Organizational Sociology and Innovation Studies, University of Stuttgart, Germany.

Dolata, U. (2011). The Music Industry and the Internet: A Decade of Disruptive and Uncontrolled Sectoral Change, SOI Discussion Paper 2011-02, University of Stuttgart, Germany.

IFPI (2012) Digital Music Report 2012, International Federation of the Phonographic Industry, London.

IFPI (2013) Digital Music Report 2013, International Federation of the Phonographic Industry, London.

IFPI (2014) Digital Music Report 2014, International Federation of the Phonographic Industry, London.

IFPI (2015) Digital Music Report 2015, International Federation of the Phonographic Industry, London.

IFPI (2016) Digital Music Report 2016, International Federation of the Phonographic Industry, London.

Leurdijk, A. & Nieuwenhuis, O. (2012) Statistical, Ecosystems and Competitiveness Analysis of Media & Content Industries. The Music Industry, JRC, Institute for Prospective Technological Studies, Publications Office of the European Union, Luxembourg.

McDonald, H. (2016) "Music Downloading: Should I Go for an Internet Only Release?", the balance, available at: www.musicians.about.com/od/musiciansfaq/f/digitalalbum.htm (16 February 2016, accessed 20 March 2017).

Perritt, H. H. (2011) "New Business Models for Music", Villanova Sports and Entertainment Law Journal, vol. 18, Chicago-Kent College of Law Research Paper, pp. 65-211

Tschmuck, P. (2016) "The Economics of Music Streaming: Spotify", available at: www.musicbusinessresearch.wordpress.com/2016/07/13/the-economics-of-music-streaming-spotify/ (13 July 2016, accessed 10 September 2016).

Wikström, P. (2012) "A Typology of Music Distribution Models. International Journal of Music Business Research", April 2012, vol. 1, no. 1, pp. 7-29.