Orchestral Music: From Concert Hall to Live TV Streaming

This paper examines how both the production and consumption of classical music has changed over the decades, and especially so in the last thirty years. The paper then examines trends in classical music consumption in Finland and Germany, both overall and by individual symphony orchestra, with some data relating also to Spain. What the data for Finland and Germany show is that in-hall orchestral music audiences are robust there, with no decrease in in-hall audiences evident, unlike in the US. The pattern in both countries is one of slowly increasing in-hall audiences, per head of population. There has also been a huge increase in the consumption of orchestral music, especially via radio programmes and to a lesser extent TV broadcasts. The 'sea change' though occurred with streaming of live broadcasts of orchestral concerts, directly into people's home, the impact of which has yet to be ascertained.

Este artículo examina cómo ha cambiado la producción y el consumo de música clásica a lo largo de las décadas, y especialmente en los últimos treinta años. A continuación, se examinan las tendencias del consumo de música clásica en Finlandia y Alemania, tanto a nivel global en orquesta sinfónica como individual, con algunos datos relativos también a España. Lo que muestran los datos de Finlandia y Alemania es que las audiencias de música orquestal en sala son sólidas, sin que se aprecie una disminución de las audiencias en sala, a diferencia de lo que ocurre en Estados Unidos. La pauta en ambos países es de un lento aumento de las audiencias en sala, por habitante. También se ha producido un enorme aumento del consumo de música orquestal, especialmente a través de programas de radio y, en menor medida, de emisiones de televisión. Sin embargo, el «cambio radical» se produjo con la retransmisión en directo de conciertos de orquesta, directamente a los hogares, cuyo impacto aún está por determinar.

Artikulu honek aztertzen du nola aldatu den musika klasikoaren ekoizpena eta kontsumoa hamarkadetan zehar, eta bereziki azken hogeita hamar urteetan. Jarraian, Finlandiako eta Alemaniako musika klasikoaren kontsumoaren joerak aztertzen dira, maila globalean orkestra sinfonikoan zein indibidualean, Espainiari buruzko datu batzuekin. Finlandiako eta Alemaniako datuek erakusten dutenez, aretoko orkestra-musikaren audientziak sendoak dira, eta aretoko audientziak ez dira murriztu, Estatu Batuetan ez bezala. Bi herrialdeetan, aretoko audientzien kopuruak gora egin du pixkanaka, biztanleko. Orkestra-musikaren kontsumoa ere izugarri handitu da, bereziki irrati-programen bidez eta, neurri txikiagoan, telebista-emisioen bidez. Hala ere, «erabateko aldaketa» orkestra-kontzertuen zuzeneko emanaldiarekin gertatu zen, zuzenean etxeetara, eta horren eragina zehazteke dago oraindik.

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1. INTRODUCTION

For well over a century after its inception chamber/orchestral music was supported primarily by the nobility. Aristocratic establishments customarily employed groups of musicians who served as composers, conductors, and performers of a variety of operatic, orchestral, and chamber music; and traditionally the audiences were restricted to the patrons and their guests. This changed when concert halls open to the public were introduced, widening the audience considerably, but still applying to a very small section of the population. Besides, they could only listen to the music if in the concert hall. This situation changed dramatically, in the 20th century, and especially in the 21st century with the advent of streaming of classical music.

Victoria Ateca-Amestoy's recent work examined the issue of digital engagement with the arts (see Ateca-Amestoy and Castiglione, 2016 and 2023). As pointed out in these papers, the consumption of cultural goods in the past was a time-intensive activity. However, electronic media access renders it technologically possible for

Acknowledgments: It has been a pleasure and an honour to be invited to contribute to this special edition of Ekonomiaz, to mark the very sad passing of Victoria, when so young and vivacious and with so much more to contribute to cultural economics.

much easier access to them now. This has given audiences the chance to access their choice from anywhere and whenever they wish, breaking down the barriers of time and place and improving the experience through interactivity and connectivity. Digitalisation raises the reality then that arts and cultural organisations can overcome the traditional constraints imposed by physical location and cost, thereby greatly expanding their outreach.

It is tracking this huge expansion in outreach over a long period, as applied to orchestral music, that is the focus of this paper. It will draw heavily in parts on a recent paper by the authors (see Zieba and O'Hagan 2023), the focus of which was the impact of technological change on orchestral music. Some selective data will be presented here (see sources later), not necessarily comparable across countries, to illustrate the nature and extent of audience outreach for classical music today.

2. TECHNOLOGICAL CHANGE AND ORCHESTRAL MUSIC

Technological change has in fact impacted orchestras for over two centuries, in very different ways.[1] For example, the construction of individual instruments, their development, the introduction of new instruments and the means of articulation all witnessed changes in the delivery of music and could be viewed as technological change in the broadest sense. Besides, in the mid-18th century there was not one audience, but several types, especially since orchestral music appeared in three different contexts (court orchestras, monastery orchestras, and city orchestras) which changed the audience, but also the place of music and its role. There were also major improvements in the acoustics of concert halls with large increases in seating capacity.

In time though, technological change made it possible for the performing arts sector to reach a vastly wider audience, mostly through albums, CDs/Tapes, radio, and TV, an audience which could listen repeatedly to the same music if they wished. More recently, the live streaming of concerts on TV sets and other devices became a reality, with the potential to generate large increases not just in listeners but also viewer audiences, with potentially lucrative revenue flows.[2]

We will examine these issues now starting with changes in terms of receiving classical music, producing classic music and the opportunities to which these have/can give afford.

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1 See Peyser (2006) for interesting articles on the origins and transformations of orchestras going back to the 15th Century.

2 The so-called 'cost disease' debate which arises from limited scope for productivity increases in some sectors is considered in O'Hagan and Zieba (2023). In essence the cost disease argument is that there are very limited opportunities for productivity increases in classical music and hence that the relative cost of production would rise inexorably.

Receiving

As alluded to above, technological advances brought about dramatic changes for orchestral music in terms of how and where it can reach audiences. For example, home radio enabled new audiences to hear live broadcasts and recordings of all kinds, including classical music performances. As Manzi (2017) points out, in the 1950s, the TV arrived, on which people could watch orchestras play live. Since then, he argues we have eight-track, cassettes, CDs, DVDs, MP3s, YouTube, and most recently, streaming of live concerts on TV.[3] Alongside those advances in recording technology, there was a rapid advance in the capabilities of listening equipment, including personal headphones, portable Bluetooth speakers, and professional-grade speakers that put out sound with lifelike quality. Video has reached the point where the human eye can no longer pick out a single pixel on a computer or TV screen, not to mention the immersive experience of virtual reality.

In a similar vein, *the* Swiss American conductor and scholar Botstein (2020) argued, more recently, that viewing/listening to orchestral music was once just an adjunct to concert life and that recording in the past supported the culture of concert audience. By the mid-1960s, however, he argued that the balance had shifted. Recordings became more important. And one could readily imagine staying at home, in a 'surround-sound' context, with or without headphones, and listening to one's favourite multi-phonic studio recording rather than going out and sitting uncomfortably, in a concert hall.

These represent dramatic changes indeed in the ways in which orchestral music can reach audiences. Whether or not they spell the 'end' for live in-hall concert orchestral music audience is an issue which will be examined later and only time will tell. Few in the classical music world though doubt that the orchestral music of Beethoven, Brahms, Mozart, **Shostakovich, Tchaikovsky,** Penderecki and others will continue to be important in decades to come. But how will this music be produced and through what audience form?

Producing

There are also technological issues facing orchestras on the supply side. It was argued some decades ago, for example by Frederickson (1989), that technology had advanced to the point that performers' sounds can be not only recorded but analysed, reconstituted, and simulated and that as the rationalization of technique continues to its logical conclusion, a specific musician might no longer be necessary. Not only is the continuation of live orchestral concerts then in question, but the very existence of an orchestra as we know it could be at stake. This is an exaggeration but certainly, apart from music performed by a full orchestra physically together, there

3 The original recording process, phonographs for example, dates back in fact to the 1870s.

will be options in terms of reconstituted and simulated music available – through digital tracking, mixing, and mastering – a practice common in popular music for some time.

Almost thirty years ago, Kramer (1996) also heralded that technology was already ubiquitous in music.[4] It had, he argued, altered how music is transmitted, preserved, heard, performed, and composed. Less and less often, he states, do we hear musical sound that has not at some level been shaped by technology, broadly defined. For example, technology is involved in amplification in public address systems, in the reinforcement of concert halls, the recording and broadcast of music, and the design and construction of musical instruments. Instruments are now available that look like piano keyboards, feel like piano keys, and sound like piano timbres, but which are in fact dedicated digital synthesizers; virtuoso performers whose instrument is the turntable are now part of not only the world of disco but also, albeit a small part so far, of the world of classical concert music.[5] Bakshhi and Throsby (2011), in a similar way, note that:

> *Composers in classical, jazz, film and rock/pop music genres use digital devices such as synthesisers, samplers, virtual recorders, and computer software such as MaxMSP to create complex and multi-layered textures and to manipulate sounds from a variety of sources in their compositions. The availability of these technologies has extended musical boundaries. (p. 210)*

Artificial intelligence (AI) could yet have an even more dramatic impact on the output of classical music. With the help of algorithms, AI allows artists to create new musical works, explore new genres, and even experiment with new instruments that were not previously possible (see Frąckiewicz 2023). Fears though that AI could eventually replace music produced by humans it is felt may be well overstated.

> *What sells music is what has always sold it: extraordinary feats of imagination, spectacle, charisma, profundity, soul, and spirituality. Plus, live performances, of course. In none of these areas, thank goodness, do machines come close to challenging real human beings.*[6]

All the above represent major changes in the ways in which orchestral music can be produced to target better its audience. Many see these changes on both the receiving and producing ends in a positive light.

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4 See also Midgette (2008).

5 Turntables and samplers are also used as instruments in live performance of some popular genres (rap, hip hop, etc.).

6 https://www.classical-music.com/features/science-of-music/how-will-ai-affect-music-for-the-better-or-worse See also, 'Spanish orchestra performs work made with AI for the first time: 'It was a pastiche'', Spanish orchestra performs work made with AI for the first time: 'It was a pastiche' | Technology | EL PAÍS English (elpais.com)

New Opportunities

Technology opens new ways for orchestras to reach out and address audiences in an unusual way (see Szedmák and Szabó 2020). The Berlin Philharmonic's *Digital Concert Hall* project was the first major initiative which used social media to broaden the audience globally by making the orchestra's concert recordings available to audiences around the world via the Internet (see Furu and Reckhenrich 2021). Thus, the audience can access the orchestra's recordings and live concerts anytime, anywhere. This also provides an opportunity to reach a new audience: the concept can be attractive to those who, while open to classical music, cannot appear in person for any reason (e.g. remote location, schedule, other tasks/programmes). Furthermore, it is a way to reach out to young people who prefer listening to music at home and often consider the traditional concert form uncomfortable. Since the concert experience is not the same through the screen as live, no orchestra need worry about losing current in-hall audiences, they argue. The application of the concept is more likely to result in the involvement of new in-hall audience members, while the existing core in-hall audience may in fact 'consume' more they argue.

Pompe and Tamburri (2022) argue that during the COVID pandemic, music audiences became accustomed to streaming music performances, and likely will be expecting to continue to receive streaming concerts, along with attending live concerts. The success, for example, of the *Berlin Philharmo*niker and the Detroit Symphony Orchestra have paved the way for a hybrid concert series that have various combinations of recorded and live performances, which is perhaps more suited to the lifestyles of the twenty-first century rather than eighteenth century audiences. The Detroit Symphony, for example, provides great accessibility to their music by streaming, with music categorized in numerous ways, such as by women composers. The *Berliner Philharmoniker* sells subscriptions to live stream performances for different time periods up to a year, much as Netflix does. Online offerings should be continued and expanded because benefits, such as reducing barriers to symphony concerts and providing marketing advantages, can be significant.

3. RECENT TRENDS IN CLASSICAL MUSIC CONSUMPTION

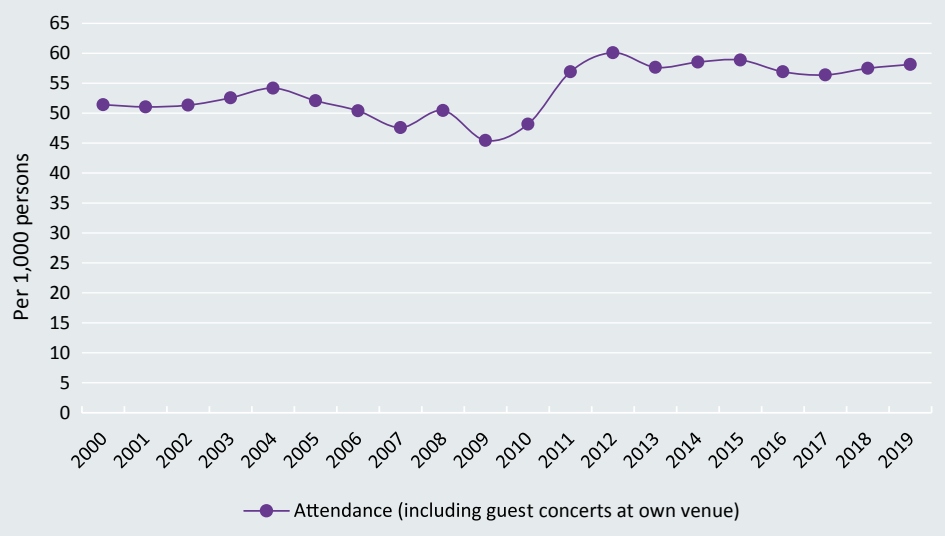
In this section we will provide indicative data on the reach of classical music in the early 21st century, in terms of in-hall attendance, listening on radio and TV, streaming, and live transmission into home TV sets.

In-Hall Audiences

There is little evidence to support the belief that attendances at in-hall classical music concerts have declined, as predicted by some as discussed above, when considering the impact of recorded music and live streaming on in-hall attendances. If anything, the data indicate that in-hall attendances have increased. Figures 1 and 2

show trends in attendance at live classical music concerts, per thousand of population, in two important European countries, Finland, and Germany.

Figure 1. **TOTAL AUDIENCE INCLUDING GUEST CONCERTS (AWAY FROM HOME VENUE) IN FINLAND, PER 1,000 PERSONS**

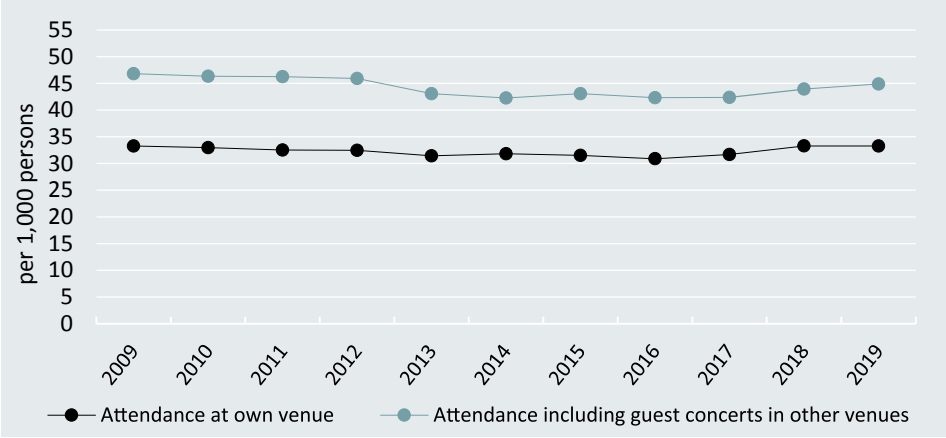


Source: Association of Finnish Symphony Orchestras, annual reports (2000 – 2019) available at Statistics Finland, excluding Finnish National Opera orchestra. Data taken for 14 professional symphony orchestras on the hall audience in own venue plus guest performances.

There are fifteen professional symphony orchestras in Finland which operate besides the chamber orchestras, and other semi-professional orchestras. These symphony orchestras have their own members, venue, and programme. One of the fifteen orchestras is the Finnish National Opera Orchestra which is excluded from the statistics in the Finnish Statistics office for orchestras, as it plays mostly for opera. In addition, the Finnish Radio Symphony Orchestra is included in Figures 1 and 3, as it plays both at its own venue but also broadcasts its performances (see later).

In the case of Finland, it is noteworthy that attendance per capita increased over the years shown and in recent years reached 50-60 per thousand of population. In the case of Germany (see Figure 2), there was some small decline, but, if the figures are comparable, attendance there per thousand of population was lower than in Finland, at around 45 per thousand of population. The small decline in Germany though followed a large increase between the early 1990s and mid-2000s (see Zieba and O'Hagan, 2013). It is interesting that in Poland the attendance per thousand of population also increased over the period 2009 to 2019 to almost 35, not far behind the figure for Germany, the 'standard-bearer' for classical music (Zieba and O'Hagan, 2023).

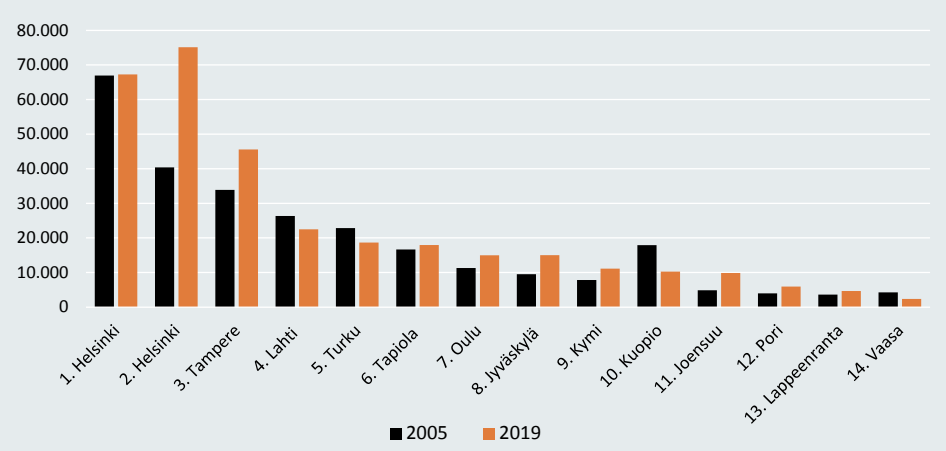
Figure 2. **TOTAL AUDIENCE INCLUDING GUEST CONCERTS (AWAY FROM HOME VENUE) IN GERMANY, PER 1,000 PERSONS**



Source: Theaterstatistik (2008/09-2018/19) available at https://www.buehnenverein.de. Data collected for 47 German symphony orchestras on average for each year.

A feature of attendance at live concerts, apart from the overall attendance, is the geographic distribution of this attendance. Figures 3 and 4 provide evidence on this for Finland and Germany. In Finland, the two Helsinki-based orchestras dominate

Figure 3. **HOME CONCERT HALL AUDIENCE (INCLUDING GUEST CONCERTS) OF FINNISH SYMPHONY ORCHESTRAS, 2005 AND 2019**

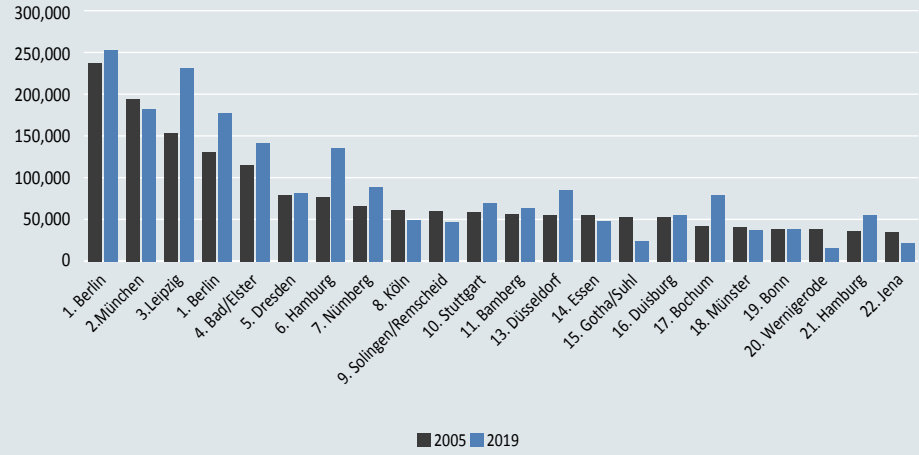


1. Helsinki Philharmonic Orchestra; 2. Finnish Radio Symphony Orchestra, Helsink; 3. Tampere Philharmonic Orchestra; 4. Lahti Symphony Orchestra; 5. Turku Philharmonic Orchestra; 6. Tapiola Sinfonietta; 7. Oulu Symphony Orchestra; 8. Jyväskylä City Orchestra; 9. Kymi Sinfonietta; 10. Kuopio Symphony Orchestra; 11. Joensuu City Orchestra; 12. Pori City Orchestra; 13. Lappeenranta City Orchestra; 14. Vaasa City Orchestra.

Source: Association of Finnish Symphony Orchestras, annual reports (2005 – 2019) available at Statistics Finland.

attendance, with Tampere (not far north of Helsinki) the only other centre with a relatively high attendance. These statistics though partly reflect the different population structure but not fully so. The figures for the individual orchestras confirm the overall attendance data, namely that in ten of the fourteen orchestras, there was increased attendance, especially for the Finnish Radio Symphony Orchestra, in Helsinki.

Figure 4. **HOME CONCERT HALL AUDIENCE AT GERMAN ORCHESTRAS, 2005 AND 2019**



1. Berliner Philharmonisches Orchester; 2. Münchner Philharmoniker; 3. Gewandhaus-Orchester; 4. Chursächsische Philharmonie; 5. Dresdner Philharmonie; 6. Hamburger Symphoniker; 7. Nürnberger Symphoniker; 8. Gürzenich-Orchester; 9. Bergische Symphoniker; 10. Stuttgarter Philharmoniker; 11. Bamberger Symphoniker; 12. Münchner Symphoniker; 13. Düsseldorfer Symphoniker; 14. Philharmonie Essen; 15. Thüringen Philharmonie Gotha-Suhl; 16. Duisburger Symphoniker; 17. Bochumer Symphoniker; 18. Symphonieorchester; 19. Orchester der Beethovenhalle; 20. Philharmonisches Kammerorchester Wernigerode; 21. Hamburger Symphoniker; 22. Jenaer Philharmonie.

Source: Theaterstatistik (2005/06–2018/19) available at https://www.buehnenverein.de

In the case of Germany, attendance is concentrated in five areas, the largest attendances being in Berlin and Leipzig. And over time their dominant position has if anything increased as can be seen in Figure 4, with several of the smaller venues seeing a decline in attendance over the period covered by the chart.

Concert hall attendance is clearly limited by two factors: the seating capacity and the number of concerts held each year. Even in the case of the Berliner Philharmonisches Orchester, the maximum annual attendance is around 250,000. Assuming for illustrative purposes that each person, say, goes to three concerts per year, this implies that only around 80,000 attend a concert there in any one year, and do

so only three times. So, even in Berlin, Germany's most successful orchestra, aggregate attendance is very limited, and even more so in the cities with less concert hall capacity.

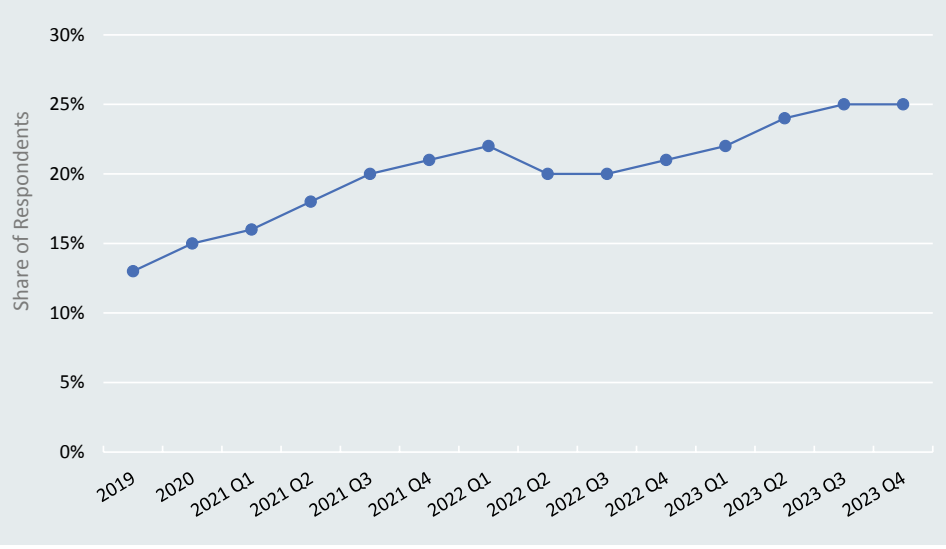
Overall, however, there is no 'crisis' with in-hall attendances at orchestral concerts In Finland and Germany, attendances have if anything increased in the last fifteen years or so. The challenge is to maintain such audience levels into the future, especially if, in time, live streaming of concerts, into home TV sets becomes a widespread reality, with all the advantages discussed earlier above in terms of reception and comforts from such live viewing now available.

Advent of Radio and TV

Radio, and later TV, vastly expanded the reach of classical music, leading to a huge potential increase in the listening audience. Like with in-hall concerts, though, listeners/viewers have no control over the content of radio concerts/classical music. Nonetheless radio brought classical music, potentially, to a vastly wider listening audience.

Figures 5, 6 and 7 give some indication of this. In the case of the US (Fig. 5) for example, around a quarter of the population say they listen to classical music on the radio in 2023. If true, this would mean that over 80 million US citizens access classi-

Figure 5. **POPULARITY OF CLASSICAL MUSIC ON THE RADIO AMONG U.S. CONSUMERS 2019-2023, BY QUARTER**

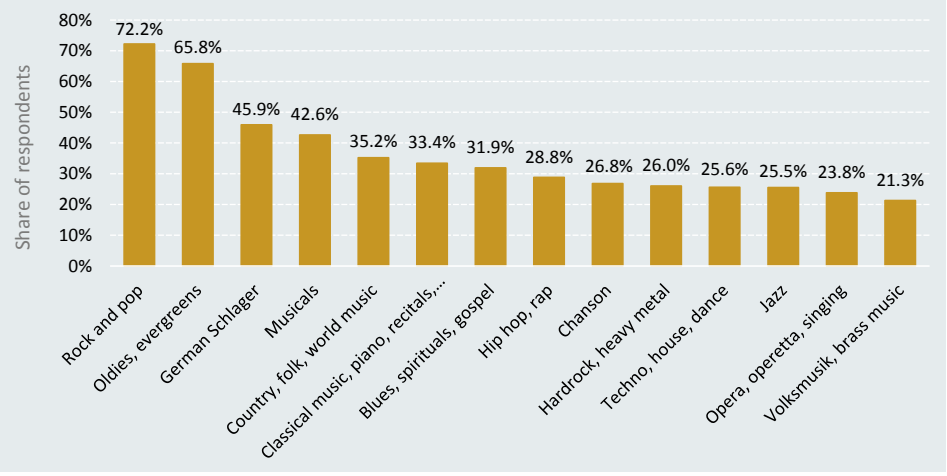


Source: Statista. (June 18, 2024). Popularity of classical music on the radio among U.S. consumers 2019-2023 as of June 2024, by quarter [Graph]. In *Statista*. Retrieved September 11, 2024, from https://www.statista.com/forecasts/1466799/popularity-of-classical-music-on-the-radio-among-us-consumers

cal music via the radio every year, and no doubt most of them multiple times over. An even higher figure applies in Germany (Fig 6), where over a third (33.4 percent) of the adult population listen to classical music, and almost a quarter (23.8 percent) listen to opera and operettas in 2022.

This listening though would rarely be for a full concert and much of it might be just background music. Nonetheless, radio gives the population the potential for listening to live concerts and recorded music, even though the choice of music played is determined elsewhere. The advent of albums, tapes and CD made it possible though for listeners to choose their own form of classical music, and more recently paid for streaming provides a much wider selection of music from which to choose and at a fraction of the cost.

Figure 6. **APPRECIATION OF VARIOUS MUSIC GENRES IN THE GERMAN POPULATION ABOVE THE AGE OF 14 (2022) ***



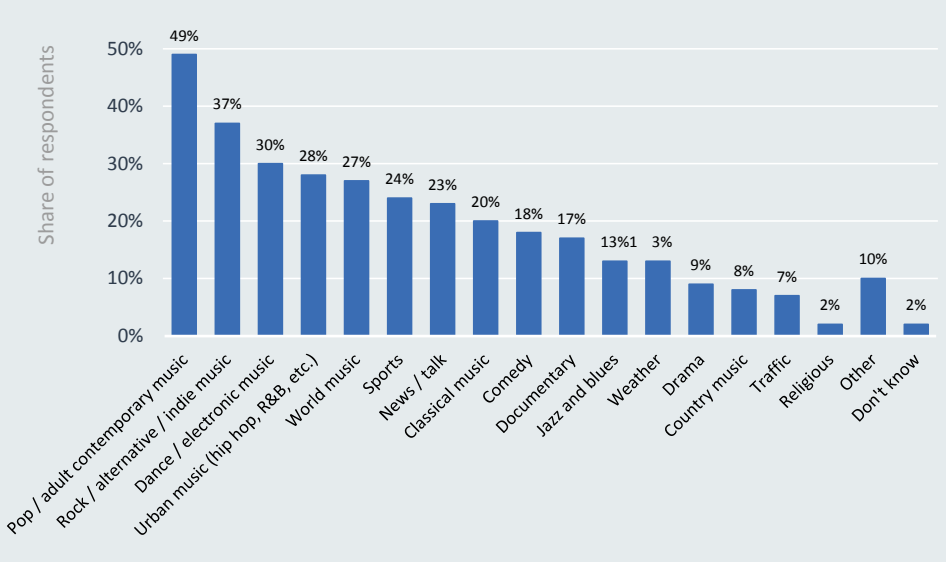
* Survey was taken on a representative sample of 23,015 respondents in 2022 who answered the question *'like to listen very much'* and *'like to listen'*.

Source: German Music Information Center (2022) based on information from the German Orchestra Association (DOV). Retrieved from: https://miz.org/en/statistics/appreciation-of-various-music-genres-by-age-group

Figure 7 provides some interesting data also for Spain, even if based only on a small survey. As can be seen, 20 percent of respondents listen to classical music, either via radio or via digital music services. This number is smaller than that for Germany as presented in Figure 6, but still shows a relatively strong interest in classical music in terms of listening to it via these channels.

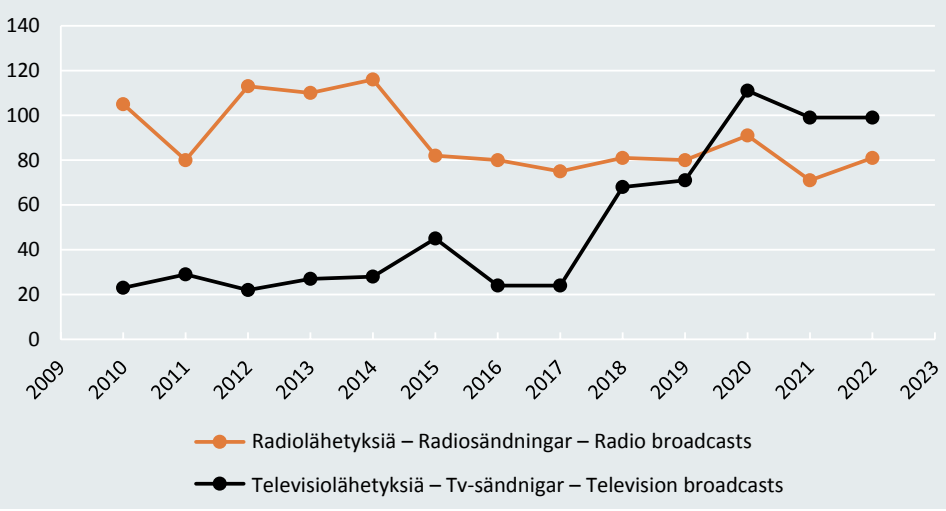
The advent of TV and later DVDs made it possible not only to listen to classical music but also to watch classical concerts. Figure 8 provides some indicative eviden-

Figure 7. **PREFERRED RADIO CONTENT BY GENRE IN SPAIN 2023 ABOVE THE AGE OF 18***



* Survey taken on representative sample of 969 respondents in the age group 18-64. During the survey, the question was phrased as follows: *"In general, which of the following genres and shows do you listen to via digital music services or the radio?"* Multiple answers were possible.
Source: Consumer Insights Global Survey (August 2, 2024). Ways in which classical music fans listen to classical music worldwide as of the 4th quarter of 2018 [Graph]. In *Statista*. Retrieved September 20, 2024, from https://www.statista.com/forecasts/1001376/preferred-audio-content-by-genre-in-spain

Figure 8. **NUMBER OF RADIO AND TV BROADCASTS OF FINNISH SYMPHONY ORCHESTRAS 2010-2022**

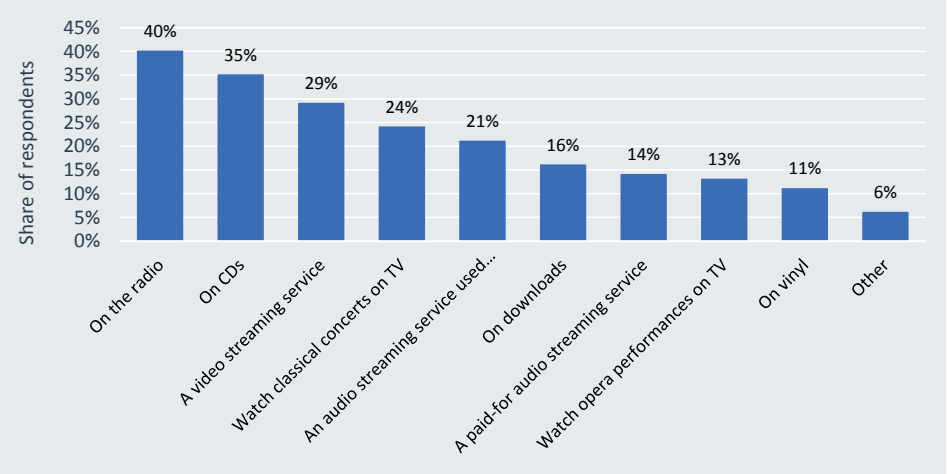


Source: Association of Finnish Symphony Orchestras, annual reports (2000 – 2019) available at Statistics Finland.

ce in this regard, where the number of radio and TV broadcasts by the 14 Finnish symphony orchestras over a thirteen-year period is outlined. There were during this time over 100 radio broadcasts per annum at the start, falling to around 80 in the last few years, still a very sizeable number of radio broadcasts. The increase in TV broadcasts though is the standout trend in this chart, quadrupling in this time, to around 100 each year now.

Interesting data are also presented in Figure 9 and reveals that the majority — 40 percent — of classical music fans worldwide listened to classical music on a radio, and 35 percent listened to the genre on a CD. The third most popular way of listening to classical music was by a video streaming service such as YouTube.

Figure 9. **WAYS OF LISTENING TO CLASSICAL MUSIC ONLINE WORLDWIDE Q4 2018**



Source: MIDiA Research; *Financial Times*, Ways in which classical music fans listen to classical music worldwide as of the 4th quarter of 2018 [Graph]. In *Statista*. Retrieved September 20, 2024, from https://www.statista.com/statistics/1021647/classical-music-listening-worldwide

This shows the remarkable array of channels by which classical music can now be listened to world-wide, reaching hundreds of millions of listeners. As noted above though, it is not clear how much of the music is just 'background' and hence to what extent listeners engage with the music. What Figure 9 illustrates though, regardless, is the huge variety of ways in which classical music listeners can now be accessed.[7]

7 See Statista (2024) for an interesting profile of classical music fans in Spain.

4. STREAMING TO TVS OF CLASSICAL MUSIC CONCERTS

The advent of streaming, recorded and live, though has further dramatically altered the accessibility of classical music, especially in terms of being able to view as well as listen. The focus of the discussion here is on the live streaming of classical music, something that has brought the viewing/listening experience close to being present in the concert hall, as discussed above. The 'social' experience may be different but like with for example football, the viewing of live concerts on home TVs has become a reality for many, with large multiples of in-hall attendances able to view and listen.

While live classical music concerts as discussed above had been available on TV, usually on publicly funded channels, for many decades, the audience had no choice regarding content and timing. The streaming of live music into cinemas took off about seventeen years ago, with the Metropolitan Opera in New York being particularly active in this area well before COVID.

Streaming into cinemas is clearly a lucrative market in which payment from the audience can be easily enforced and monitored. The same might not be true in time for in-house streaming audiences, especially if the enforcement of copyright becomes more difficult.

Berliner Philharmoniker Digital Concert Hall [8]

Many opera houses and concert halls have experimented with streaming, recorded and live, especially during and since COVID. Only the *Berliner Philharmoniker* (BP) has taken this to its natural conclusion and offered all live concerts for streaming, plus access to a large backlog of earlier concerts, talks and so on.

The BP Digital Concert Hall (DCH) was launched in 2008 (see Furu and Reckhenrich 2021). However, building the foundation for digitalisation started years earlier, they argue, mainly due to two major trends. First, there had been a decline of classical music broadcasts on both television and radio in Germany, drops in audition licences, as well as a major downward trend in sales of classical music recordings. Secondly, existing technologies and formats for music recordings were under threat. Consequently, the Berlin Philharmoniker Orchestra considered their response to these negative trends.

For the DCH, Germany as of 2021 was the largest market with a share of almost 30 percent of total sales (Furu and Reckhenrich 2021). The remaining over 70 percent of customers were internationally spread. The DCH has around 17 percent of customers in Japan, followed closely by the USA and other European countries. From the beginning, the strategy of the DCH was clearly oriented

8 See Manzi (2017) for an impassioned plea not to do away with live in-hall concerts.

towards a business model that offered content for a fee. At the time, the 'pay-per-view' trend was starting to grow in popularity on the internet. When the DCH started in 2009, however, such offers were still rare. In the meantime, more and more providers moved towards charging for formats that go beyond a certain basic amount of information.

As the BP saw themselves as the benchmark for the highest standards, customers having to pay for accessing premium content was easier to argue for. Therefore, from the very beginning, the Berlin Phil Media marketed the DCH as a stand-alone offering, where customers would get access to their product, which was classical music performances of the highest quality. In the beginning of 2009, however, it was difficult to estimate how many customers could be attracted and converted to subscribers.[9] As more technical hurdles were overcome, the number of visitors of the DCH continued to grow. Today, the DCH is a real technology company (Furu and Reckhenrich 2021).

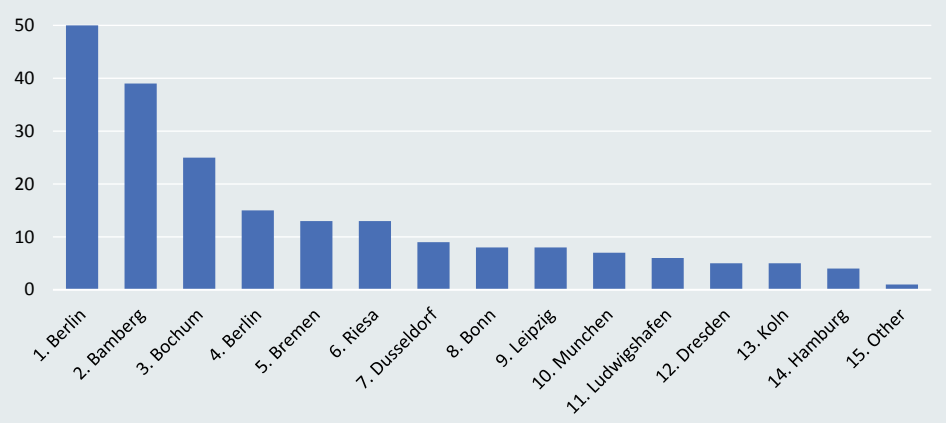
Spread of Streaming Services

Streaming live concert productions has clearly spread well beyond the *Berliner Philharmoniker,* as seen in Figure 10. It has the most streamed concerts at 50 per annum, but the *Bamberger Symphoniker* is not far behind, with almost 40 per annum. Unlike with in-hall concert attendance, the concentration of streaming in a small number of concert halls is not a problem in terms of accessibility, as the live concerts can in fact be relayed to anywhere in Germany and even to most parts of the world as seen earlier in relation to the DCH.

Streaming of symphony orchestra concerts has been taken up in many other countries, but not on the same scale perhaps as in Germany. As seen in Figure 11 for example, there has been an explosion in the streaming of Finnish Symphony Orchestras since 2019. The data here relate to the web (online) streaming *only,* and hence exclude live streaming to home TV sets.

9 By 2013, The Digital Concert Hall was considered a resounding success (see Uhl, Schmid, and Zimmermann 2013). In addition to its existing core audience, the Berliner Philharimoniker had attracted a total of over 3.8 million to its audiences, with the new streaming platform. The archive of the Digital Concert Hall then contained over 200 concert recordings with about 500 musical pieces, 150 interviews, as well as 20 documentaries. Up to that point, 2.5 million hours had been streamed, which corresponds to 600 sold out concerts in the Berlin Philharmonic Hall. Fifty percent of the revenue was generated from people who lived outside the European Union. Compared to the traditional audience, the age of the average consumer was lower. By June 2013, over 135,000 users had installed the *Berliner Philharmoniker*'s app on their mobile devices.

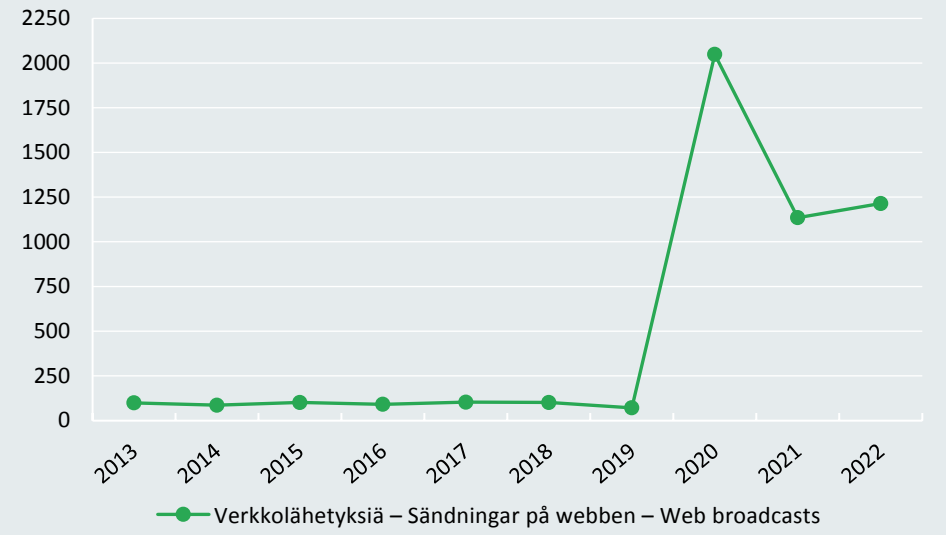
Figure 10. **NUMBER OF STREAMING CONCERT PRODUCTIONS PER ANNUM OF THE CHOSEN SYMPHONY ORCHESTRAS IN GERMANY, INCLUDING DIGITAL CONCERT HALL FOR BERLINER SYMPHONIKER**



1. Berliner Philharmoniker (Digital Concert Hall); 2. Bamberger Symphoniker; 3. Bochumer Symphoniker; 4. Konzerthausorchester Berlin; 5. Bremer Philharmoniker; 6. Elbland Philharmonie Sachsen; 7. Dusseldorfer Symphoniker; 8. Beethoven Orchester Bonn; 9. Gewandhausorchester; 10. Munchner Philharmoniker; 11. Deutsche Staatsphilharmonie Rheinland-Pfalz; 12. Dresnder Philharmonie; 13. Gurzenisch Orchester; 14. Symphoniker Hamburg; 15. Other orchestras.

Source: Berliner Philharmoniker/Digital Concert Hall Programme Brochure for Season 2024/25 available at: https://apps.digitalconcerthall.com/website/season_24_25/programme_brochure_en.pdf and Theaterstatistik (2021/2022).

Figure 11. **NUMBER OF WEB BROADCASTS (ONLINE STREAMING) OF FINNISH SYMPHONY ORCHESTRAS 2013-2022**



Source: Association of Finnish Symphony Orchestras, annual reports (2013 – 2022) available at Statistics Finland.

5. CONCLUDING COMMENTS

The continued existence of live in-hall orchestral music has been questioned on and off for decades (see e.g. Baumol and Bowen 1968, Flanagan 2012, Pompe and Tamburri 2022). The initial concern was that orchestras simply could not continue to be funded through income from concert audiences alone, without increasing state support and/or private philanthropy. This arises from the so-called 'cost disease', which applies to many service industries such as education, health, and the performing arts, first considered by Scitovsky and Scitovsky (1959) and applied specifically to the performing arts by Baumol and Bowen (1968). This is because the same number of players are required today to play a Beethoven symphony as two hundred years ago, and concert hall audience is severely restricted. Hence, technological change cannot be applied and, as a result, there is no scope for productivity increases.

There followed the concern that further technological change had altered the nature of receiving and producing classical music so much that the very existence of in-hall live orchestral concert audiences was in question. The worry was that people would not attend in-hall given the vastly improved images and sounds available on one's home screen and the sheer cost and inconvenience of attending.

A more optimistic scenario, as seen earlier, is that the possibility of live transmission of concerts into people's homes could bring increased paying audiences for some orchestras, especially if the example of sports could be replicated. And as with sport, live audiences in-hall could, in many cases, be maintained or increased at the same time, as there was a very large expansion in paid-for home audiences. If the latter were true, it would ensure the survival of orchestras and make redundant the cost disease as applied to them.

However, what the data for Finland and Germany show is that in-hall orchestral music audiences are alive and well there, with no decrease in in-hall audiences evident, unlike in the US, and perhaps other countries. The pattern in both countries is one of slowly increasing in-hall audiences, per head of population. There has also been a huge increase in the consumption of orchestral music, especially via radio programmes and to a lesser extent TV broadcasts. The 'sea change' though occurred with streaming, of live broadcasts of orchestral concerts, as seen, directly into people's home.

As Ateca-Amestoy and Castiglione (2023) noted, as seen above, digitisation has indeed overcome the traditional constraints imposed by physical location and cost, thereby as seen greatly expanding their outreach.

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