

*UDC code 78.07**Бернард К. /НИДЕРЛАНДЫ/
Bernard K. /NETHERLANDS/***КОМПАКТ-ДИСКТИ (CD) БАШЫНАН АЯГЫНА ЧЕЙИН КАНТИП ЧЫГАРУУ КЕРЕК:
ТУВАЛЫК «АЙ ХЭРЭЛ» ТОБУНУН ДИСКНИН ҮЛГҮСҮНДӨ****КАК ИЗГОТОВИТЬ CD ОТ А ДО Я, ВКЛЮЧАЯ КЕЙС-СТАДИ:
CD АНСАМБЛЯ «АЙ ХЕРЕЛ» ИЗ ТУВЫ****HOW TO PRODUCE A CD FROM A TO Z, INCLUDING A CASE STUDY:
THE CD OF THE AY KHEREL ENSEMBLE FROM TUVA**

Аннотация. Алгач компакт-диск (CD) жаңы коммерциялык алып жүрүүчү катары в 1982-жылы Японияда, андан кийин 1983-жылы Америкада пайда болгон. Бирок 1988-жылы өндүрүш чыгымдары көп болуп кетип, кээ бир эле чакан компаниялар CD чыгарып калды. 1988-жылдан баштап CD дисктерин сатуу винил пластинкаларына караганда көбөйдү, андан үч жыл өткөн соң кассеталардан да көп сатыла баштады. Pan Muziekdocumentatie 1970-жылдары негизделген Европадагы жалгыз эле фолк-лейбл эмес болчу. 1976-жылы Нидерландынын Гаагасында салттуу музыканын топторунун винил пластинкаларын жайылтуучу Pan Records ачылган, ага кошумча Pan Music Documentation Foundation («Stichting Pan Muziekdocumentatie») түзүлгөн.

1988-жылы Pan Records өзүнүн биринчи компакт-дискин чыгарды, ал эми 1991-жылы Ethnic Series топтомунда этникалык музыкага арналган биринчи продукциялык серия жарык көрдү. Макалада автор чакан үнжазуучу Pan Records компаниясында CD дисктерди чыгаруу иштерин карайт, ал процесстеги ишкананын методикалык табылгаларын талдайт. Ошондой эле 2025-жылдагы дисктерди чыгаруу жана жайылтуу иштерине көз сала кетет.

Негизги сөздөр: компакт-дисктерди өндүрүү, винил, Pan Records, Тува, Ай хэрэл, көмөкөй ырдоо.

Abstract. The CD was first introduced commercially in Japan in 1982 and the U.S. in 1983. By 1988, production costs dropped significantly, allowing even small record companies to produce CDs. That same year, CD sales surpassed vinyl records, and by 1991, they overtook cassette sales. In the 1970s, smaller operations began filling the role once held by folk label pioneers, a trend seen in both the U.S. and Europe. In 1976, Pan Records was founded in The Hague, Netherlands, with the goal of publishing vinyl LPs of local and regional folk music. By 1988, Pan Records shifted focus exclusively to CDs, releasing its first CD that year. In 1991, the company launched the Ethnic Series, highlighting global ethnic music.

This paper explores the production of CDs at a small label like Pan Records in the late 1980s, the changes in production methods over the years, and presents a case study of CD production in 2025, reflecting on the evolution and impact of these developments in the music industry.

Keywords: CD production, vinyl, Pan Records, Tuva, Ai Kherel, useful singing.

Аннотация. Компакт-диски впервые появились в продаже в Японии в 1982 году, а в США — в 1983 году. К 1988 году производственные затраты значительно снизились, что позволило даже небольшим звукозаписывающим компаниям выпускать компакт-диски. В том же году продажи компакт-дисков превысили продажи виниловых пластинок, а к 1991 году — продажи кассет. В 1970-х годах небольшие компании начали занимать место пионеров фолк-лейблов, что наблюдалось как в США, так и в Европе. В 1976 году в Гааге (Нидерланды) была основана компания Pan Records, целью которой было издание виниловых пластинок с местной и региональной фолк-музыкой. К 1988 году Pan Records полностью переключилась на выпуск компакт-дисков, выпустив в том же году свой первый компакт-диск. В 1991 году компания запустила серию Ethnic, посвященную этнической музыке со всего мира.

В данной статье рассматривается производство компакт-дисков на таком небольшом лейбле, как Pan Records, в конце 1980-х годов, изменения в методах производства на протяжении многих лет, а также представлен анализ производства компакт-дисков в 2025 году, отражающий эволюцию и влияние этих изменений на музыкальную индустрию.

Ключевые слова: Производство компакт-дисков, винил, Pan Records, Тува, Ай Херэл, полезное пение.

Introduction. The CD (compact disc) was first introduced as a new commercial medium in Japan in 1982 and in the United States in 1983. In 1988, production costs had dropped so much that even small record companies with limited budgets could produce CDs. In 1988, CD sales surpassed those of vinyl records, and three years later, in 1991, those of cassettes. In 1990, an anonymous Midem contributor wrote: «Not everyone believes in progress. Owners of eight-track, {or} quadrophonic music systems don't. Soon they will be joined by another, far numerous group: the LP-collector. (...) It probably comes as little consolation to discover that the CD saved the music industry from stagnancy in the 1970s. (...) The process will not end there, and the CD itself {will} be complemented by yet more digital media.» [Legrand, 1990: 88-89]. That last line proved to be prophetic words in 1990, as we shall see later in this paper. And in 1997 Leo Boudewijns, former general manager of the Dutch Society for the Recording Industry NVPI concluded: «In 1980, the great malaise in the record industry announced itself. The public's enthusiasm decreased sharply, fewer and fewer LPs and singles were bought and record companies were forced to cut their roots. (...) There was an urgent need for a new impulse. The arrival of the CD, a sensational invention by Philips, provided new impetus. While recording technology had continued to develop, the LP, as the carrier of all that beauty, had reached the end of its possibilities. And what many (...) thought was impossible, happened, the LP (...) had disappeared from the market within a few years and was replaced by the small silver disc (...)»¹ [Boudewijns 1997:24].

In the 1970s «smaller operations were springing up to occupy the position that had once belonged to the folk label pioneers» [Goldsmith 1988: 390]. Although the previous quote relates to the US recording industry, it also applies to the European situation. Pan Muziekdocumentatie was not the only folk label to be established in

Europe in the mid-1970s.

Pan Records was founded in 1976 in The Hague, Netherlands as Pan Music Documentation Foundation («Stichting Pan Muziekdocumentatie»), with the explicit goal of publishing vinyl LPs by local and regional folk/traditional music bands². I joined the board as secretary/treasurer in 1980, and bought out the shares of the other board members in 1988 and became the sole owner. The foundation was dissolved, and a new company, Pan Records (see fig. 1), was established to follow in the footsteps of Pan Music Documentation.

Between 1976 and 1988 Pan released 31 LPs, several of which were later re-issued on CD.

In 1988 I decided to focus exclusively on CDs in the future and not release vinyl anymore. I also wanted to expand the focus to include traditional and/or ethnic music from around the world. In 1988 Pan Records released its first CD, and in 1991 the first production came to light in its newly established Ethnic Series, that would focus on ethnic music of the world.

In this paper, I describe the production of CDs at a small record company (Pan Records) around 1988, mention the developments and changes in production methods over the years, and then present a case study of a CD-production in 2025.

CD-Production in 1988

Basically a number of separate steps, needs, and requirements are/were distinguished, which were all coordinated from the Pan Records office (which had a staff of five in the 1990s).

1. The Music. The music which was usually in analog format needed to be transferred to digital. Until mid-1995 that was done via PQ-encoded tapemasters at 44.1 kHz in PCM-1630 format. PCM 1630 was a wide (1-inch) tape. Such a digitization could only be made in highly specialized studios and hence was not cheap. In late 1995 the CD-pressing plants began to accept CDR-masters instead of PCM-1630. And thus CD-production became less expensive, as

¹«In 1980 kondigde zich de grote malaise in de platenbranche aan. De animo van het publiek nam sterk af, er werden steeds minder langspeelplaten en singles gekocht en platenmaatschappijen waren gedwongen de bijl aan hun wortels te leggen. (...) Er was dringend behoefte aan een nieuwe impuls. De komst van de CD, een sensationele uitvinding van Philips, zorgde voor nieuw elan. Terwijl de opnametechniek steeds verder was ontwikkeld had de LP, als drager van al dat moois, het einde van zijn mogelijkheden bereikt. En wat velen (...) voor onmogelijk hielden, gebeurde, de langspeelplaat (...) was binnen enkele jaren van de markt verdwenen en vervangen door het kleine zilveren schijfje (...)»

²I wrote more extensively on the history of Pan Records and its transition from vinyl to CD in «The first years of Pan Records' "Ethnic Series (...)» [Kleikamp 2018].

part of the work could be done «in house» with sound editing programs like Pro Tools and CD-mastering programs like Toast. Still later, in the 2010s, CD-pressing plants started to accept digital transfers via the internet.

Music can be newly recorded, either in a concert place, in the field, or in a studio. Music may also come from institute or radio archives or from transfers from obsolete media (like wax rolls or shellacs). Pan Records didn't have its own studio, but worked with several independent studios of which the engineers/owners knew how to record acoustic (traditional, folk, or ethnic) music. Pan Records did own sets of portable digital recording equipment and microphones with which to record on location, in the field.

2. The Text. We distinguish between the metadata³ and the annotation. Metadata are the label number, title of the CD, performers, track titles, recording place, -date, -engineer, and -studio, names of designer, producer, executive producer, names of record company, composers and lyricists, rights owners, sponsors. In short: everything that is mentioned by Pan Records on the backside or inner sleeve(s) of the CD.

3. The Design. Already by the end of the 1940s. «there was growing recognition that cover art helped to sell records» [Goldsmith 1988: 202]. At Pan Records much attention is paid to the cover, which we thought should reflect the contents and also be attractive and eye-catching. Sometimes a release was delayed for lack of an adequate cover. We also decided to have distinguishing designs for separate series, like the Ethnic Series, Choral Series, and Archival Series of the Royal Tropical Institute.

Metadata, annotation and photo's go with instructions about the desired layout to the design person, who then makes a design into a blueprint model, of which the specifications are provided by the CD-plant. Until the late 1990s the final design was made on film, and after that a design was made as a pdf. This saved a step in the production process, and thus CD-production became less expensive again.

The package is an integral part of the design. In 1988 Pan Records started with jewel box and tray for the CD and the printed matter to put in.

The combination of jewel box and tray clearly had disadvantages. They crack easily during transport. It is made from plastic and thus not friendly to the environment. But it took a while before alternatives became available. Today at Pan Records we use wallet or digisleeve (which both are made entirely of paper and are thus more environmental-friendly) and sometimes a digipack with a plastic tray.

Over the years many fancy artistic exotic designs for CD-packages have come on the market. Basically whatever you wish can be made, at a price.

4. The CD-plant. The design and the music (in whatever form) are sent to the CD-pressing plant, who (after an offer is made and accepted) will turn that into a final product that is ready to be put on the market.

5. The Distribution. Of course, having made a CD is only half the job. You then need to sell it. Until the early 2000s every self-respecting company had sales representatives travelling around the record-outlets. The golden years of CD sales and -distribution were the 1990s, but that came to a slow end around 2002 with the rise of the internet. It was then that the young generation got the illusion that music was free and the music industry fought that perception, rather than going with the flow. «The early 2000s were brutal for the record industry. Major labels downsized, merged, or folded entirely. (...) Illegal file-sharing exploded, and CD sales plummeted» [Norkawich, 2025].

From 2002 onwards physical CD-sales were dropping yearly by 10%-15%, until suddenly with a big bang in March 2008 it dropped by another 90% from one day to the other, worldwide. The reason why this happened practically overnight to literally every record company is as of yet unexplained, but the reasons for the gradual decline in physical sales are well-known: economic crisis, saturation of the market, piracy, and illegal downloads via the internet. What did save (part of) the music industry was digital distribution. From 2009 onwards Pan Records found a digital distributor (an «aggregator») in IODA (Independent Online Distribution Alliance)⁴, which merged in 2012 with The Orchard. Both companies are/were

³ A set of data that describes and gives information about other data.

⁴ I made first contact with representatives of IODA at the MIDEM 2007. MIDEM: *Marché international de l'édition musicale, International Music Publishing Market*.

owned by Sony. A music aggregator acts as an go-between between artists or labels and digital platforms such as Spotify, Apple Music, Deezer, and Amazon Music. An aggregator simplifies the process of uploading and distributing music to these platforms, and in return charges a percentage of the proceeds. In the late 2010s the business model of online track sales gradually changed to streaming, which generates much less profit for the artists and the record company.

A 2013 study about the use of digitisation by record companies in Netherlands concluded that «record companies utilize the internet and digital media primarily for e-commercial and e-marketing activities that focus on retailing of musical products and motivating sales. For them, the internet and digital media have affected their traditional business model and therefore they are now looking for alternatives» [Geurts 2013: 29]. As far as Pan Records is concerned the situation is unchanged since 2013.

Today (in 2025) CDs still sell in small numbers, at concerts, or via mail-order and online retail outlets like Discogs. Whereas in the 1990s initial production runs of CDs were 500x or 1000x, with regular re-runs, today a production run is usually 250x without the expectation of re-runs. Some productions are not even produced as physical CD anymore, but just enter life as a catalogue number, digital cover and music tracks, and a pdf with the annotation, and are only available as digital downloads.

6. Other methods of generating income.

a. Publishing. Record companies generally have a separate publishing company, which registers original works of artists who are signed to the company. In return for that, the publishing company is granted a percentage of the proceeds: 33.3% for compositions with lyrics or 50% for instrumental music. The proceeds come from when the music is made public: via radio, television, film, and live concerts at venues which all pay author's rights, that then goes to national copyright organizations who collect on behalf of artists and publishing companies, who then further divide those proceeds.

b. Licenses. Copyright owners can issue licenses that allow others to legally use their work in their projects. A license agreement will include how the work will be used⁵ and determines a percentage of the proceeds with usually an advance sum or sometimes a buy-out stipulated. Licenses by Pan Records are/were usually for one track only, to be released by another record company on a sampler-CD. Pan Records typically only sells licenses and does not buy licenses.

c. Synchronisation licenses. A synchronization license (sync license) is an agreement for the use of (part of) a music track in a video, film or on television, where it is generally used as background (spheric) music to a scene.

Popular belief had it that the greater income of record companies came from the selling of finished product (vinyl, cassette, CD), but this concept is untrue. The great value lies in owning the rights⁶, which can be exploited. Exploitation of rights in the long run generates a substantial income.

Case study: Ay Kherel, Pan Records no. 237. A CD production in 2025.

1. The Music. I do not remember exactly when The Ay Kherel CD came into the planning, but it must have been after the year 2000. In that year Pan Records released a CD of Gennadi Tumat (see fig. 2), a well-known throat-singer from Tuva. He had been a member of the renowned Tuva Ensemble, and founded his own ensemble Ay Kherel («Moonlight») in 1994. Pan Records had been his representative since February 1991 when the Tuva Ensemble began touring in the West until his passing in December 1996. Over the years Pan Records collected live concert- and radio recordings of his ensembles whenever possible⁷, and also made several studio- and field-recordings of him and his ensembles as well. This had the result that by 2000 there was plenty of material to pick from for the production of Gennadi Tumat's solo CD, and much of that was not used for one reason or another and was kept lying «on the shelf», as

⁵ In such an agreement the term, duration, territory, and royalty percentage are specified, and mentions if the use is exclusive or non-exclusive.

⁶ The various rights associated with generating income for a record company are: publishing rights, master rights, neighbouring rights, copyrights.

⁷ It was always contractually stipulated to be free of rights and claims from the recordist or venue, which gave Pan Records the possibility to later use those recordings for CDs.

it were. In the following years several more live recordings of the Tuva Ensemble surfaced, and by 2015 the idea was suggested by Choduraa Tumat, a scholar and traditional musician from Tuva, to produce a CD of Gennadi Tumat's Ay Kherel, as there was ample material by then for another Tumat CDs and there was a need for such a production in Tuva.

Several issues prevented this CD from being released soon. First of all it was low in the planning list, so several years would pass by before it could be released. After an initial selection was made from the multitude of remaining live and studio recordings, we needed to check on overlaps with Gennadi's solo-CD, with the outcome that several live recordings were dropped of which studio versions existed on the other CD.

2. The Text. It was necessary to decide if we wanted to give the name Ay-Kherel retroactively to two ensembles with which Gennadi toured in 1992 and 1993 and of which he was clearly the leader. We decided that that was OK, so that gave us a reason to select music from the recordings of those two proto-Ay Kherel ensembles. Ay Kherel itself was founded by Gennadi in early 1994 (see fig. 3), and in its brief existence has had three line-ups centered around Gennadi Tumat. Information on the five different line-ups needed to be collected from among the several dozen files with tape annotations in the Pan

Records' archive. Information and photographs were gathered to write a history of Ay Kherel. The metadata were collected.

3. The Design and 4. The CD-plant. Step 3 and step 4 in the production process of the Ay Kherel CD are identical to steps 3 and 4 as described above. It was decided to use a digisleeve as the CD-package. The aim was to release the Ay Kherel CD in July 2025.

5. The Distribution. The production run is 250x. We expect to sell some copies straight to institutions in Tuva, give away a number of CDs, sell via mail-order and at festivals and conventions that we visit with a Pan Records promotion stand. There is a large community of Tuva aficionados, of whom we hope they will also purchase the CD.

Conclusions

Music production and distribution in 2025 are distinct from the 1990s. Even though CD manufacturing has gotten far more affordable, it has also grown harder to sell the physical product. The reasons for that, which relate to the arrival of the internet and became obvious in the early 2000s, are fourfold: the economic crisis, saturation of the market, piracy, and illegal downloading. The conventional distribution model of the physical product wherein sales representatives visit outlets to get orders, has been replaced by online distribution, streaming, and mail order. In 35 years the world of music distribution has shifted drastically.

References:

1. Boudewijns, Leo (1997). *Stilte, Opname. 100 jaar Geluidsopname in Nederland* (Silence, Recording! 100 Years of Sound Recoring in Netherlands). NVPI, Hilversum.
2. Geurts, Amber (2013). *The Show Must Go On*. Erasmus University, Rotterdam.
3. Goldsmith, Peter David (1988). *Making People's Music: Moe Asch and Folkways Records*. Smithsonian Institution Press, Washington.
4. Kleikamp, Bernard (2018). The first years of Pan Records' "Ethnic Series" and Dr. V.M. Shchurov's involvement into its shaping. *Festschrift to honour of 60 years of fieldwork by Dr. V.M. Shchurov*, Moscow.
5. Legrand, Emmanuel (ed.) (1990). *Midem: 25 Years of Music*. Midem Organisation, Paris.
6. Norkawich, James A (2025). *The Rise and Fall of the Record Industry*. LinkedIn, April 26, 2025.

Illustrations

fig. 1 Pan Records logo (design by Piet Schreuders, November 1984).

fig. 2 Cover art of Pan CD no. 2090 (Gennadi Tumat, photo by Hajo Hohl, 1991, released 1990).

fig. 3 Ensemble Ay Kherel, left to right Orlan Chudekpen (chanzy), Vladimir Soyán, Gennadi Tumat (guitar). Photo by Istvan Santha, 26 June 1994 in Pilisborosjenő, Hungary.