Creativity and Innovation in the Music Industry

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Chapter 2
The Emergence of the Phonographic Industry Within the Music Industry

2.1 The Phonograph as Business Machine

The music industry did not originate with the invention of the phonograph and the record but with the beginning of mass distribution and the commercial use of music. We can thus speak of a music industry from the moment that music production and consumption severed ties with the context of the feudal court and church. Of course, we cannot determine an exact date, since we are talking about a developmental process characterized by a seamless transition from a feudal court culture to that of a bourgeois-capitalistic one. Even though the printing of sheet music was invented in 1501, this alone did not constitute an industry as such; it was merely a business, since the technology of copper engraving allowed for all but a few manually produced copies designated for an elite of aristocratic consumers.

The foundation of the industrial basis for the music industry only resulted from the interplay between a blossoming music publishing business and an emerging public music concert culture in the eighteenth century.[1] Concert and opera promoters arranged successful public performances of music; music publishers subsequently distributed these performances in forms of sheet music and adaptations for various instruments. Consequently, music publishers and concert promoters assumed the function of institutional gatekeepers who decided which music reached the public and in what specific form, thus determining the parameters within which creativity was able to unfold (Tschmuck 2001a). They decided the fortunes of composers and practicing musicians' careers, which led Heinrich Heine to write a pamphlet attacking the omnipotent Parisian music publisher Moritz Schlesinger: "I witnessed with my own eyes how certain famous musicians cowered at his feet and crawled and wagged their tails in order to receive some praise in his journals; and about our highly-praised virtuosos, who in all of

[1] The first publicly accessible opera house was the Teatro San Cassio in Venice, which opened in 1637. Violin virtuoso John Bannister gave the first public concert in London in 1672. In Paris, public concerts regularly took place from 1683, in Germany from 1743, and in Vienna from 1772.

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Europe's capitals are being celebrated like princes, we could justly say that the dust of Moritz Schlesinger's boots is still visible on their laurel crowns".[2]

These gatekeepers did not just control artists but also dominated the subsidiary elements of the value-adding chain. Owners of coffeehouses and dance bars, as well as operators of amusement parks, concert halls, and opera houses, depended on the impresarios' mediating activities. In addition, the steady increase in music instrument production, especially that of pianos, would have been unimaginable without the exponential growth of repertoire available on sheet music.

At the heart of the music industry during the last third of the nineteenth century were music publishers and promoters, whose market power depended on the technological base of music concerts and the subsequent distribution of music through mass-produced sheet music.

> Sheet music was the vehicle for the mass dissemination of music, and music publishers were at the center of the music business (Garofalo 1997, p. 17).

Their power became most obvious in Tin Pan Alley, a street section in New York City that encompassed parts of Broadway and 28th Street, where countless music publishers and songwriters lived and worked.[3] In close proximity to the vaudeville theatres, publishers controlled the mainstream of U.S. entertainment music and had enough power to turn songwriters, lyricists, and singers into stars. A primary means for accomplishing this feat was the printed sheet music of popular songs that were currently played in vaudeville comedies. Thus, more than 2.4 million copies of "All By Myself" sold in 75 weeks, two million of "Nobody Knows" in 70 weeks, and more than 1.7 million of "Say it with Music" in 75 weeks (Goldberg 1930, p. 218). And five million copies of Tin Pan Alley composer Charles K. Harris' "After the Ball" sold in just a few years after its publication in 1892 (Hamm 1983, p. 285).

The control of printed sheet music was the technological prerequisite for the music publishers of Tin Pan Alley to be commercially successful. If, on top of this, they also bet on the right horse at the right time—that is, if they published the right song at the right time—they could harvest enormous profits. However, the potential for such profits was mitigated by the financial risk of poorly selling sheet music.

In all of this, little room existed for technological and musical experiments, and the latest invention of Thomas Alva Edison—a machine to record the human

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[2] Heinrich Heine (Lutetia—Berichte über Politik, Kunst und Volksleben: Musikalische Saison 1843. Paris, den 20. März 1843).

[3] "Tin Pan Alley" became synonymous with those musicians who worked under contract with music publishers. According to legend, the term "Tin Pan Alley" was coined by a New York journalist who alluded to the tin-like sound of the ill-tuned pianos that could be heard playing in the music publishers' saloons.

voice—did thus not draw the attention of the various Tin Pan Alley protagonists. The invention of the phonograph, as it was soon called,[4] was probably not even noticed by the centers of the music industry.

Yet, it was not simply the mighty of the music industry but also Edison himself who initially failed to recognize the commercial potential of his invention. This is all the more remarkable since shortly after Edison presented the phonograph to the public, the possibility of music reproduction was indeed recognized but not seriously considered.[5] Even before the patent for the Edison-phonograph was issued in the spring of 1878,[6] a letter by *Scientific American's* publisher, entitled "A Wonderful Invention—Speech Capable of Infinite Repetition from Automatic Records", reported, among other things, about the future applicability of this new invention.[7] The author raved that from now on it would be possible to archive voices of the deceased or to record phone calls, but also operas and speeches "sung by the greatest living vocalists [that] thus recorded [are] capable of being repeated as we desire". Edison himself had considered the possibility of recording music from the beginning. In an article written for the *North American Review* in June 1878, he lists ten areas of application for his invention. In addition to the possibilities of dictating letters in advance, developing phonographic books for the blind, or storing phone calls, Edison also saw the potential for reproducing music (Gelatt 1955, p. 29; Galoppi 1987, pp. 11–12; Gronow 1998, p. 1). That he did not immediately seize upon the possibility of the last application, however, was not merely because of the poor quality of the phonograph's recording and playing—at first, only the human voice could be reproduced with clarity—but also because of Edison's initial dislike for abusing his invention as a "toy" for playing recorded music.

On April 24, 1878, Edison founded the Edison Speaking Phonograph Company. To this end, he assembled financiers who were all closely connected with the telephone industry, which just like the recording industry was still in its infancy. These financiers regarded the future of the phonograph to be in its ability to store phone messages and in its use as an office machine—essentially as a Dictaphone—to store speech.[8]

The phonograph was initially viewed as a telephone industry innovation that could be used in an office. The responsible protagonists thus completely fixated on

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[4] Abbé Lenoir first used the term "phonograph" in October 1877 in an article he wrote for the magazine *La Semaine du Clergé*.

[5] The Edison-phonograph was introduced to the publishers and editors of *Scientific American* in the magazine's rooms on December 7, 1877.

[6] The patent was listed with the number 200.521 at the U.S. patent office on February 19, 1878.

[7] Scientific American, November 17, 1877; cited in Read and Welch (1976, pp. 11–12).

[8] In addition to Edison, the first five shareholders of the Edison Speaking Company were Gardiner G. Hubbard, George L. Bradley, Charles A. Cheever, Hilbourne L. Roosevelt, and Uriah H. Painter. Hubbard was the father-in-law of the inventor of the telephone, Alexander Graham Bell. Hubbard was also simultaneously active in the management of the Bell Telephone Co. and the New England Telephone Co.

its application as an office machine. The Edison Speaking Phonograph Company was instructed to produce and distribute the phonograph to government agencies and large corporations. However, commercial success remained elusive, and after having produced about 600 machines, production seized in 1879 due to a lack of demand. Before 1879, Edison had already turned away from his invention in order to successfully experiment with electricity and electric light. Astonishingly, after the euphoric celebration of the phonograph's initial success, Edison's invention was soon forgotten.

> From 1879 to 1887 the phonograph went into torpid retirement. The tin-foil apparatus had had its day; the public had lost interest; the glorious prophecies were unfulfilled (Gelatt 1955, p. 33).

No industry had formed around the phonograph. The formation of the phonograph industry occurred 10 years after the original invention of the phonograph—as a result of an act of imitation. In 1880, Alexander Graham Bell created the Volta Laboratory in Washington DC with prize money awarded to him by the French Academy of Sciences for his invention of the telephone.[9] At the lab, Chichester Bell, his cousin, and Charles Sumner Tainter researched electro-acoustic phenomena. However, the results of their research remained thin. Until 1885 they had applied for only five patents. Among them, though, was a machine called the "Graphophone", a modified version of the Edison-phonograph. Bell and Tainter had substituted a layer of wax for the tinfoil covering the cylinder, and they had altered the design of the stylus that transmits sound vibrations onto the cylinder during the recording process.[10]

The Graphophone patent was recorded on May 4, 1886,[11] and Bell, together with Tainter, founded the Volta Gramophone Co., which was taken over in 1887 by a group of investors and renamed American Gramophone Company. However, Bell and Tainter continued to control the production of the Graphophone in Bridgeport. Earlier, they had attempted to come to an agreement with Edison about a collaborative improvement of the phonograph. Edison, however, declined any form of collaboration and began with some urgency to work on an improved version of his phonograph. In 1888 alone, Edison applied for 17 new patents that he incorporated into the development of the "improved phonograph".[12]

Edison accused Bell and Tainter of plagiarizing his invention, claiming that they had merely altered a few minor details. Bell and Tainter, in turn, accused Edison of having copied their patent, since his "improved phonograph" now featured the wax-layered cylinders as well. These arguments would have surely

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[9] Emperor Napoleon III founded the Prize of the Academy of Sciences in honor of the French physician and researcher of electricity André Volta.

[10] Read and Welch (1976, p. 31) explain: "The only change which had been made was that instead of using tin foil, wax had been embedded in the grooves of the iron cylinder and into this way the voice vibrations had been incised, rather than indented".

[11] U.S. patent number 341.214.

[12] The "improved phonograph" was registered as patent number 386.974.

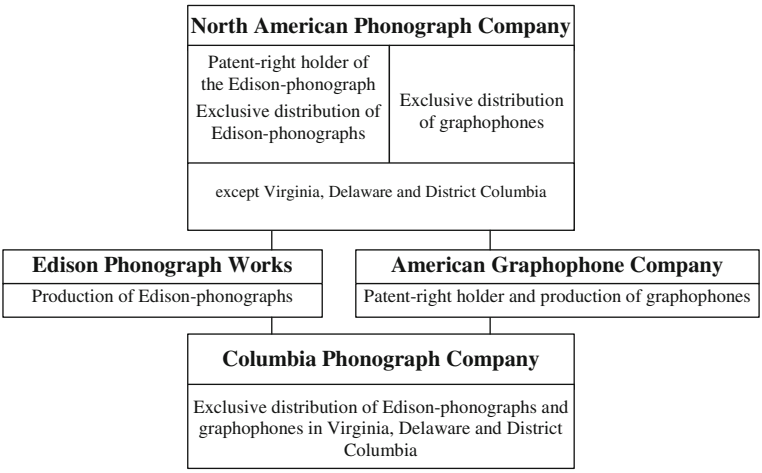

Fig. 2.1 The phonographic industry in the U.S. at the end of 1889

guaranteed the financial losses of the commercial use of the phonograph had it not been for the appearance of entrepreneur Jesse H. Lippincott in 1888.

Having made a fortune in the glass industry, Lippincott had just sold his share of the Rochester Tumbler Company and was looking around for a promising investment opportunity. He noticed the commercial potential of the Graphophone and bought the exclusive distribution rights from the American Graphophone Company for $200,000. Production remained in the hands of Bell and Tainter. Only in Virginia, Delaware, and the District of Columbia was Lippincott not allowed to operate his business, since the distribution rights for these states had earlier been sold to an investor group consisting of shareholders and leading employees of the American Gramophone Co. These investors eventually founded the Columbia Phonograph Company in January 1889.

However, Lippincott had also cast his gaze on Edison's "improved phonograph" and invested an additional $500,000 to purchase the patent rights. Production remained with Edison Phonograph Works. For the purposes of the simultaneous commercial exploitation of the Edison-phonograph and the Graphophone, Lippincott founded the North American Phonograph Company, which sold distribution licenses for both machines to regional partners. Thus, the same company ended up exploiting both the phonograph and its initial commercial opponent, the Graphophone (Fig. 2.1).

Still, the protagonists of the phonographic industry continued to assume that the phonograph and Graphophone were primarily machines that were supposed to replace stenographic recordings used at government agencies and courts of law. North American Phonograph therefore began to sell distribution licenses to investors in individual states and urban areas. In a short period of time, distribution companies were founded in 33 regions, which in 1890 began to cooperate and regularly meet under the umbrella of the National Phonograph Association.

At the first plenary meeting on May 28–29, 1890 in Chicago, stenographers and office employees protested against the introduction of the phonograph as a dictation machine. This is one more piece of evidence that in its early period the phonographic industry was a part of the office machine industry. The design of the machines signified their use as office machines. They had large dimensions, were unwieldy, and the Edison-phonograph, improved with the help of an electric motor, was extremely heavy because of its batteries. The machines were not sold but rented for a rather stiff fee of $40–60 annually. Though the use of the phonograph as a machine for musical entertainment was also discussed, this idea did not assume any significant role at this convention.

Despite his commercial talent, Lippincott underestimated the potential for the phonograph to succeed as entertainment equipment. To him, the phonograph was merely a dictation machine that was to be primarily used in a business environment. In this area, however, the phonograph was anything but a success. Only a few governmental agencies and some larger corporations purchased the new dictation machine. Overall demand was lacking, since a stenographer could much more easily take a dictation than the phonograph. And so it happened that in the fall of 1890, the North American Phonograph went bankrupt. Edison took over Lippincott's shares and from then on took it upon himself to see to the commercial exploitation of the phonograph.

2.2 "Coin-in-the-Slot"-Machines

But just like Lippincott before, so Edison regarded the phonograph merely in terms of office application.

> He could not or would not countenance the potentialities of the phonograph as a medium of entertainment (Gelatt 1955, p. 44).

When some relatively independent distribution companies intensified their efforts to sell the phonograph as a type of music box for bars, restaurants, and beer gardens, Edison argued against this kind of commercial use.

> Those companies who fail to take advantage of every opportunity of pushing the legitimate side of their business, relying only on the profits derived from a 'coin-in-the-slot', will find too late that they have made a fatal mistake. The 'coin-in-the-slot' device is calculated to injure the phonograph in the opinion of those seeing it only in that form, as it has the appearance of being nothing more than a mere toy, and no one would comprehend its value or appreciate its utility as an aid to businessmen and others for dictation purposes when seeing it only in that form.[13]

[13] An excerpt of an article written by Edison, published January 1891 in his newsletter "The Phonograph"; cited in Gelatt (1955, p. 45).

The Pacific Phonograph Company, which owned the West-coast distribution license for the Edison-phonograph and Graphophone, was the pioneer in the business with the jukebox’s precursors. Already in 1889, Louis Glass, the company’s chairman, added a coin-in-the-slot mechanism and four headphone pairs to the “dictation machines”, which were featured as music boxes at the Royal Saloon in San Francisco. “For a nickel per listener per play, patrons could avail themselves of the sounds of a prerecorded ‘entertainment’ cylinder. These ‘nickel-in-the-slot’ machines were so successful that within a year Glass had placed machines in eighteen other locations, some of which began bringing in as much as $1,200 annually” (Garofalo 1997, p. 19).

Other distribution companies of the North American Phonograph joined in the profitable business of the “coin-in-the-slot” machines. Saloons, amusement parks, and retail shops developed a steady demand for the music box. They were also installed in waiting rooms of train and ferry stations, as well as in beer gardens and ice parlors. The music boxes constituted a profitable business for the owners, as the income recouped the initial investment in no time at all.

The Columbia Phonograph was particularly successful with the business of music boxes; they indeed had a special place amongst the distribution companies. Unlike other regional organizations, Columbia Phonograph had not relinquished the exclusive rights for its three regions to the North American Phonograph. However, Columbia’s management began to bet on entertainment once their dictation machine business was bound for bankruptcy. Fred Gaisberg (1943, p. 10), who worked in the phonographic industry from its beginnings when he was still a teenager, reports in his memoirs regarding Columbia’s original intentions:

> Their purpose was to exploit it as a dictating-machine for office use. In this respect, however, it proved a failure. I remember some hundreds being rented to Congress and all being returned as impracticable. The Columbia Company seemed headed for liquidation at this failure, but it was saved by a new field of activity which was created, almost without their knowledge, by showmen at fairs and resorts demanding records of songs and instrumental music.

The unexpected success in the entertainment business persuaded Columbia’s chairmen to concentrate their efforts on this business segment. By 1891, Columbia already owned a 10-page long catalog with recordings of waltzes, polkas, marches, national anthems, opera excerpts, and an adaptation of a part of Verdi’s “Il Trovatore”. These music pieces were recorded by the United States Marine Band, which was conducted by band leader John Philip Sousa. The catalog also contained recordings by artistic whistler John Y. AtLee, who worked as a government employee during the day and whistled popular folk songs at night. In 1893, the Columbia catalog already comprised 32 pages, and in addition to marches, polkas, and waltzes, it now contained recordings of singing in various genres, recitations of excerpts from Shakespeare’s works and other oratories, as well as a number of instructional courses in foreign languages.

Columbia's board of directors,[14] which unlike Edison had completely focused on music production since 1890, decided in 1893 to terminate their cooperation with North American Phonogram and take over the majority of its shares. The Graphophone was supposed to outdo its competitor, the Edison-phonograph. The Graphophone was completely redesigned so that it could play Edison cylinders as well as Graphophone cylinders. The Graphophone Co., however, did not stop with technological changes but began a new round of patent disputes. Small companies that tried to find their way into the business were flooded with patent lawsuits and soon disappeared from the market. The Graphophone Co. did not even hesitate to file a lawsuit against the Edison Empire because of alleged patent rights violations. They argued that Bell and Tainter were the real inventors of the phonograph and that Edison had merely contributed some important improvements to the original machine. In turn, Edison claimed that he could prove that he had invented the phonograph in 1877 and that Bell and Tainter had stolen his invention. Thus, heated patent rights disputes, which lasted until 1896, were fought in courts. American Graphophone seized the opportunity provided by these legal disputes to purchase the stock of Columbia Phonograph and merge the two companies. Graphophone Co. remained responsible for the development and production of the Graphophone, whereas Columbia took care of the distribution of the machines and the recording and sale of music cylinders. In 1895, they relocated headquarters of the new company to New York and opened regional branch offices in Chicago, Philadelphia, St. Louis, Baltimore, and Buffalo.

Edison's answer was to liquidate North American Phonograph, thus causing regional distribution companies to be cut off from the phonograph and later file for bankruptcy. In order to regain control of distribution, Edison founded in 1896 the National Phonograph Company, which became the exclusive U.S. distributor for the Edison-phonograph. 1896 marks the year in which Edison finally recognized the potential of the phonograph as an entertainment instrument. Edison Phonograph Works' main factory began to produce "coin-in-the-slot" machines.

At last, the phonographic industry had evolved into the music-box industry. In Europe and in the United States, more and more music-box producers joined the business.[15] This, in turn, increased the demand for music cylinders, which were not only produced by Edison and Columbia but also by a whole range of locally operating small businesses that could not care for patent rights. Before long, the production and rental of "coin-in-the-slot" machines for the purposes of music production became its own business area, which in later years was only indirectly related to the phonographic industry, even though it once emerged from it.

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[14] Edward D. Easton, R. F. Cromlin, Andrew Devine, and James Clephane.

[15] In 1893, the Polyphon was developed in Germany, which was soon thereafter marketed in the U.S. In 1898, M and J Paillard introduced the Criterion, and in the same year the German Symphonion was introduced to the public. In France, the brothers Pathé founded a company that produced the Pathé-phonograph and the necessary cylinders. Until 1908, the peak moment of the music box industry, ever-new producers entered the market only to disappear as quickly as they appeared.

The empirical evidence shows that the process of innovation was not just a multi-levelled process but also a collective one. It takes more than just one person who is capable of recognizing and enforcing new combinations. We must also consider the field of innovation that supports or prevents innovation as a result of its complex network. This environment is characterized by specific routines of thought that guide the actions of the main protagonists. The routine for the office environment was to use stenographers for the recording of speech. They would have been replaced with the phonograph only after the latter’s use would have solved the problem of recording speech in a more satisfying and cost-saving manner. This, however, was not the case. The phonograph’s playback quality was simply miserable, while its cost was so high that it was only possible to lease, not buy, the machine. Under these circumstances it was not even feasible to consider mass production in order to fully exploit the “economics of scale”.

The development of the phonographic industry as a segment of the office machine industry was a dead end, despite Edison’s talent for invention and Lippincott’s talent for business. Their way of thinking was so fixated on the machine’s office use that they never seriously saw alternative possibilities. Edison and Lippincott even considered it damaging to their product’s image after some regional distribution companies began to redesign the phonograph into a music box. This innovation existed outside of their realm of thought and was thus not just ignored but actively fought, despite its obvious commercial success.

That Columbia Phonograph was the deciding innovative force responsible for pushing the industry in the direction of music production was rather ironic. This company owned the exclusive distribution rights for the Edison-phonograph and Graphophone in Delaware, Virginia, and the District of Columbia mostly by happenstance. Because they had beaten Lippincott to the punch for those rights, Columbia never directly belonged to his corporation. But it is precisely this marginal and exceptional position during the phonographic industry’s infancy that enabled this act of innovation. Since Columbia Phonograph was not bound by the directives of North American Phonograph, they were able to pursue without interference the “coin-in-the-slot” machines business once the phonograph’s lack of success as a dictation machine became obvious. In contrast, the distribution companies belonging to Lippincott’s corporation were not allowed to install music boxes and produce music cylinders; hence, by 1890, when there was still no breakthrough for the phonograph as a dictation machine, these companies lacked a second leg to stand on, and North American Phonograph had to file for bankruptcy.

2.3 Records and Gramophones

The future of the phonographic industry, however, did not lie in the music cylinder and music box but in the development of a phonogram that could be mass-produced. This phonogram had existed since 1888 when German immigrant Emile Berliner introduced the record to the public at the Franklin Institute in

Philadelphia. It is telling that Berliner did not come out of the already established phonographic industry; instead, he was an outsider who experimented with the phonograph in his spare time. Berliner was a textile merchant with a knack for chemical and physical experiments. For a while he was even an employee of the Bell Telephone Co. after he had invented a transmitter. But Berliner started concerning himself with the recording and replaying of sound after a 2 years stint in Germany where he worked in his brother's telephone factory in Hanover. With the money he earned in Germany, he established a small laboratory in Washington, DC and began to study the Phonautograph invented by Léon Scott in 1857.[16] Berliner was particularly interested in the technique Scott developed to record sounds with a needle on a medium turning horizontally. For 4 years Berliner experimented in his house in Washington without any exposure to the development of the phonograph. On September 26, 1887, Berliner applied for a patent in Washington for his sound recording instrument under the brand name of "Gramophone".[17]

However, the Gramophone was still far removed from being ready for practical use. The engraving process was complicated and unreliable. During this period Berliner profited from his knowledge of chemistry. He began to experiment with recording media into which one could etch rather than engrave sound grooves. In March 1888, Berliner was able to undertake his first recordings of music with local musicians from Washington. The results were very satisfying, and, importantly, the reproduction of the recordings did not present a problem. The chrome-acid bath allowed the reproduction of a recording within 15–20 min.

Yet, Berliner failed to solicit a positive response after he had publicly presented his Gramophone in Philadelphia and explicitly alerted his potential investors to the mass production of Gramophones. No investor was interested in producing his invention despite the clearly visible advantages of this new technology. Berliner, however, did not give up. He improved the method of reproduction by pressing a negative of a metal plate that he had first etched as a positive. Hard rubber turned out to be an ideal transmission medium. In this manner, large numbers of hard-rubber plates could be pressed. The advantage becomes especially obvious when considering that the cylinder for the phonograph could not be reproduced. Each cylinder had to be produced as an original. When recording music, it was thus necessary to use ten recording devices simultaneously in order to produce ten copies of one recording session. In order to produce 100 music recordings of one piece, a musician had to perform at his best ten times in a row in one day. With this recording technology, the mass production of phonograms was impossible. In contrast, it was possible to press numerous negatives of a record positive, which then could be used as matrices for the mass production of records at different production locations.

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[16] Léon Scott's real name was Edouard Léon Scott de Martinsville, and he was a French hobby-scientist who experimented with sound recordings long before Edison.

[17] The registered patent number is 372.786.

But the mass production of phonograms was not the intention of the pioneering companies of the phonographic industry. In contrast, Berliner's aim had always been to make music recordings and copy them. Since he did not find success in the U.S., he returned to Germany in 1889 where he located the toy factory Kämmerer and Reinhardt in Waltershausen to be a producer for his Gramophone. It became a runaway hit throughout all of Europe. After 3 years, however, the market appeared to be satiated, and Kämmerer and Reinhardt turned to other ventures.

In the meantime, Berliner had returned to the U.S. where, inspired by his European success, he tried once again to exploit his invention commercially. With his savings and additional money given by friends and relatives, he established the United States Gramophone Company in Washington, DC in 1893. However, his initial capital was sufficient to serve only the local Washington, DC market. Since Berliner saw the commercial potential of the Gramophone in the recording and mass-production of music, in 1894 he hired the 20-year old pianist Fred Gaisberg as a talent scout for music recordings (Gaisberg had previously worked as a piano accompanier for Columbia Phonograph). Soon he provided United States Gramophone with local musicians who recorded memorable music pieces. In most cases, the musicians were so unknown that they were not even mentioned on the records. The goal was to offer as many recordings of music pieces on record as possible, not to acquire recognizable recording artists.

Berliner tried once again to find capable financiers to market the Gramophone throughout the U.S. This time he approached the Bell Telephone Company in Boston where Berliner was ridiculed for his "toy".

> Has poor Berliner come down to this? How sad! Now if he would only give us a talking doll perhaps we could raise some money for him (cited in Gelatt 1955, p. 67).

Bell's responsible representatives jeered in response to his request for financial support In the fall of 1895, Berliner nevertheless managed to find a small group of investors that provided him with $25,000. Not a single one was from the phonographic industry. Instead, two investors were major merchants of steel for construction, two more were developers, and one was a small factory owner. With money from this illustrious investors' group, the Berliner Gramophone Company was founded in Philadelphia on October 8, 1895; and, as a license holder of the United States Gramophone Company, Berliner Gramophone began to mass-produce Gramophones and records. After further experiments, it was discovered that the phonogram could be improved through the use of shellac as the basic material, which positively affected its reproducibility.[18]

The Gramophone's initial main weakness was the need to operate a crank-handle. Even the best-trained user was not capable of maintaining an even rotational speed. So that the Gramophone could compete with the phonogram, it had to be furnished with an independent motor. In 1896, Eldridge R. Johnson, a 29-year

[18] Shellac is a mixture of tree resin and wax secretions especially of a scale insect, which exists only in certain parts of India.

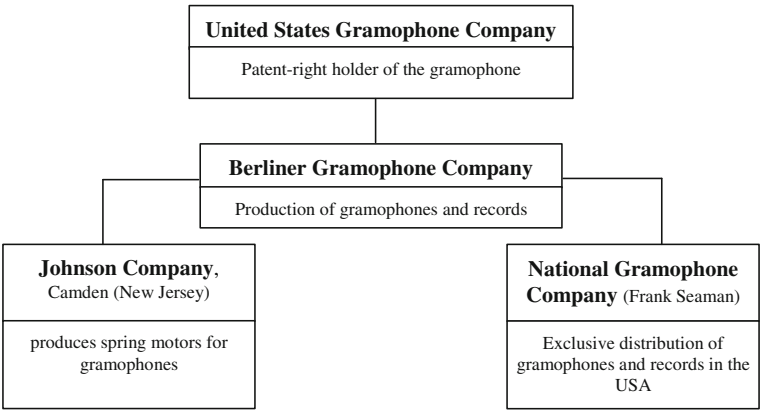

Fig. 2.2 The gramophone-conglomerate in 1896

old owner of a small factory in New Jersey that produced knitting machines, was approached to develop a cheap motor for the gramophone. In the summer of 1896, Johnson presented a spring motor to representatives of the Berliner Gramophone Company, which could be wound up like a clock without causing any additional distracting noises. The most important aspect, however, was that this motor could be produced cheaply. Hence, Johnson was instructed to produce 200 motors. At the same time, Frank Seaman, an experienced New York advertising expert, was hired to take over the exclusive distribution for Berliner Gramophone for the next 15 years. To this end, Seaman founded the National Gramophone Company in 1896, which immediately launched an advertising campaign for the Gramophone.

By 1896, three (more or less) autonomous partners were active in the Gramo phone business. United States Gramophone functioned as a caretaker of the original patent rights, and Berliner Gramophone produced the records and machines that received their motors from the Johnson Motor Company in Camden, NJ. Seaman's National Gramophone Company took care of the U.S.-wide distribution of "hard and soft ware" (see Fig. 2.2).

Technical improvements and Seaman's intense advertising activities finally brought about the hoped-for success for the Gramophone. In 1898, National Gramophone announced it had reached the $1 million mark in revenue. Johnson was unable to keep up with the production of motors and, therefore, invested in the construction of two new fabrication buildings. The sales success also led some prominent musicians to become interested in the new machine. The existing repertoire could therefore be expanded by additional musical highlights, and in 1898 John Philip Sousa and his band began to record exclusively for the Berliner group.

A year earlier, William Barry Owen, a former colleague of Seaman, established a trade organization in London in the name of Emile Berliner with the help of a $5,000 capital investment made by landowner Trevor Williams; the goal of this

organization was to develop the European market for the Gramophone.[19] Eldridge Johnson's factory provided the machines, and Berliner Gramophone provided the records. In the summer of 1897, Fred Gaisberg and Josef Sanders were sent to London as representatives of the Berliner corporation. Gaisberg was instructed to establish a recording studio in London and to collect music recordings throughout Europe. Sanders was sent to Hanover where he successfully negotiated the redesign of the telephone factory "Berliner" into a record plant, which resulted in the founding of the Deutsche Grammophon Gesellschaft. Owen took care of generating demand through aggressive advertising, which resulted in such a fantastic Christmas season that both Gramophones and records were sold out by the end of the year. Subsequently, they decided to create an independent record production organization in Europe, and to this end "the Gramophone Company Ltd.", with Trevor Williams as president and William B. Owens as chairman, was founded in 1899. This company immediately purchased the British and European patent rights for the Gramophone and the record and financially invested in the Deutsche Grammophon Gesellschaft. The same year also saw the creation of more branch companies throughout Europe. The Deutsche Grammophon, with its headquarters in Berlin and production site in Hanover, founded subsidiaries in the Austrian–Hungarian Empire and Russia. In France, the Compagnie Française du Gramophone was set up, with a subsidiary in Spain.

Due to the unexpected success of the Gramophone, the competition began to grow restless. At first, the strategists from Edison and Columbia tried to complain about the recording quality's lack of authenticity, but soon they mobilized more forceful arguments. In 1898, the American Graphophone Company accused Emile Berliner of intellectual theft of the Bell-Tainter patent. They sued, however, Frank Seaman's National Gramophone Company rather than the United States Gramophone Company. Despite the untenable accusations, the claimant succeeded in getting the New York judge to issue a provisional court order based on the National Gramophone Company's alleged violation of patent rights. Seaman fought this ruling and was victorious in the spring of 1899.

Seaman took the attacks on his company as an opportunity to demand a greater part of the profits. He believed that he contributed more than anyone else to the rise of Gramophone and requested that his share of the profits reflect this—a demand that the others denied him. As long as the patent rights remained with Berliner, Seaman's hands were tied. Consequently, Seaman began to plan a coup in the spring of 1899. First, he transformed the "National Gramophone Company New York" into the "National Gramophone Company Yonkers". The latter founded a subsidiary, the Universal Talking Machine Company, which began to build a production site for Gramophones in New York. The Berliner company ignored Seaman's activities and was surprised by the introduction of the so-called Zonophone in the fall of 1899. Essentially, the Zonophone was nothing but a slightly modified copy of the Gramophone. But Seaman achieved his real success

[19] For more about the history of the Gramophone, see Martland (1997).

in court. On May 5, 1900 he accepted the settlement with American Graphophone Company and admitted that the Gramophone had violated patent rights. Two weeks later it was announced that the National Gramophone Company, now known as Universal Talking Machine Company, entered into an alliance with American Graphophone and Columbia Phonograph. The alliance agreed that the Zonophone would be produced and distributed by the two former competitors. A court order furthermore ensured that no one but the contract's parties would be allowed to call a sound recording machine a Gramophone. Seaman's chess move had the paradoxical consequence of Emile Berliner's companies not being allowed to market the Gramophone in the United Stated under its original brand name.

After the Berliner representatives recovered from their first shock, they filed a lawsuit against Seaman and his company, charging patent violation. But as long as the provisional court order made it impossible to use the brand name "Gramophone", these machines could not be marketed under this name. In addition, the Berliner company had lost its valuable distribution network overnight.

This, in turn, made Eldridge Johnson nervous. He had invested a lot of money in the creation of a second production building—an investment that was now in jeopardy. Being in a desperate situation, Johnson had recourse to a technical improvement that he himself had advanced in secret. Instead of hard rubber plates Johnson used wax plates, which could be pressed in mass-production as well. With this product innovation secured, in 1900 Johnson founded the Consolidated Talking Machine Company. In an advertising offensive in the fall of 1900, he marketed the new Gramophone records as qualitatively better phonograms. Johnson's company simultaneously offered Gramophones for the low price of $3. This low price strategy succeeded, and by the end of 1900 Johnson managed to avoid bankruptcy.

Seaman, of course, responded to the new competitor, accusing Johnson of being nothing but a puppet of the Berliner company, and sued for patent violation. But instead of being issued a provisional court order, which would have stopped production, Johnson was merely forbidden to use the brand "Gramophone" for his machines. This, however, left Johnson rather cold. In any case, he did not want to run afoul with Berliner and did not intend to produce Gramophones. Consequently, Johnson called his phonographs "Victor Talking Machines" and the replay media "Victor Records".

In 1901, Johnson and Berliner emerged as the undisputed winners of the lawsuits, and the federal court terminated the provisional court order against the Berliner companies. From now on, they once again were allowed to call their machines "Gramophones".

The fortunate ending of the patent disputes inspired Johnson and Berliner to work more closely. Berliner owned the patent rights for the production of the Gramophone, but he had lost his distribution network. Johnson produced Victor Talking Machines since 1901, as well as the necessary wax records, and he commanded his own distribution network. Berliner and Johnson agreed, therefore, to found a new company in 1901 that would incorporate the patent rights of the Berliner group and Johnson's production sites and distribution network. Thus, on October 3, 1901, the Victor Talking Machine Company was founded.

The Graphophone-Columbia group felt that this new company threatened its leading market position. Furthermore, it realized that the future belonged to the record, not to the cylinder. It was thus necessary to join in the production of records. They managed to do this, because Johnson never patented the invention of his wax records. Instead, one Joseph W. Jones had already applied for a patent for the method of recording sound with the help of wax records in 1897, after he had worked for one summer in the Washington laboratory of Emile Berliner. The patent was only granted 4 years after his application, on December 10, 1901. Graphophone-Columbia immediately reacted and bought the patent off of the 25-year old Jones for $25,000. This enabled Graphophone and Columbia to begin the production of records and Gramophones. In January 1902, the Graphophone factory in Bridgeport shipped the first machines, called Columbia Disc Graphophone, together with the matching records.

Further legal patent disputes appeared to be inevitable. With its production of wax records, Victor Talking Machine violated the patent rights of Graphophone-Columbia, which in turn violated the patent for the production of Gramophones. But in this case it did not come to a court dispute, since both parties managed to agree on the mutual use of their respective patents.

The record had thus established itself as the standard of music storage, even though Edison continued to bank on the cylinder. He improved the replay quality, expanded the storage time to 4 min, and eventually even managed to mass-produce music cylinders. But at this stage Edison was already trailing behind the record-producing companies. Though sales numbers for the Edison-cylinder increased throughout the first boom period before World War I, they did not match the sales increases of records. When the introduction of the Amberol cylinder in 1912 failed to generate sufficient success, Edison finally relented and began producing the Diamond-record, and a matching player. His entrance into the record business occurred 1 year too late, however, and Edison's Phonograph Company did not play any important role in the U.S. market.

With the agreement between the Victor Talking Machine and the Graphophone-Columbia-group regarding the mutual use of the record patent rights, we can consider 1902 as the birth of the phonographic industry as part of the music industry. From this moment on, emphasis was not placed on recording and replaying machines but on phonograms that were first and foremost media for the storage of music. Thus, competition shifted from hardware to software or, better put, to the musical content of phonograms.

2.4 Herr Doctor Brahms Plays the Piano

During the pioneer phase of the phonographic industry, the constant improvement of the recording and replaying machines remained in the foreground. The phonograms, whether in cylinder or record form, were merely a provisional concern. This was reflected in the available repertoire recorded during the phonogram's

early phase. Initially, what was of true importance was to simply convince the people of the wonders of recorded and stored speech. Hence, Edison's representatives travelled the world in 1878 and 1879 to demonstrate at phonograph shows what advertising posters announced as the "wonderful speaking-machines". Visitors of these shows were allowed to speak some words into the funnel, which would then be replayed by the machine. Even statesmen such as the British Prime Minister Gladstone or the German Chancellor Bismarck, as well as crowned leaders such as the German Emperor Wilhelm II and the Austrian Emperor Franz Joseph, donated a few words in the name of technological progress.[20]

These early recordings had mere documentary and historical value. This was probably also the reason for Edison's assistant, Theo Wangemann, to visit the Viennese composer Johannes Brahms in December 1889 in order to record his piano playing on wax cylinder. The quality of the recording of the "first Hungarian Dance", which Brahms personally interpreted on the piano, was so miserable that one might think that the artist played behind a closed door. Mr. Wangemann's announcement, "Herr Doctor Brahms plays the piano", is the clearest part of the entire recording.[21]

The sciences, too, became aware of the documentary function of the phonograph. Harvard professor Jesse Fewkes was the first ethnologist of music who in 1890 recorded the singing of Passamaquoddy Indians in Maine. Many ethnologists and anthropologists followed his lead, collecting folk songs on wax cylinders, just like the composer and researcher of folk songs Béla Bartók, who since 1906, with the help of the Edison-phonograph, conserved the folk songs of his homeland Hungary and of neighboring people on wax cylinders.

All of these recording activities had no commercial interests in mind and thus cannot be counted as music industry activities. The delivery of music boxes with pre-recorded music cylinders was, however, the earliest field of application in which the music repertoire played a role. Companies were not interested in producing new and creative music; instead, they recorded particularly popular songs and instrumental standards. As we have already seen, Columbia Phonograph was especially active in the recording of such music. The United States Marine Band, conducted by John Philip Sousa, recorded popular Johann Strauß waltzes and Irish folk songs such as "Little Annie Rooney" or "Down Went McGinty". By 1892, Columbia already owned more than 100 recordings of the Marine Band, which were sold for $2 per cylinder (Garofalo 1997, p. 20). The government employee and amateur whistler John AtLee was also well liked; he whistled such popular songs as "The Mockingbird" and "Home Sweet Home" onto wax cylinders. In addition to a few more musicians known by name, however, there are many artists

[20] The earliest sound recording still in existence is of the British General-Governor of Canada, Lord Stanley, whose opening words, spoken at the industry fair in Toronto of September 1888, were recorded.

[21] The original wax cylinder is now completely unusable, but a copy exists that was made in 1930 and recently digitally reconstructed in the Phonogram Archive of the Austrian Academy of Science.

during the early period of music recordings whose names do not appear either in the Columbia catalog or on the music cylinders. It was simply not necessary to name musicians who, at the time, did not financially share in the success of phonogram sales or received royalties based on copyright laws.

Royalties would not have made any sense to begin with, since music cylinders could be produced only in limited numbers and no collecting societies existed that could have controlled the number of public performances. But even when Emile Berliner introduced mass-produced records, they did not have labels identifying the recording artists. In 1900, the phonogram and the music repertoire it contained were not at the center of the companies' commercial interests. The phonographic industry simply published everything that was demanded by local music-box operators. Especially in demand were so-called "coon songs", which were rather yelled than sung, because it aided the then existing recording technology.

The competition shifted towards the level of the music repertoire only once the standardized technological design of the phonogram and the industry standard "record" prevailed as recording media. At first, however, artists, made popular through phonograms, were hired away by competing companies. Thus, Victor managed to obtain Fred Gaisberg, the Columbia stars AtLee, George J. Gasken, Russell Hunting, and the U.S. Marine Band for recordings. Columbia had to let go of their successful artists simply because exclusive recording contracts did not yet exist (Gaisberg 1943).

Victor Talking Machine and its European subsidiary, the Gramophone Co., were the first to comprehend the significance of the music repertoire. In 1901, they sent the brothers Fred and Will Gaisberg on a trip through European cities (London, Paris, Milan, Zurich, The Hague, Vienna, Budapest, Brussels, Lwow, Breslau, Königsberg, St. Petersburg, Stockholm, and Helsinki) in order to record in hotel rooms singers and musicians, selected by local agents, who enjoyed local popularity. After the recording, the produced matrices were immediately sent to the record plant in Hanover, where records were produced for each individual local market. After the Gaisbergs had exhausted the European centers, they turned their attention to more exotic parts of the world. They travelled to larger Russian cities and recorded prayer songs of Jewish cantors in Vilnius, Tatar-songs in Kasan, or Georgian choruses in Tiflis. In the fall of 1901, they travelled India, Burma, Thailand, China, and Japan to conquer these markets for the Gramophone Company as well. The recordings they made had no documentary character and were instead done for purely commercial reasons. The idea was to provide each geographic market with locally popular music. The Gaisberg brothers were so successful in "conquering the world market" that before long the capacities of the record plant in Hanover were insufficient, and branch plants in England, France, Spain, Austria–Hungary, Russia, and even India had to be built.