Innovation systems in motion: an early music case[1]

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Abstract

Purpose: This study provides an in-depth understanding of the innovation system and the learning processes involved in a very specific cultural field: the production of early music.

Methodology: A single case study of the generic value chain in the music production industry describes and analyses the process and the actors involved in editing a new early music collection resulting from the collaboration between a record company and a public research organization.

Findings: There is a need for new knowledge in the various stages of performance and publication of a new recording. The early music sector is a knowledge-intensive, science-driven sector that can be characterized as a system because the interactions among actors substantially influence final products.

Research limitations/implications: The single case study represents a specific sector within the music industry. However, its conclusions can be applied to other fields in the cultural heritage sector.

Originality/value: The literature on innovation in the cultural field primarily focuses on the relationship between art and information and communication technology (ICT). This paper is novel in analysing a case where scientific knowledge is key to new product development, and suggesting that we need to take account of the interactions among cultural heritage entities, universities and other knowledge production organizations. It concludes that these organizations should be involved institutionally in other aspects of the innovation process.

Keywords: innovation system, industry-science interactions, cultural industries, musicology, early music.

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1 Background and aim

Previous work on knowledge transfer from the humanities and social sciences (Castro-Martínez *et al.*, 2008a, 2008b) has studied the relationships between humanities researchers, enterprises and other cultural entities, both public and private. It has been found that the innovation process involved very close interactions and tightly knit networks of actors. These studies led to in depth studies of innovation in certain services sectors such as culture and cultural heritage, including early music.

The growing importance of services in developed economies justifies the interest in analysing this sector from various perspectives, including innovation (Miles, 1994; Hauknes, 1996). The application to services of conceptual developments on innovation generated originally for industry has been analysed, alongside the interrelationships among the innovations produced in both sectors (Amable and Palombarini, 1998; Miles, 2000, Ettlie and Rosenthal, 2011) in different countries and areas (Vence and Trigo, 2010).

In services, innovation studies initially focused on sectors with high economic relevance, such as banking (Consoli, 2005), or telecommunications, computer services, R&D and consulting, the so-called knowledge-intensive business services or KIBS (Miles *et al.*, 1995). The study of the innovation processes in other service sectors is more recent, for example, tourism (Jacob Escauriaza *et al.*, 2001; Sundbo *et al.*, 2007) and health (Djellal and Gallouj, 2005; Ramlogan and Consoli, 2007; Consoli and Mina, 2009). Innovations in the health sector arise from the complex interplay between knowledge bases and highly distributed behaviours (e.g. new medical technologies and clinical services) (Consoli and Mina, 2009; p.315).

Since the beginning of the 21st century several studies have examined the process of innovation in the cultural sector from the perspectives of economics (Cunningham, 2002; Potts, 2007; Chapain and Comunian, 2010), innovation policy (Asheim *et al.*, 2007) and management (Wilson and Stokes, 2005; Sundbo, 2009; Bakshi and Throsby, 2010). There is not an absolute consensus on delimiting the sector and the literature refers to groups such as the cultural industries (Hirsch, 2000; Eltham, 2009), the creative industries (Pratt, 2005; Asheim and Hansen, 2009; Potts *et al.*, 2008) and also an "experience sector" which includes companies that "produce experiences" (festivals, broadcasts, audio-visual entertainment, gymnasiums, sports clubs, design and architecture, museums, etc.) (Sundbo, 2009; p. 432). These terms encompass both private companies and public entities.

The literature tends to reinforce the idea that the concept of innovation in public policy is limited to scientific and technological invention and its results (products and technological processes). It generally overlooks other types of knowledge emerging from the arts and the humanities and social sciences, which are developed by the creative industries and give rise to cultural products, services and processes, and social innovations which, in certain regions or countries, are of equal importance to scientific and technological innovation. Analysis of the innovation processes in the creative industry sector from a political perspective (design of regional innovation policy) led Asheim and Hansen (2009; p. 425) to identify a new type of knowledge base, which they describe as *symbolic*, where innovation emerges from the different recombination of existing knowledge, creating meaning, desire, aesthetic qualities, affect, intangibles,

symbols and images. They compare this with the categories of basic or *analytical* knowledge in economic sectors, which is based on the creation of new knowledge, and *synthetic* knowledge which is based on the application or new combinations of engineering and other knowledge. According to Asheim and Hansen (2009; p. 430), the instruments used to promote innovation in companies varies substantially, depending on the type of their dominant knowledge base, and because they have different ways of creating and exploiting knowledge and incorporating external knowledge. Their interactions give preference to different types of actors: research organizations in the case of sectors with an analytical knowledge base; customers and suppliers of equipment and materials in the case of synthetic knowledge based industries; artists and other agents in the cultural value chain in the case of sectors with a symbolic knowledge base.

The commonly accepted definitions of product innovation (OECD, 2005; p. 58) focus on functional or user changes and, thus, do not include changes in the meanings, aesthetics or content produced in the area of culture. This has several consequences, the most important being that innovation statistics do not provide a measure of these changes in terms of new “products” from the cultural sector and the instruments employed by innovation policy are not appropriate for these sectors (HKU, 2010).

This has led to new proposals from scholars in the field. Paul Stoneman (2007, 2008) suggested the term, "soft innovations", which he defines as innovations or changes whose main impact is on sensorial and aesthetic perception, not on functional characteristics (Stoneman, 2007; p. 2). Miles and Green (2008) introduced the term "hidden innovation", to refer to those types of innovation and innovation processes that are excluded from established innovation studies, policies and indicators. Based on a research project developed by the Manchester Institute of Innovation Research and the National Endowment for Science, Technology and the Arts (UK), they developed a new framework for understanding innovation in the creative industries, taking account of both technological and business processes. They analysed the four prominent dimensions of innovation in creative industries (cultural product, cultural concept, user interface and delivery). This analysis identified 15 "sites" of innovation related to the main business processes (creative firm, production and pre-production, product, communications and user experience) where innovation may involve technological development, organizational change and new creative content and/or aesthetic design. They define four types of innovation which are excluded from current measurement systems: a) those that are the same or similar to activities measured by traditional indicators, but are excluded from measurement (such as market research); b) innovations in business organisation and models; c) innovations created by the novel combination of existing processes and technologies (e.g. the distribution of content via the Internet); and d) small scale, local level innovations developed to resolve specific problems, which are neither registered nor officially recognized. Jaaniste (2009) proposes the addition of "innovation in cultural processes and products" to complement conventional technological innovations, considering the former as new knowledge generated in the area of humanities and social sciences and the latter as knowledge emerging from experimental science, engineering and medicine. He makes a distinction between the *expressive-reflexive* knowledge related to innovation in cultural processes and products and the *technical-rational* knowledge related to science, engineering and medical innovation. Bakshi and Throsby (2010; p. 13), based on an exhaustive study of the case of two British non-profit cultural entities (the Tate Gallery and the National Theatre), propose four categories of innovation for cultural entities arising from changes

to various contextual aspects (technology, patterns of demand, sources of income not derived from work, and concepts of value creation):

Innovation in the development of an art form, such as the production of a new work or one that has never been performed, and new approaches to the performance or presentation of works already performed/presented.

Innovation in value creation: cultural entities create value in many ways (aesthetic quality, meaning, spiritual resonance, social value, educational value), not just for the direct consumers of their products and services, but also for society in general and for other sectors.

Innovation in reaching an audience, in order to increase reach (attract a more traditional audience); intensify (strengthen commitment) or diversify (attract new consumer groups).

Innovation in business management and governance: new business models (demand, supply, funding).

Bakshi and Throsby (2010; p. 18) agree with Miles and Green (2008; p. 14), pointing out that those innovations related to a cultural concept and development of an art form do not fit with the Oslo manual specifications. The differences they highlight are between the content or value of the new cultural products, but not between their functionalities. Likewise, innovation related to increasing audience does not coincide with the definition of marketing innovation proposed in the Oslo manual.

Also, since this sector is strongly linked to creativity, creative industries are considered to play an additional role, contributing to economic and social evolution as well as forces for economic, social and cultural change (Potts, 2007; p. 1; Jaaniste, 2009; p. 222). According to Luke Jaaniste, the creative industry sector contributes to a culture of creativity and innovation, offers training in skills aimed at innovation, promotes the introduction of technological products through marketing, design and content, and contributes to scientific research in the creative sector, including collaborations with researchers in the fields of experimental sciences and technology among others.

We need an in-depth analysis of the various sectors subsumed within the broad term cultural, in terms of their innovation process, which varies considerably, and the results of creative work (original pieces, experience, and content) which are very diverse across sub-sectors (Jeffcutt and Pratt, 2002). In the editorial to a Special Issue of *Creativity and Innovation Management* on the management of creative industries, Jeffcutt and Pratt (2002; p. 227) suggest the need to conduct a more profound study of organization and management in the sector, but point out that this would require consideration of several dimensions because there is not "one" creative industry, but "many". The profiles of employees and their connections to other agents in the production process are different; there are very recently created companies and micro companies coexisting with large multinationals; production cycles are often short and work is carried out in projects, in a highly competitive environment and in the context of an uncertain future. The creative industry is a specialized sector based on highly specialized and individual skills, which makes it necessary to differentiate between the management of creativity and the management of innovation (Wilson and Stokes, 2005; p. 367).

Most studies of innovation in creative industries focus on the role of new ICTs, leading to new products (e.g. computer games) and new production processes, user interfaces, strategies, organization and management practices (Miles and Green, 2008; p. 13; Bakshi and Throsby, 2010; p. 20; Hotho and Champion, 2011). There are also a strand

of studies on spatial concentration of creative industries (Florida, 2003; Cunningham *et al.*, 2004; Davis, 2009; van der Groep, 2010; Le Blanc, 2010) and work that connects creative industries and innovation policy (Potts, 2009; Jaaniste, 2009; p. 218).

In the specific context of the music industry, several articles study different aspects of the innovation process and management, as well as the effect of context on the commercial success of innovative processes and products, especially those related to the intellectual property rights framework. Gander and Rieple (2002) study inter-organization relations in the international recorded popular music industry (major and independent). Power and Hallencreutz (2002) analyse two dynamic innovation and popular music production centres (Stockholm, Sweden, and Kingston, Jamaica) and conclude that unparalleled returns on commercially successful creativity depend on local and global inter- and intra-firm links and on the effectiveness of intellectual property rights regimes. Lorenzen and Frederiksen (2005) analyse the music industry to explain the organization and management of market-based projects in order to facilitate product innovation through experimentation. Jöckel *et al.* (2007) analyse the potential for commercial music download platforms and their relation to consumer demand; Hjalager (2009) study the Roskilde Festival as an emerging cultural innovation system, and analyse the dense and multifaceted relationships between the festival organizers and the other actors, concluding that the concept of innovation systems can be used to explain the complex mechanisms that determine the conditions, extent and outcomes of the innovative behaviour of all the participants. Finally, a Special Issue of *Management Decision* (McLean *et al*., 2010) is devoted to exploring the new business model within the recording and publishing industries, and the intellectual property rights aspects of transactions and the new interface between product and users.

To our knowledge, there are no studies of the interactions between researchers and key actors (among others) in the classical music industry value chain, including the subsector of early music where musicologists are highly relevant because they need to transcribe and contextualize ancient works for their performance by contemporary musicians, with the extreme rigour required of such an enterprise.

Following Hjalager (2009; p. 277), the existence of multiple actors interacting at different stages in the music value chain, suggests that the innovation system approach is appropriate to understand the process involved in the production of records and the exchange of new knowledge that takes place in this process. Among the different approaches in the Innovation Systems literature (Lundvall, 2007), Malerba's (2002) sectoral and production innovation system best fits the case presented here. Malerba defines a sectoral system of innovation as "a set of new and established products for specific uses and the set of agents carrying out market and non-market interactions for the creation, production and sale of those products. A sectoral system has a knowledge base, technologies, inputs and an existing, emergent and potential demand.… Agents are characterized by specific learning processes, competencies, beliefs, objectives, organizational structures and behaviors. They interact through processes of communication, exchange, co-operation, competition and command, and their interactions are shaped by institutions (rules and regulations)." (Malerba, 2002; p. 250).

In this context, the present study should improve our knowledge of the innovation process in the cultural environment through the analysis of a very specific area: the production of early or "historical" music [1]. Specifically, we use the conceptual framework of innovation systems (Lundvall, 1992) to explore the interactions, learning process and role of non-business agents in the processes of innovation. Based on a

generic description of the music production industry value chain, we describe and analyse the processes and the actors involved in the emergence of a new early music collection and the role of the scientific organization involved.

2 Methodology

In order to analyse the emergence of innovation in the sub-sector of early music production and the relationships among all those involved in the process, we use a case study methodology, which allows for sufficient detail to uncover the roles of the different actors and, especially, public research organization. We believe that the findings from this study may be useful for understanding other areas of culture, where the knowledge gathered by researchers may also be highly relevant. Besides, this case study is also valuable to illustrate the need of interacting agents to actually build an Innovation System. This provides a new brick to consolidate such concept and offers new insights regarding the key role of interactions as a way to guide the Innovation System consolidation in other areas and as a whole.

This case study also relies on the co-author specific knowledge in the sector to accurately depict the agents involved in the sector, the sort of relationships and how they interact since an in-depth analysis is only achieved with the involvement of stakeholders involved in the case. Furthermore, this methodology provides the scientific community a ground for an effective consolidation of the Innovation System concept (Flyvbjerg, 2006): it offers practical knowledge, contributes to the scientific development of the Innovation System concept and helps testing hypotheses as relevant characteristics of a sound methodology.

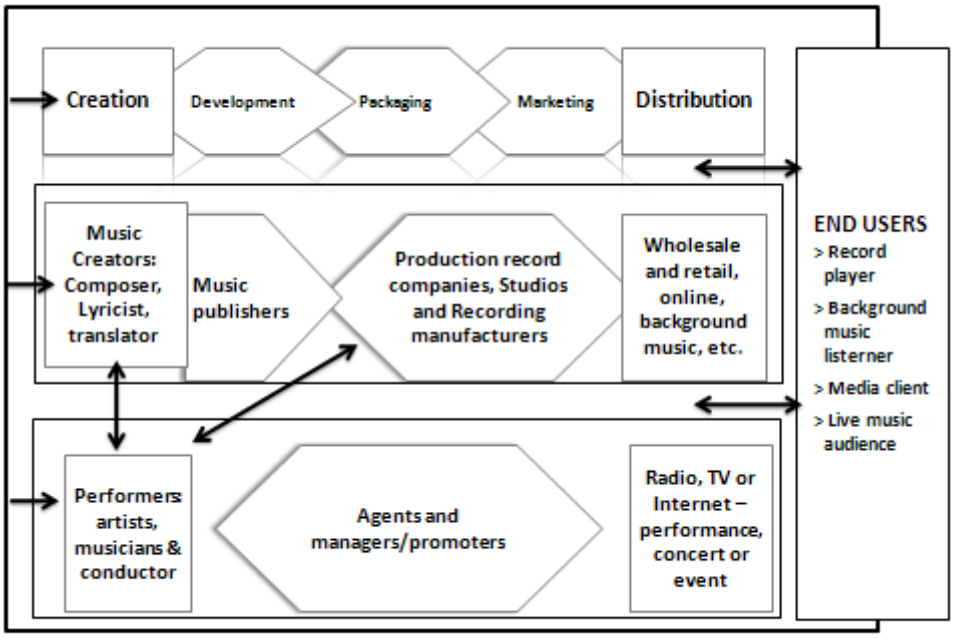
To organize our analysis, we follow the model of the music industry value chain described in Wilson and Stokes (2005; p. 368) (see Figure 1). Figure 1 shows that the production of new music records begins with the creation of new content and is followed by editing (protection), production, marketing and distribution of this content. This general scheme can be broken down into the two processes of production of the record and performance of the works, whose paths sometimes cross, but which involve different actors. The first process is dedicated to the production and sale of physical recordings (music CDs); it includes the creators of content (composers and lyricists) whose works are edited by music editors in order, among other objectives, to protect intellectual property rights. The songs or pieces may be performed by their creator(s) or by some other performer(s); the latter option in the case of classical and early music. During this process, the record company plays the central role, as the entity that identifies the opportunity to start a new project, depending on its particular editorial profile or on the market, makes contact with the performers, produces the CDs (which includes planning recording sessions, guiding the performers, supervising the recording and mastering process, editing the libretto or accompanying booklet and controlling manufacture, etc.), and delivers the end product to the distribution companies (dealers), which may be either national or international (in line with agreements for certain countries or under a worldwide distribution contract). The culmination of this process is that the CDs become available to users through general or specialized shops, although ICTs have led to important changes in this respect (e.g. *online* sales, pay-per-download, streaming music services, etc.). The second process is the live performance of the works by artists, at festivals, concert halls or opera houses, a process that involves the performers (conception and selection of the repertoire), intermediaries (artists' agents)

and the concert organizers/promoters. In this process it is the festival directors or the promoters of concert halls who play the central role, since they select the performers and negotiate the programme according to the artistic policy or the focus of the event.

Alongside the main actors in both processes, there are others, such as the press and music periodicals (with critics who evaluate aspects of music performances or recordings), and music programmes broadcast on radio and TV, which contribute considerably to the promotion of works and artists.

Both processes have different dynamics but are interdependent because both contribute to distribution to the public of the works performed or recorded by the artists. The various participants in both processes interact along the value chain; the most obvious interaction is between the artists (or their agents) and the record producers, who take on or commission new projects. They also, sometimes, spark new interactions, such as between record labels (or radio stations) and concert halls or festivals, which result in agreements to make either "live" or post-concert recordings.

Figure 1. The music industry value chain



Source: Wilson and Stokes, 2005

3 Case description

3.1 Spanish early music

From the mid 16th century to the end of the 17th is known as the "Spanish Golden Age", and represents the height of Spanish cultural prestige. The best supported cultural areas were literature, plastic arts, music and architecture. Literary, pictorial and architectural works have survived through to contemporary times, but musical works and their authors (with some exceptions, such as the famous triumvirate of classical Spanish polyphony, Morales, Guerrero and Victoria), for various reasons, have not remained so popular or have not been so widely disseminated. Among these reasons is

the less well developed music printing industry in Spain and the late emergence of musicology as a science and its inclusion as a discipline in universities. Manuscripts of the works by authors of high renown in their time are preserved in archives and libraries, in Spain and in Latin America, and books and musical manuscripts have circulated rapidly and widely during the Modern Age. However, experts estimate that a large part of Spanish musical heritage has not been performed or recorded, and that a considerable part of the repertoire has not been catalogued or edited, both conditions indispensable for its subsequent performance.

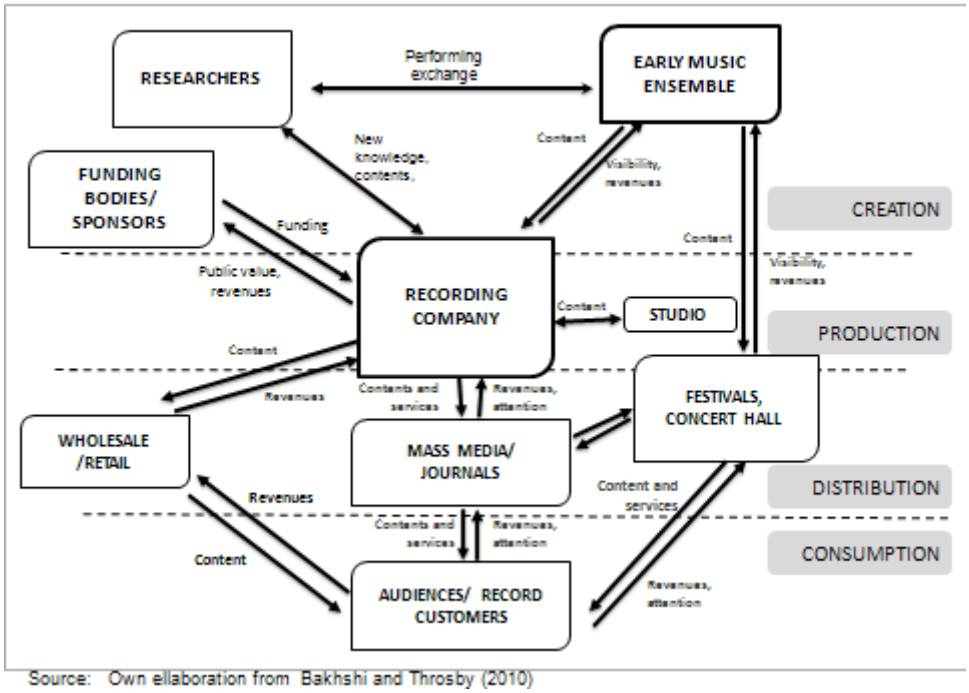
Musicologists are researchers who are dedicated to the scientific study of music and its various aspects (history, origins, context, theory, instruments, etc.). In the case of early music, musicological research makes two basic contributions: firstly, it provides new editions because, before to the 17th century the type of notation used was different (mensural notation, instrumental tablatures). This makes it necessary to create modern transcriptions that today's musicians can perform. It also adds value to the results by providing elements of contextualisation and reflection which help our understanding of the importance of musical phenomena within a broader perspective. Therefore, musicology studies contribute to the staging of performances which are more faithful to the context of their creation. The knowledge generated by musicologists is published in books and or specialist journals, mostly produced by academic or institutional publishers. It has been calculated that more than 25,000 pages of Spanish music from the period under study have been printed by the CSIC, for example. These include the works of a long list of composers, and several music genres.

3.2 The innovation process: actors and interactions

The case under analysis is the creation of the "Poetic music"[2] collection of recordings under the auspices of a small recording company (Lauda Música) that specializes in early music, associated with an early music ensemble, La Grande Chapelle, and CSIC (Lambea and Josa, 2007). Their collaboration began in 2005 with an agreement signed by CSIC and Lauda Música, on the basis of the scientific collaboration involving musicologists from the Institució Mila i Fontanals, part of CSIC, and specialists in the literature of the Spanish Golden Age from the University of Barcelona. Informal collaboration between the researchers and the recording company started in 2004, when the Comunidad of Madrid (Madrid regional government) commissioned Lauda Música to produce a CD of *Music for Don Quixote* to commemorate the IV Centenary of the publication of the first part of Don Quixote. The collaboration between the researchers and the recording company's managing director was decisive for completing the project within the stipulated deadlines and to the required scientific quality. The experience suggested the possibility of collaborating over other projects of interest to both the recording company, which was enabled access to unpublished works or works not previously performed, and CSIC, which saw it as a new means disseminating musicological research. Thus, in 2005, CSIC's Department of Publications approved the co-editing, with Lauda Música, of the "Poetic Music" record collection and signed the agreement to start the collection, under the scientific direction of the CSIC musicologist. The object of the new collection is the recording of Spanish music from the 16th to the 18th century, under the various categories of secular, religious and instrumental music. The declared general objective of the collection is: *to combine the interests of the entities sponsoring the records with scientific and musical quality and innovative productions* (Lambea et al., 2010).

Figure 2 depicts how the actors in the Poetic Music system interacted to generate successive recordings and associated concert performances.

Figure 2. Actors and linkages in the Poetic Music system



Source: Own ellaboration from Bakhshi and Throsby (2010)

In the specific case of early music, the production process for each project begins with identifying the basic content to be recorded. This is based on the project objective, defined in terms of the opportunity identified by the *recording company* (the anniversary of events, composer, etc.), and scientific reasons (such as the recent discovery of scores of high musicological value). The compositions to be included in the collection are selected according to the objective of each project, in consultation with musical and literary sources, and supporting documentation, which makes it possible to achieve more informed reconstructions. In some cases, what is known as “contrafactum” (the substitution of the original text for other text without substantial change to the music) is undertaken. It is interesting to note that this was a frequent contemporary practice and the elaboration of "à la carte" records constitutes a further essential historical factor which offers the producer the possibility of adapting proposals to sponsors’ interests, facilitating the formulation of new projects. This work is done by *musicologists and literature researchers*, a new type of actor that emerged when the scheme in Figure 1 is applied to early poetic music.

The content of each record is the result of a joint decision involving the managing director of the recording company, the artistic director of the *ensemble*, and the researchers, based on the project objective, its scientific interest and the conditions under which it is to be developed. The artistic director of the ensemble selects the *performers*, specialists in the style in question, who are of various European origin, in an effort to recreate the original conditions of the works' premiere performances. In the case of La Grande Chapelle, the intention is also to promote the amalgam of different techniques and musical schools, creating a platform for the meeting and the exchange of ideas aimed at enriching knowledge of the past and establishing new bases for a new performance approximation which aspires to become a reference.

After several days of rehearsals, the recording is made in a historic space or a modern venue with the appropriate acoustic conditions. The recording is entrusted to a prestigious European studio to guarantee use of the latest digital technology which will most fully respect the timbre of the original instruments and the freshness of the performance. After weeks of postproduction and mastering work, the director of the ensemble checks the first edition of the master in order to make any corrections. It is customary to carry out meticulous checks of three editions in order to ensure a rigorous, high quality musical version.

Another relevant component of the product is the libretto, since this provides a historical introduction and informative analysis of the works recovered. The descriptive texts are written in Spanish by specialist musicologists and translated into English, French and German by appropriate experts. The Latin texts of religious pieces may be translated with the collaboration of a classical *philologist*. The libretto includes comment, sung texts, sources/bibliography, descriptions of all images, and credits. These are intended to place the musical content in context and add value to the recording medium.

The quality and rigor applied by participants in this process to these recordings is required by the final customer: a select and often expert audience knowledgeable about this type of music, which expects novelty and high quality from the product. Early and poetic music audiences appreciate the whole product and each of its separate components (contents, performance, recording, libretto).

Participation of the ensemble in *national and international early music festivals* is vitally important to disseminate the recovered repertory (which to the great majority of foreign programmers is unknown) and to earn a profit from the efforts dedicated to the first recordings of these works and reduce the costs associated with this process.

Although Wilson and Stockes (2005; p. 368) (Figure 1) do not include the financial aspect of this process, they identify specific financing difficulties experienced by small popular music companies in the sector, which have led to the acquisition of managerial skills and negotiation between independence and collaboration in the conduct of their activities. In the case of early music, there is another agent not considered explicitly in Figure 1: *the sponsors*, which co-finance the performance (concerts) and/or editions of the music records. These may be private entities acting within the framework of their social work or communications policy, or public entities acting within the framework of their cultural policies (Pratt, 2005; p. 8).

Once copies of the recording are delivered to *sponsoring entities* and collaborators, and official presentation made, the discs are available to *distributors/dealers*, in Spain and abroad, which distribute them to generalist or specialist music shops. The distribution plan includes announcements in specialist *journals*, publication of reviews of discs and/or their inclusion on the websites of performers, record companies, research groups, etc. The role played by *classical music radio and TV channels* which broadcast these products and form opinions, is very important in this sector, where the audience, although limited, demands high quality performance. This means they will study expert reviews.

Since 2005, in addition to the recording that sparked the collaboration, six more discs have been edited within the framework of the poetic music collection. The four more recent discs are the first worldwide recordings of the particular works and three have received national and international recognition and are regarded as prestigious.

4 Discussion

Following Miles and Green (2008; p. 109) and Bakshi and Throsby (2010; p. 17) we consider that the performance or editing of contemporary revivals (works performed for the first time in the present era) constitutes a product innovation.

In the case of early music studied here, the need for new scientific knowledge (analytic, in Asheim *et al*'s. (2007) terminology) in the different stages of performance and editing of new works, suggests that this sector could be defined as scientific knowledge intensive. However, since it is a cultural industry, it also has a high symbolic knowledge content, since it is the rigorous and contextual interpretation which adds exceptional value to the performance and production of this type of music. Finally, synthetic knowledge (skills and interpretative richness of performers, recording techniques) is required to achieve the desired quality.

The emergence of the innovative collection and the product of each of its projects (records) require, over the course of each project, the interaction of many actors playing different roles. This leads to the emergence of a sectoral system of innovation in which interactions give rise to new innovative products. The recording company managing director and the artistic director of the ensemble are at the core of the system in this paper, since they interact directly with the other elements (researchers, their scientific institution, sponsors, performers, recording studios, distributors, media, festivals, concert halls, etc.), which may vary from project to project.

Furthermore some of the works included in the records are the fruits of research discoveries. Within this context there are several micro, independent, music record companies whose main asset is the management of specialized knowledge at the frontier. The collaboration with the researchers is reinforced by shared common interests and a common language. In this case, the shared interest is the production of new contemporary revivals of early music or the editing of records that are clearly differentiated from those already in the market, increasing the value of the Spanish musical heritage, which is the reason for the collection.

We have demonstrated that this interaction has been continuous from the moment the idea of the collection was conceived, and that the participation of the researchers has not been limited only to providing the musical and literary contents of the project, but has influenced other stages of the production process (ranging from the selection of works to the preparation of libretto texts, choice of images, search for sponsors and marketing of the new recordings).

The managing director of the recording company, who since 2007 is also the artistic director of the ensemble, and the researchers are fully cognizant that the close collaboration that they have maintained over the years has greatly influenced their respective activities within a mutual learning process. For the artistic director, beyond the content of each project, the transcriptions and documents provided by the researchers have had clear repercussions for the way works are directed and performed, to respect their richness of interpretation and historical rigour. For the researchers, their research agenda has been influenced by this ongoing collaboration, and shaped the content studied and the way their research has been conducted. First, in terms of their research subject, composers and themes, they have worked to provide new scores and texts which coincide with the objective of the musical project ongoing at a specific time.

The texts chosen and/or adapted are selected for a contemporary audience. Second, the transcription of scores is undertaken bearing in mind the needs of the performers and the artistic director, who will breathe new life into the works and shape them through an act of artistic communication, the ultimate goal of any musical performance.

The managing director of the recording company/artistic director of the ensemble is a musicologist specialised in Spanish Baroque, which means that the situation is similar to that in other sectors dependent on research, where the level of qualification of those responsible for the company's interaction with the researchers (absorptive capacity) is a significant factor in the success of that interaction (García Aracil and Fernández de Lucio, 2008). It is also a decisive factor for the learning of the group and the various artists participating in recordings and concerts because the artistic director passes on new findings about how pieces should be performed.

The participation of private and public sponsors has a huge sway over the content of new records and development of the process because they fund projects related to their particular objectives. Sponsors can influence the content and scope of musical productions, their editing and distribution, and even the survival of some companies or actors in the system, since many are highly dependent on financial sponsorship to carry on their activities. The more exclusive or local the music they perform and record, the greater is their dependence on sponsor funding. In the Spanish case, due to administrative restrictions, collaboration between recording company and researchers is essential to achieve desired results within the available time frames, which are often short. The search for and involvement of sponsors in each new project is arduous and, as has been indicated, can require modifications to projects in order to align with the interests of specific patrons.

In this case, CSIC has played a multiple role; the researchers belong to the institution, which is also co-editor and sponsor of the collection, in some cases providing resources beyond those foreseen by the publications department in order to offer CDs as an institutional gift. CSIC's involvement in the collection is a guarantee to other potential sponsors and to the audience. For CSIC, the Poetic Music collection has two important benefits. First, it represents cultural cooperation with industry, in a long-term partnership in which all stakeholders (researchers, the record company, the music group) learn, and modify their work. Second, it contributes to the social dissemination of results and to the Spanish musical heritage.

5 Conclusions

Although the so-called "cultural industries" are included in services, there are cases of innovation in the cultural industries which correspond to the paradigm of high tech manufacturing sectors. Innovations in the cultural industries lack many of the conditions and circumstances that characterise them in the service sector (e.g. participation of service targets in the innovation process). This is not just a characteristic of the music sector, it applies also to other heritage related sectors where scientific discover becomes the key characteristic of the innovation process in addition to other circumstances well illustrated in the literature such as incorporation of ICT, new marketing strategies or organizational changes. In addition, the case in this paper challenges the general belief that researchers in the humanities do not get involved into innovation processes.

The innovations described in this paper are produced in a sectoral innovation system with features derived from the characteristics of the actors and the final product. The cooperation between humanities researchers, and the recording company director and the artistic director of the ensemble has a profound effect on the results of each specific project because the time available to complete a project is usually short and the knowledge gathered by the researchers is decisive in the ability to define the scope of the project in a limited time frame.

Intensive cooperation over several years has influenced the activities and knowledge of the actors in the system. It has changed both the content of study and how the researchers conduct it, as well as how the artistic director and musicians conduct and perform the works. A mutual learning by interacting process has taken place.

This case study highlights the multifaceted role of scientific institutions in the process of innovation in this sector, which does not respond to a simple linear scheme of knowledge transfer. The institution provides the knowledge, through its researchers, and also assists in the distribution of the collection (since it belongs to the institution's publisher); it acts as a sponsor and participates in the marketing and dissemination of cultural heritage, organizing presentations of new records and providing records as institutional gifts.

These conclusions can be applied to other areas of cultural heritage which are developed through the interaction of multiple actors with specific characteristics. We have demonstrated in the early music case that the role of researchers and their institution is prominent. Besides, this case also is valid to illustrate that the Innovation System concept relies on the possibility of gauging interactions among different agents, becoming therefore this issue into the keystone for their analysis in other areas (sectors, regions, nations, etc.) and revisiting the old debate about the ways of measuring interactions.

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[1] The term "early music" is generally applied to music prior to 1800, although it is also used to refer to music whose style or performance is reconstructed based on manuscript or printed music, treatises, instruments or documents. This means that the term "performance of ancient music" is being substituted for "historically informed performance". See Joseph Kerman (1985) and Nicholas Cook (2003) on the impact of the historicist movement during the last decades of the XX century.

[2] "The CSIC's "Poetic Music" record collection slogan is both a proposal and a promise: Poetic music is the title of a musical treatise by Joachim Burmeister, written in Latin and published in 1606. This German theorist was the first to propose a rhetorical systemisation for musical expression. His intention was the same as that which inspired this collection: to produce eloquent music, capable of stirring the feelings of the audience, even those of today, through controlled transgression of the rules of composing" (Lambea and Josa, 2007, op. cit.).