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Upbeat and Quirky, With a Bit of a Build

Communicating Meaning and Meeting Information Needs in the Music Industry.

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Submitted for PhD, September 2010

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Declaration

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Abstract

Music is widely used to accompany moving images, in films, advertising, television programmes and computer games. The process of choosing and using a piece of pre-existing commercial music for this purpose is known as synchronisation. The addition of music to a piece of film enhances the final work with cultural meaning, and generates additional income for the rights holders. This research examines the information needs of professionals involved in the selection of music, including Users from the advertising and film communities and Owners from the recording and publishing industries. A tentative communications model is developed and proposed from musicological, semiotic and communications literature. Interviews, knowledge organisation systems, queries and observations are identified as rich potential sources of textual data relating to the communications process around satisfying the Users' information needs. The content of these texts is analysed to identify key musical facets. Mood is found to be an important factor when searching for unknown musical items. Using a Discourse Analytic approach to the interview texts, four discourses, or interpretive repertoires, are identified. These repertoires carry conflicting meanings of music and are employed throughout the community, although relative emphases vary according to the viewpoint of the stakeholder. This is supported by an analysis of the written texts of both the Owners (music search engines) and the Users (written queries, or briefs). A comparison is drawn between the emphasis of the repertoires and the precision of the search engines. The repertoires are applied to the theoretical communications model, which is revised to reflect the findings of the analyses. This is used to make recommendations on how to improve the disintermediated communications process, by emphasising the repertoires employed by the Users rather than those of the Owners.

Symbols and / or abbreviations

AACR2 - Anglo-American Cataloguing Rules 2nd Edition

BCM –British Catalogue of Music

DA – Discourse Analysis

DC – Dublin Core

FRBR - Functional Requirements of the Bibliographic Record

GT – Grounded Theory

IASA - International Association of Sound and Audiovisual Archives

IFLA - International Federation of Library Associations

IR – Information Retrieval

LIS – Library and Information Studies

MARC- Machine Readable Cataloguing

MIP – Music Industry Professional

MIR – Music Information Retrieval

MPEG-7 – Multimedia Content Description Interface

MSE – Music Search Engine

SFX – sound effects

VO – voice over

1. INTRODUCTION

The overall subject of this thesis is the information behaviour of a relatively small community of creative professionals within the music, film and advertising industries whose job is to search for music and combine it with moving images to enhance movies, commercials and computer games. The idea of looking at this community arose from the researcher wishing to combine his twenty year experience in the commercial music industry with a more recent Library and Information Studies Masters qualification. Reasoning that record companies and music publishers are merely digital music libraries in another guise and that film makers and advertising agencies are library users it became apparent that the relatively unique combination of extensive music industry experience and up-to-date information management skills could offer some valuable insights into the information processes within these library systems. It is hoped that this work will inform not just the world of academic arts, humanities and information science research but also the world of commerce – both library and musical.

i. Meaning

A central element of this thesis is the use of the term 'meaning', applied to music. In semiotic terms, 'meaning' is considered as having two elements: connotation and denotation – or sense and reference. These elements can be communicated between two or more parties (for example a performer and a listener). The listener may or may not share the meaning of a piece of music with the composer/performer depending on their interpretation of the signs within the music that are used to carry the meaning.

Musical meaning, therefore, is an idea that is contained within a piece or an element of music, which may be referenced by lyrics, melody, harmony, timbre or many other musical elements, or by the broader concepts such as the packaging of the CD or the non-musical activities of the performer, for instance. The communication of this musical meaning, discussed in detail in Chapter 2, is central to the study in this thesis.

ii. Context

Although research in information retrieval systems has traditionally focussed on evaluation of results there has been important research into user needs and behaviour, especially since the 1980s. Wilson (1981) brought various methods and approaches together calling for clearer foundations and concepts (Bawden, 2006). This turn to user-centred research led to key models such as Belkin's (1982) anomalous state of knowledge, Dervin and Nilan's (1986) Sense-Making, Ellis' (1989) information seeking process further developed by Kuhlthau (1991) and Wilson's (1999) problem solving model, amongst others. It has since been proposed by Ingwersen and Jarvelin (2005) that both user and system research are essential to reach a holistic understanding of information retrieval systems.

Rather than focus directly on the accuracy of information retrieval systems, this investigation is initially concerned with the ways in which the users of existing systems of any kind communicate their meaning and meet their information needs. The holistic approach of Ingwersen and Jarvelin (2005) suggests that the cognitive processes of the users and their context are as important to successfully meeting information needs as are the technical aspects of the information system they use (Tenopir, 2003). Insights into these cognitive processes are more readily generated by qualitative research, such as interviews, and these techniques are incorporated in the design of this research methodology. A collection of interview and official texts generated by Music Owners and Music Users are analysed using content and discourse analysis. In the spirit of the holistic view, the insights generated from these analyses are compared to the results of a more traditional systems evaluation approach. This methodological bricolage reflects the mood of the times, where new works of all kinds are constructed from combining existing ideas and referencing significant cultural events and practices.

Publications on music information retrieval (MIR) discussing qualitative research of user information needs traditionally bemoan the fact that there is little work in this area. However awareness of user needs and behaviour keeps users on the MIR radar, even though they are not usually the focus of reported research. Generally focus is on tagging and certain aspects of evaluation, such as ground truth and playlist evaluation. In an analysis of authorship patterns in the proceedings of the International Conference

on Music Information Retrieval (ISMIR) (Lee et al, 2009) the word 'user' does not appear in any top ten lists for ISMIR paper titles over the ten years of the conference, nor, indeed, in the top 20 bi-grams from titles and abstracts. Nevertheless, applying 'music information need' or 'user behaviour' as a query to the ISMIR Cloud Browser (Grachten et al, 2009) does generate a range of relevant work focusing on user information needs (Bainbridge et al, 2003; Cunningham and Nichols, 2009; Lee et al, 2007). This research project is situated within the user information needs paradigm and reflects the call at ISMIR 2009 (Downie et al, 2009) for the community to meet a number of challenges, the first identified being "*ISMIR needs to more actively encourage the participation of potential users of music-IR systems.*" (Downie et al, 2009).

iii. **Aims and objectives**

Aims:

1. To use a clear understanding of the issues in IR and MIR to evaluate music industry professionals user needs
2. To develop and test a model which accurately reflects meaning making in MIP search process
3. To offer insights into how systems designed for this type of searching may be improved.

Objectives:

1. To overview the literature relating to MIR and evaluate how it relates to traditional Information Retrieval.
2. To develop a model out of the literature describing meaning making
3. To identify music industry professional users of MIR systems and investigate their information needs and behaviour
4. To evaluate whether the results of their searching meets those needs

5. To investigate music knowledge organisation tools and analyse how they relate to general and other specialist tools and identify and evaluate the various retrieval systems used in music industry MIR

6. To test the model against findings

7. To use this information in offering insights into improved MIR systems

iv. **Findings**

A tentative communications model is developed and proposed from the literature. Interviews, knowledge organisation systems, queries and observations are used to collect textual data relating to the communications process around satisfying the information needs of creative professionals searching for music to accompany moving images. Four discourses, or interpretive repertoires, are identified. These repertoires carry conflicting meanings of music and are employed throughout the community, although relative emphases vary according to the viewpoint of the stakeholder. This is supported by an analysis of the written texts of both the Owners (music search engines) and the Users (written queries, or briefs). A comparison is drawn between the emphasis of the repertoires and the precision of the search engines. The repertoires are applied to the theoretical model, which is revised to reflect the findings of the analyses. This is used to make recommendations on how to improve the disintermediated communications process by emphasising the repertoires employed by the Users rather than those of the Owners.

v. **Structure**

This thesis was written while the research was taking place, rather than from the standpoint of a set of final results. Each chapter in this iterative process reflects a step in the research, is informed by and builds from previous work, and leads to the next stage. This approach allowed the researcher to publish peer-reviewed versions of elements of the thesis during the research itself. Following the Introduction (1), a literature review discusses the wider context of the research within a framework of theories of musicology, library, semiotics and communications. These critical readings are

tentatively synthesised in a reflexive communications model (2). This leads to a discussion of analytical approaches relevant to this project and an overview of the context and the bricolage of methods of data collection used in the research (3). Each chapter following this describes a particular aspect of data collection and analysis, with a detailed discussion of the methodology relating to that particular 'sub-investigation'. Thus, a selection of face-to-face interviews offer some insights into the information needs and communication processes of creative music searchers (4), while an analysis of the organisation of existing web-based applications designed to facilitate this type of searching considers the metadata that is presented by the Music Owners to the Users (5). User queries are subsequently analysed in (6). The relevance judgements of professional music searchers are then examined by applying the queries to the search engines and discussed in the context of existing text retrieval theory (7). A lengthy in-depth investigation then analyses the discourses of the participant interviews, suggesting they use four contradictory yet equally valid interpretive repertoires (8, **Error! Reference source not found.**, 10) and discusses these in the context of the written texts, namely the queries and search engines (11). The practical problems of applying detailed subjective queries to the search tools are discussed, leading to an investigation into their Precision (12). Finally the repertoires and other findings are used to test and revise the theoretical communications model (13). Findings and conclusions are presented in (14).

vi. Sources

It should be noted that similar versions of much of this work have been published in peer-reviewed conference proceedings and journals over the research period. This final publication, therefore, has been rigorously edited, defended and revised by the author, guided by peers in the library and information studies and the computer science music information retrieval communities. The detail of this follows. In all cases the chapter number in the thesis precedes the original source reference.

Chapter 2:

Inskip, C., Macfarlane, A. & Rafferty, P. (2008) Meaning, communication, music: towards a revised communication model. Journal of Documentation 64(5)

Inskip, C. (2008) Communicating Meaning and Meeting Information Need within the Music Industry, MPhil to PhD transfer paper.

Chapter 3:

Inskip, C. (2008) Communicating Meaning and Meeting Information Need within the Music Industry, MPhil to PhD transfer paper.

Chapter 4:

Inskip, C., Macfarlane, A. & Rafferty, P. (2008) Music, Movies and Meaning: Communication in Film-Makers Search for Pre-Existing Music, and the Implications for Music Information Retrieval. Proceedings of the Ninth International Conference on Music Information Retrieval, Philadelphia, PA, 14-18 Sep 2008

Inskip, C., Macfarlane, A. & Rafferty, P. (2008) Content or context? Searching for musical meaning in task-based interactive information retrieval. Proceedings of Information Interaction in Context Symposium, London, UK, 14-17 Oct 2008

Chapter 5:

Inskip, C., Macfarlane, A. & Rafferty, P. (2009) Organizing Music for Movies. Proceedings of International Society for Knowledge Organization (UK) Content Architecture conference, London, UK, 22-23 Jun 2009

Chapter 6:

Inskip, C., Macfarlane, A. & Rafferty, P. (2009) Towards the Disintermediation of Creative Music Search: Analysing Queries to Determine Important Facets. Proceedings of ECDL Workshop on Exploring Musical Information Spaces, Corfu, Greece, 1-2 Oct 2009

Chapter 7:

Inskip, C., Macfarlane, A. & Rafferty, P. (2010) Creative Professional Users' Musical Relevance Criteria. Journal of Information Science 36 (4) pp 517 - 529

Chapter 8:

Inskip, C., Macfarlane, A. & Rafferty, P. (2010) Upbeat and Quirky, with a Bit of a Build: Interpretive Repertoires in Creative Music Search. Proceedings of the Eleventh International Conference on Music Information Retrieval, Utrecht, Netherlands, 10-13 August 2010.

2. MEANING, COMMUNICATION, MUSIC: TOWARDS A REVISED COMMUNICATION MODEL

i. Introduction

The effective organisation of information determines whether or not users are able to search for and retrieve items that fulfil their needs. If an information retrieval system is going to be of value to the user then it must give meaning to the information which matches the meaning given to it by the user. The meaning given to music can vary according to who is interpreting it – the author/composer, the performer, cataloguer or the listener – and this directly affects how music is organized and how it is retrieved. This section examines the meaning of music, how the meaning is communicated and suggests this may affect retrieval of music, offering a revised version of Tagg's (1999) communication model which is adapted to reflect user feedback. First the approach of musicologists is used to define music and examine its functions. This leads to a discussion of how music has been organised and described. Against this background various ways of establishing the meaning of music are reviewed, focussing on established musical analysis techniques, particular that of Schenker. It is suggested that these methods, while valuable for notated Western art music, are of limited use with digitised popular music. A discussion of semiotics and a review of semiotic analysis in Western art music leads to a discussion of semiotics of popular music and examines the ideas of Middleton (1990), Stefani (1987) and, particularly, Tagg (1999). Agreeing that music exists when communication takes place, a discussion of selected communication models leads to the proposal of a revised version of Tagg's (1999) model, adjusting it to include listener feedback.

The assumption upon which this thesis depends is that the best way to reach an understanding of the issues involved in music information retrieval (MIR) is to situate MIR within a broader discussion of communication and culture. Music information retrieval is seen as operating within the broader context of human communication, and

in turn, human communication sitting within the broader context of human history and society. This world view informs the aims and objectives of this thesis, which is related to music communication, and are intended to operate as a sound foundation for future MIR design. Although extensive work has been done analysing and discussing the physiological and psychological aspects of music, in particular to its emotional response, a decision was made at the outset to confine the scope of the literature under review to that relating more directly to socio-cultural interpretations of music, specifically musicological, information science and semiotic approaches. While the experience of the individual listener, physically and physiologically, is an important part of the musical process, the aim of this work is to examine communicative practices between stakeholders within a socio-cultural paradigm.

The aim of this research is to examine existing music communication models and to propose a revised music communication model which incorporates significant elements of existing models, and modes of analysis. In order to do this there are a number of objectives. In this section, definitions and descriptions of music, theories of signification and communicative practices relative to music, and existing models of music communication are reviewed, leading to a tentative proposal of a revised music communication model, which is subsequently tested against real world qualitative data

ii. **Music**

The ethnomusicologist John Blacking (1973) describes how his investigations into the music of the Venda culture in Africa confound his earlier understanding of:

> *"music as a system of ordering sound, in which a cumulative set of rules and an increasing range of permissible sound patterns had been invented and developed by Europeans who were considered to have had exceptional musical ability." (Blacking, 1973:x)*

He found that in order for music to communicate and have meaning there must be people involved, and that perceived surface differences between musical works cannot have any significance without an understanding of how music relates to the emotions, both in its creation and its use and understanding. Blacking's fellow ethnomusicologist, Bruno Nettl, discusses the futility of attempting an all-encompassing definition of

'music' (Nettl, 2006), noting the variations in understanding and use of the concept across time and cultures. However he concludes that music, at its most fundamental, is generally agreed to be an art combining sounds, a form of communication, and a set of physiological processes. Blacking (1973) reminds us that if listeners share the same cultural experiences they are likely to respond to the signs and signals of music in similar ways, and that music can only be properly understood – that is when the meaning to the listener matches the meaning intended by the producer - when the listener shares, in some way, the same experience of the creator. He also points out how context and conventions will affect understanding. The context, therefore, determines whether or not the experience is musical or not and the listener is an integral part of the musical experience.

a. Function:

Merriam (1964:219-227) itemised ten principal functions of music:

- emotional expression
- aesthetic enjoyment
- entertainment
- communication
- symbolic representation
- physical response
- enforcing conformity to social norms
- validation of social institutions and religious rituals
- contribution to the continuity and stability of culture
- contribution to the integration of society,

although Nettl (2005) suggests these functions could apply to any of the art forms or even speech and there are of course exceptions. Blacking noted that:

"the chief function of music is to involve people in shared experiences within the framework of their cultural experience" (1973:48)

and that this function will influence its form. Nettl (2005) proposed an 'emic-etic' analysis would enable the musicologist to evaluate the use and function of music more clearly. Successful analysis, matching the meaning of the music to that of the listener, should contribute towards the development of successful retrieval systems. This idea of shared experience has an important bearing on information organisation issues within MIR, implying the listener could be involved in some way with determining how music is indexed by using social networks and tagging.

b. Organisation and Description

A successful information retrieval (IR) system requires the collection to be organised in a way that allows the user to find what s/he is looking for. There are various established ways of organising collections of music into music libraries.

Redfern (1978) examines various schemes, some special, others general, that can be applied to music collections, and he recommends that *"the reader is the most important person to consider"* (1978:12) as different types of readers (users) have different information needs and will therefore approach the collection in different ways. These are generally based on either category of thought or cultural function (Nettl, 2006). Redfern is writing mainly from a Western classical music viewpoint, focusing on notated music scores, and suggests that facets in music literature will differ from facets in music itself, although there is a crossover, (Table 1), thus:

Facets	**Type of facet**	**Literature**	**Music**
Composer, instrument, size of ensemble, form	Specific	Yes	Yes
Musical character, space, time	Specific / general	Yes	Possibly
Elements (eg harmony), techniques, theory, forms of presentation, phase relationship	General	Yes	No

Table 1 Music facets from Redfern (1978)

The main special scheme is Eric Coates' British Catalogue of Music (BCM), which is based on Ranganathan's Colon classification. BCM has been the dominant notated Western classical music classification scheme in music libraries since its inception in 1957. General schemes such as Dewey, Library of Congress, Bliss, Brown and Colon also provide opportunities for music libraries to organise their collections, to varying degrees of success. The main problem with these types of system are that they were designed before popular music became an accepted form for library classification and therefore many do not consider its special nature such as multiple authors, performer as author, and myriad genres. They do, however, give some insight into some of the key facets of music, as listed in Table 1.

Music information can be represented in many different ways. Burke (1999) discusses how music can be organised by bibliographic metadata (creator, composer, title), manifestation (score, recording, performance, lyrics), or subjectively. This is supported by established music library theorists such as Bryant (1985) and Jones (1979). Jones pointed out it is extremely difficult to standardise music cataloguing due to language and cultural differences, even with printed manuscripts. Following normal classification and cataloguing procedure most bibliographic metadata can be described adequately by existing text-based systems. Manifestation can also be accommodated. This means that known-item searching can be performed by systems that contain this kind of metadata. Existing standards also continue the legacy of Western classical tradition, focussing on notated classical music rather than recorded popular music.

c. Digitisation

The onset of digitisation has led to vast amounts of digital files being instantly globally accessible through the internet, and individuals carrying around collections of 10,000 songs or more. Accessing this material in an efficient way that reflects the needs of the user is one of the main priorities of the emerging discipline of Music Information Retrieval (MIR).

MIR concerns the organisation of digital music collections. Chowdury (2004) describes the purpose of an information retrieval system to be as a bridge between the creator and the user. He goes on to describe the main functions of a system to be to analyse the contents of the sources of the information and the queries and match these to

retrieve relevant items. Information professionals must be aware of the difficulties of analysis of the contents of music and analysis of the queries if they are to match them successfully. There are two types of MIR systems, content-based and context-based. Content-based systems attempt to search collections by music attributes such as timbre or tempo while context-based systems using text, such as OPACs or search engines, are good for finding known-items. (Downie, 2003a; Typke et al, 2005).

d. Queries

An additional problem in the retrieval situation is that queries are subjective. Selfridge-Field (2000) discusses how they may be 'fuzzy' and not relate specifically to the indexing terms used to describe the music being sought. Affective dimensions cause problems with building an all-encompassing taxonomy as music does not lend itself to automated indexing systems classifying mood and emotion (Huron, 2000). Attempts to automate emotional indexing are being made (Tzanetakis and Cook, 2002 and Liu, Lu and Zhang, 2003) owing to the cost of manually indexing music and the inherent interpretation problems discussed earlier. These systems are prompted by the observation that users do not only want to search for music by artist, title, album access points but also by mood, and genre. It is suggested that mood and genre can be automatically described using algorithms which examine datasets generated by facets such as timbre and rhythm. However there has to be a human involvement in choosing the mood or genre taxonomy, and in checking the accuracy of the software, as the emotional involvement in these decisions cannot (yet) be fully replicated by computers. Summarising the 'aboutness' (Hjørland, 2001) of music is essential in the pursuit of fulfilling the established aims of precision and relevance in MIR systems (Hutchins, 1977). However there is a case to be made for redefining the parameters for evaluating these systems to accommodate the prevalent browsing requirements of the user of exploratory capability or cognitive control (Warner, 2000).

e. Popular music

It is important to appreciate the differences between types of music as these have wide-ranging implications. While Redfern (1978) breaks down music into Art, Folk and Pop, he provides a 'librarian's definition' (1978:60), focussing on how folk music

comes from one culture, popular music has influences from outside its own culture, and art music comes from Western Europe and parts of Asia and is designed for

> *"refinement and appreciation, rather than immediate emotional response" (1978:60).*

Brackett expands upon this, stating that art music requires training in order to experience its true meaning and has a known composer; folk music has an unknown composer, is evolving, and is by and for the community; and pop music is evaluated in terms of commercial success, the main relationship being between the performer and the listener (Brackett, 2000). While Redfern's regionally based definitions are informed by the schemes he is discussing and the Western classical music school of thought, Brackett's are more relevant to the scope and viewpoint of this study, which holds that the study and analysis of popular music can help point MIR research towards solving some key problems in examining its meaning.

iii. **Meaning**

Meyer discusses how music may have meaning within itself (absolute meaning) or may refer to external issues such as concepts, actions, emotions or character (referential meaning) (1956:1). These types of meaning are not mutually exclusive, and both are based on learning and inherent understanding. He argues, referring to social behaviourist George Herbert Mead who was writing about gestures used for communication, that communication only takes place when the music has the same meaning for the person who makes or performs it as the person who hears it, but that it is not necessary for the listener to understand the creative process to understand the music because composers put themselves into the minds of their intended listeners when composing, and choose musical processes that will generate intended responses. These types of meaning are reflected by two analytical approaches, one focusing on the listener's cognitive responses to music, the other on the music itself.

a. Musical analysis

If music information is going to be successfully retrieved from a large collection it makes sense that it should be analysed in a way of determining its 'aboutness'. The field

of musicology has been littered with techniques for musical analysis and some of these have important lessons for information retrieval. Music analysis is described as:

> *"the interpretation of structures in music, together with their resolution into relatively simpler constituent elements, and the investigation of the relevant functions of those elements" (Bent and Pople, 2006).*

Breaking down works into their elements is likely to produce metadata, which can be used for retrieval. Analysis can be applied to styles of performance and interpretation as well as composition, to music's structure as well as its meaning in an attempt to explain how it works, and is descriptive as well as evaluative. Although it is traditionally empirical it has developed to encompass the study of external factors (Bent and Pople, 2006).

Of more influential techniques, Schenkerian Analysis examines notated Western classical music and assumes music is essentially the unfolding of a triad chord over time by arpeggiation and other linking notes (Cook, 1987). The value of this to analysts is to be able to examine relationships and patterns *within* a piece, and to show the special nature of the piece – how it gets from the beginning to the end.

Schenker's extremely influential methods are important to MIR because he acknowledged the importance of form as a psychological concept (Cook, 1987). The cognitive affects of music, which have vital significance in the level of successful communication between composer and performer, performer and listener, and composer and listener, were recognised in analysis. Cooke attempts to establish a taxonomy of terms used in *"musical language"* (1959:xii) with the aim of explaining the meaning of music, and highlighting the dichotomy between how some meanings have been attributed and learned over a period, and how the language is also "*a genuine emotional language*" (1959:24) that speaks directly to the listener's subconscious.

Alternatively more formal approaches to analysis can be used to inform the use of digital technology in analysing music. *Set-theoretical analysis* examines pitch classes to establish patterns in musical works and has directly informed modern MIR techniques for analysis and visualisation of music using computers. However even this most scientific of approaches requires some affective input (Cook, 1987) and great efforts

have been made to remove this unpredictable human element from the analytical process in order to successfully mechanise it. Michael Kassler (1966), the first writer to use the term 'Music Information Retrieval', and a former student of music analysis theorist and composer Milton Babbitt, worked on automating Schenkerian analysis, highlighting the pivotal interdisciplinary link between MIR and musicology. *Comparative method* involves finding an '*unconscious stylistic habit*' (Cook, 1987:189) such as the gaps between notes (intervals) using pitch or rhythm which determine the style of a work or works and then comparing statistically how frequently these appear in one piece with a similar measure in another piece. This is the basis of music recognition software used in MIR. However, setting the parameters of the measures of the intervals can be seen as a subjective issue. This idea was developed by ethnomusicologist Alan Lomax with his Cantometrics project (Nettl, 2005) which measured thirty-seven aspects of music (including, for example, nasality, tremolo, melodic shape etc, some of which are only applicable to recorded music rather than notation). There has to be a human element in analysis of music because music only exists when it has a listener (Cook, 1990). Other examples of measures and building blocks include phonemes, which are inspired by linguistics theory and directly related to the n-grams proposed by Downie (1999) as musical words or building blocks central to MIR systems, and Charles Seeger's melograph which attempted to represent music visually in a much more comprehensive way than traditional notation (Nettl, 2005).

This plethora of approaches shows that despite enormous efforts to pin music down into a form that can be broken up and analysed, notated and explained there is still no universal way of determining what music is about, and how it works.

b. Semiotics

Whether words can be used to describe music effectively is a key issue for MIR, relating as it does specifically to how users attempting to meet their information needs describe these needs in such a way that the system they are using understands them and can match their queries with a relevant result.

Semiotics involves the study of signs and formalises an attempt to establish the meaning of these signs. Language is a means of signifying reality in order to

communicate meaning. The ways the signs are interpreted are determined by the codes agreed by the community using those signs. Peirce stated that a

"sign, or representamen, is something which stands to somebody for something in some respect or capacity," (Peirce, 1897 in Innis 1985:5)

indicating the extent to which anything may be interpreted. In his 'Logic As Semiotic: The Theory of Signs' (Peirce, 1897 in Innis 1985), Peirce proposed three members in a semiotic relationship – the Sign/Representamen, the Object and the Interpretant. It is the relationship between them that determines meaning. He also proposed that a Sign could be one of three things: an Icon, an Index or a Symbol and potentially a sign could function in any of the three aspects depending on context. An Icon is the pattern that resembles the object, an Index is connected with the object, and a Symbol involves learning the meaning of the sign (Chandler, 2002). Although there is extensive discussion that semiotics of music is a separate discipline to the semiotics of language, parallels may be drawn, thus Tagg (1999) suggests a slur or a staccato mark in music notation would act as an Icon; an Index can be the music itself, indeed, according to Tagg, all musical sign types (record sleeves, photos of performers, lyrics, reviews, sound recordings, promotional videos) are Indexes; Symbols would include, for example, genre names such as 'punk rock' or 'rhythm and blues', or musical theory terms such as 'crochet' or 'quaver'.

Denotation/connotation grew from the work of Barthes (1977) who described two levels of signification – the first being denotation or common-sense meaning, the second level being connotational, which involves learning cultural meanings of a sign. Tagg gives the example of the word fire denoting the object or phenomenon of fire and the sound of the fire alarm connoting a fire (1999:5). Music is generally agreed to be more connotative than denotative. Although a keyboard making the sound of a car sounding its horn may be heard in Kraftwerk's 'Autobahn' (Kraftwerk, 1974) this is not designed to make the listener think there is a car coming. The piece of music is referring to the idea of a car to give meaning to the piece. So, as a sign in this song, it is a car horn at the denotational level, and signifies man as machine travelling through the modern world at the connotational level. In its functional capacity in modern urban life, the sound of the horn is an index for the approaching car, but in its appropriation as a sign within the Kraftwerk track, it indexes the concept of modernity.

The concept of intertextuality is a more recent development, introduced by Julia Kristeva as a post-structuralist idea (Chandler, 2002) in her presentation of the ideas of the dialogical principle proposed by Mikhail Bakhtin (Todorov, 1984). According to Todorov, Bakhtin stated that there is a relation between utterances called dialogism (or intertextuality) and that an utterance cannot exist except in relation to other utterances. The idea of intertextuality moved semiotics away from the study of the isolated text and incorporated its relationships with the reader and author on one hand, and with other texts, on the other. Combining this idea with communication theory leads to the suggestion that texts may be monologic (directed from author to audience – western classical music) or dialogic (which additionally allows for feedback from the audience to inform the author) (Rafferty and Hidderley, 2005). Dialogism is a significant idea in popular music where there is frequent borrowing of ideas and references to melody, harmony, lyrics and even timbre in other material. For successful communication of these references it is necessary for the listener to be familiar with the referred texts. Although listeners may not be able to change popular music recordings internal structures, they do use them in ways in which the meaning may be changed and their feedback to the music's owner / composer / performer in the form of sales figures or folksonomies can have effects on how the recordings are transmitted in future.

c. Social Semiotics

Hodge and Kress (1988) felt that focussing on the texts themselves had devalued the relationships texts have with social dimensions and contexts. They discuss how discourse

> *'...is the site where social forms of organisation engage with systems of signs in the production of texts, thus reproducing or changing the sets of meanings and values which make up a culture.' (1988:6)*

This would include genres, for example, which are social rules agreed on by social groups and can only be recognised by reference to these social groups. In music, for example, where genres are used widely to distinguish between musical forms, as much of the meaning attributed to the genre may come from the social group which attaches itself to that genre as from the internal aspects of the music itself.

Hodge and Kress proposed in their 'alternative semiotics' that this would include the wider study of the context of the document, as well as its content (1988:18).

This approach acknowledges the relationships texts have with the real world and is key to understanding the semiotics of popular music. Meinhof and van Leeuwen (2000) discuss how one consequence of listeners / readers / users engaging with a wide range of interacting texts is that they refer to a wide range of social and cultural reference points to make meaning and that these must be analysed (or at least accounted for) when examining how they interact with the texts in question. Because of this wide range of references it is likely that meanings will differ between and within different social groups.

d. Semiotics of Music

Orlov states that if an attempt is made to apply semiotics to music it will be found that music cannot be described as a sign because it

> *"stands for nothing but itself, referring to nothing but its own experienced reality" (Orlov, 1981:135).*

Equally it cannot be an icon because it does not resemble what it signifies. In the light of this he proposes that semiotic preconceptions are removed and music be treated both as an icon (on the surface) and as an abstract sign or unique and undefinable symbol (beneath the surface).

The dual nature of music is also discussed by Keiler (1981) who examines two different approaches to musical semiotics, the taxonomic-empiricist approach and the iconic or generative approach, both of which have informed ideas in today's MIR community. These can be split into two paradigms, one systems-centred the other user-centred. The *taxonomic-empiricist approach* constructs a set of explicit analytical procedures to pick out identical fragments and segments of (notated) music, seeking parallelisms and repetitions. It imposes a view of musical structure and does not provide for non-unique solutions and only looks at pitch and time and does not examine rhythmic or melodic parameters (Keiler, 1981). This approach resembles that of the MIR systems-centred research school, which focuses on developing systems for retrieval without referral to the user. Alternatively, the *iconic* or *generative approach* is

an attempt to seek music universals in actual sound patterns and is a syntactic approach allowing examination of harmonic structures using generative procedures. (Tarasti, 1994). It assumes the relationship between the signifier and the signified (or the expression and the content) is iconic – changing one changes the other. Tarasti points out that changing an element of music will change what it sounds like. He also notes that it is important to recognise that this approach examines the surface as well as syntactic levels, may be specific to context, and is not generalisable. This approach is recognised by the MIR community as being user-centred and recognises that the context can be as important as the content when attempting to resolve user information needs. Although much MIR research has focused on the systems approach there is a shift towards the user centred research which was called by for Futrelle and Downie (2002).

e. Semiotic analysis of popular music

The importance of context has been clearly recognised by Philip Tagg (1999) who argues that although music refers to itself because it is *"an alogogenic symbolic system"* (1999:9) it is also linked to society. Although there are such music universals as the direct relationships between tempo and heartbeat, and phrase lengths and lung capacity, social context has bearing on the meaning of music, which means that without an understanding of the social context within which music arises there will be insufficient understanding of the meaning of that music. Tagg proposes that as music communication has a collective character (between individual and self, or individual and a group and so on) then there must be intersubjectivity between musical structures. That is to say listeners or performers generally agree on what the meaning is of those musical structures (or musemes or musical morphemes). This intersubjectivity means it is possible to examine different pieces of music, find the connections between them, and see which ones lead to which responses. In other words, using formal semiotic analysis it may be possible to answer:

> *"the semiotic $64,000 question: Why and how is who communicating what to whom and with what effect?" (Tagg, 1999:1)*

Tagg proposes a sign typology of music, which involved a sample of listeners writing short film scenarios for a selection of 10 short pieces of music (Tagg and

Clarida, 2000). The typology denotes the consistency in reactions to various musical structures within the pieces.

Finally Tagg develops a checklist which details the aspects of communication, cultural and musical expression that should be considered when analysing music semiotically. This checklist (Appendix i), discussed below, combines internal musical structures and cultural contexts and is applicable to recorded popular music.

Taking the semiotic approach in the analysis of popular music allows the incorporation of certain key facets of pop that are not considered relevant to the analysis of Western art music. The 'author' of pop music can be seen by the audience as the performer, even if s/he did not write the song. This has deep significance in the analysis of modern dance music, which is multi-authored by inclusion of 'samples' of ideas from other artists' recordings and supports Barthes' idea that the author can be found in the text itself (Brackett, 2000). Analysts of pop (Middleton, 1990; Brackett, 2000; Stefani, 1987; Tagg, 1999) have examined the detail of the music both in terms of its content and context. There are key areas for consideration here in terms of impact on information retrieval as this reinforces the idea that the information seeking process will not be based purely on the established facets but also by mood or cultural value on one hand, or by significant elements of the music (hook, lyric).

Brackett (2000) determines how 'non-musical' factors can be as important in determining popularity as musical ones. These factors will affect the ways in which users search for music and should therefore be reflected in MIR systems. This 'musical coding' can be used to generate metadata:

> *"musical code offers a way of theorizing the connections between musical sound and such 'extra-musical' factors as media image, biographical details, mood, and historical associations" (Brackett, 2000:9)*

It is generally agreed (Middleton, 1990; Brackett, 2000; Tagg, 1999) that competencies are key if understanding the meaning of music is to be accurate. This means the person (or system) interpreting the music should be able to determine where a song sits not only in terms of its structure but also in terms of its relationships to the rest of the world, and is reflected in a communication model developed by Tagg (Figure

1), which reflects Kress' "*constantly shifting flow of meanings"* (2000:134) caused by intertextuality.

f. Coding

According to Brackett, the musical code provides an opportunity to understand the links between the sound and context (2000). Decoding these relationships will help establish meaning and should result in informing ways of organising music so it may be searched efficiently and effectively. Middleton (1990) suggests two methods of signification, primary (form, syntactic) and secondary (content, connotation). These feed into general codes which attribute musical meaning. In the case of popular music the general codes, which gradually become more specific may be described thus Table 2:

Langue	Western music
Norms	The mainstream conventions governing popular music
Sub-norms	The conventions of a particular era
Dialects	European, Afro-American etc
Styles	Rock, country, reggae, soul
Genres	Ballad, album
Sub-codes	Eg within rock, punk, progressive
Idiolects	Style traits associated with particular performers
Works and performances	Particular recordings or compositions

Table 2 Middleton's general codes. Source: Middleton (1990), Brackett (2000)

Combining these levels of signification and examining the general codes associated with them when analysing a piece of music should enable a clearer understanding of the music in question. However Stefani (1987) discusses the problem with understanding codes, which relies on competences – "high" or "popular". His model introduces the idea of context both for the senders and receivers of the message. Different listeners will have different levels of competence depending on their background, their interest and their experiences.

Tagg examines the external influences as well as the internal. This method, which is very detailed, examines many of Redfern's facets, Merriam's functions, Middleton's and Stefani's codes and Middleton's levels of signification. Comparing this to cataloguing standards such as AACR2, for example, it can quickly be seen that Tagg's

approach could be more relevant to the description and organisation of recorded popular music than existing practices. This clarifies the position that musical analysis cannot be performed without taking both content and context into account, and, by implication, MIR systems should reflect this if they are to successfully reflect the meaning of the information contained within them.

iv. **Communication**

> *'From the heart – may it go back – to the heart!' (Beethoven, in Cooke, 1959:210)*

In 'Toward a Semiotics of Music', Henry Orlov (1981) discusses how words have nothing in common with what they describe and are therefore not tied to reality. Words cannot therefore be used to adequately describe music. Although music has its own written language (music notation) this does not entirely describe the message the composer is trying to get across to the listener. The listener does not habitually sit and read a music score for pleasure but prefers to experience the music aurally. This communication process suffers from different degrees of competence and different stores of codes and thus each listener experiences a different message to any other listener depending on the extent to which the incompetence and interference impinge on the experience. The very fact that music is described as being a language, however, suggests that large numbers of people do get a similar message to others. This is particularly relevant when organising music for retrieval purposes.

Malcolm Budd discusses musical communication and states that:

> *"For a composer can create something that he intends should sound a certain way and that he intends the listener to hear in a certain manner; and if he succeeds in his intention, the listener understands his work and undergoes the experience the composer intended. And if the listener undergoes the experience the composer imagined, and intended the listener to undergo, the composer has communicated that experience to the listener." (Budd, 1985:151-152)*

Cooke's (1959) analysis of the process of musical communication states that the composer moves from conception and subsequent inspiration and uses the creative imagination to fuse form and content (rhythm, melody and harmony). It is then up to the

performer to use his/her understanding of the composer's intentions to communicate them to the listener, who will understand according to their musicality. Whether they are able to analyse the music intellectually or admire it aesthetically will depend on their education; whereas their emotional response will be determined by unconscious processes.

a. Models of communication.

It is useful to apply these ideas to communication models in order to understand how they impact on organising music for retrieval. Weaver described three levels of communication problem: technical, semantic and effectiveness (Shannon and Weaver, 1948). Technical problems are concerned with the accuracy with which information is sent; semantic problems are concerned with how the receiver interprets the message, and the effectiveness problem relates to the success with which the received meaning affects the behaviour of the recipient. These problems may be caused by 'noise' which may distort the meaning of the message leading to it being misinterpreted by the recipient. Here, information is to be considered as a message to be communicated but Shannon and Weaver state that it does not have to have any meaning to be considered information. It is the communication of the information that gives it meaning.

McQuail and Windahl summarise that most communication models describe

> *"a sender, a channel, a receiver, a relationship between sender and receiver, an effect, a context in which communication occurs and a range of things to which messages refer" (1993:5),*

The authors additionally consider the effects of encoding and decoding and how these may affect the meaning of the message being communicated.

Hall's influential model (1980) examines the encoding/decoding process in detail, finding that the moments when a encoding or decoding takes place are 'determinate' in the communications process. In other words, if they do not happen then no communication takes place. He also found that the form of the message is determined by the process and, significantly here, that the audience will influence the message that is being produced as well as determining what the message means to them.

b. Musical Communication

It can be shown that '*music is a fundamental channel of communication'* (Hargreaves et al, 2005:1). Hargreaves et al examine how, why, what, who and where music is used to communicate and they propose that the link between the performance and the response is the key property of musical communication. After examining Shannon and Weaver's model they suggest that, reflecting developments in cognitive psychology in the 1960s and music psychology in the 1980s, it is important to show feedback between listener and composer/performer. They propose a reciprocal feedback model which attempts to reflect social context, with the aim of applying it to situations where feedback is an important part of the process of music-making (performance and response) such as in music therapy or free improvisation and to '*non-musical'* contexts which were not previously considered, such as music being played in shops, factories and on-hold phone services. The processes of Performance and Response are made up of general features which are said to affect musical communication:

- Musical features: reference system (genres etc), collative variables (complexity, familiarity), prototypicality, context of performance;
- Situations and contexts: social and cultural contexts, everyday situations, presence/absence of others, other ongoing activities;
- Individuals: individual differences, musical knowledge, preference and taste, musical identity, expressive motivations, physiological / cognitive / affective factors.

(Lamont, 2006)

Their model represents an attempt to update an understanding of the communication process of music to incorporate digitisation and popular music, by reflecting the interaction involved in that process. Although based on the traditional linear model of Shannon and Weaver (1948) the incorporation of feedback and a wide range of variables suggests this may be a more flexible and representative approach to understanding the ways in which music communicates. However the model separates

the Situations and Contexts of the Composer/Performer and the Listener whereas it seems likely that there will be many instances where these have some elements in common, giving rise to some form of communication.

Philip Tagg's (1999) model, incorporates ideas on semiotics of popular music and Shannon and Weaver's communication model:

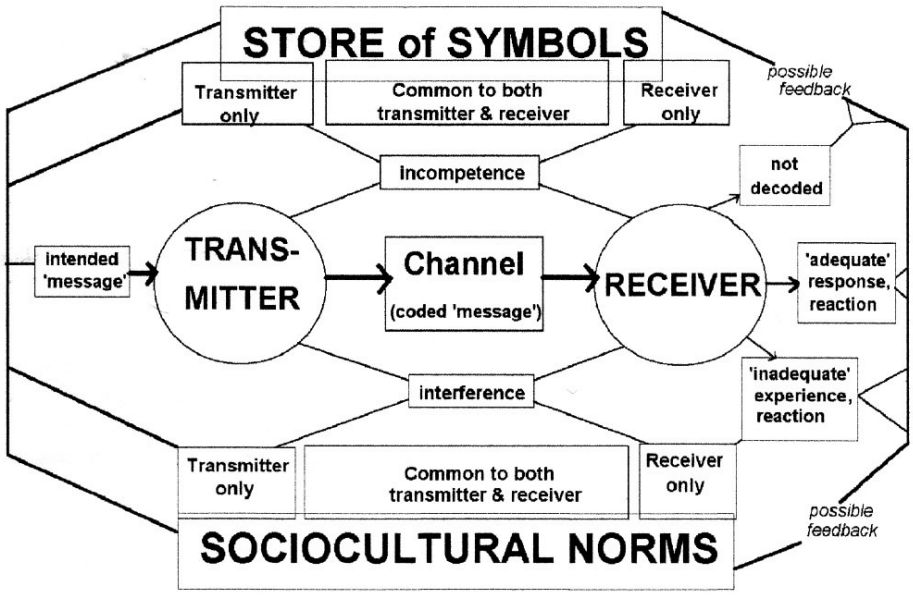


Figure 1 Tagg's communication model copyright © Philip Tagg (Tagg 1999)

In this model the Transmitter is who produces the music, the Receiver is the listener. This very clearly illustrates the potential problems of communication proposed by Shannon and Weaver (1949). Tagg calls these problems 'codal incompetence' and 'codal interference'. Incompetence is caused by the transmitter and the receiver not sharing the same vocabulary of music symbols, and interference is caused when, although they share the vocabulary other values such as taste or cultural influences are brought into play. In other words the decoding does not reflect the encoding, or the signifier does not relate to the signified in the way intended by the communicator. While this model is much more detailed than that of Hall and is designed specifically to discuss the process of musical communication, it suggests the communication is a one-way process. It also suggests that the Receiver does not affect the message except by interpreting it through a store of symbols and sociocultural norms, some of which will be shared with the Transmitter, some of which will be particular to the Receiver. This

idea seems to deny the possibility of, say, performing musicians responding to a live audience, a club dj 'reading the room' when choosing which track to play next, or an interactive website recommending songs to a user based on previous behaviour. Stefani's competences are turned into Tagg's negative-sounding incompetences, implying the message can only be reduced in meaning by the Receiver while Hall's 'positions' are paralleled by 'interference', again implying a reduction in meaning.

v. User Centred Communication Model

Although the Tagg model is a clear summary of the transmission of messages from performer to listener, it is proposed for the purposes of this thesis that a revised version (Figure 2) be considered, which would include a feedback loop:

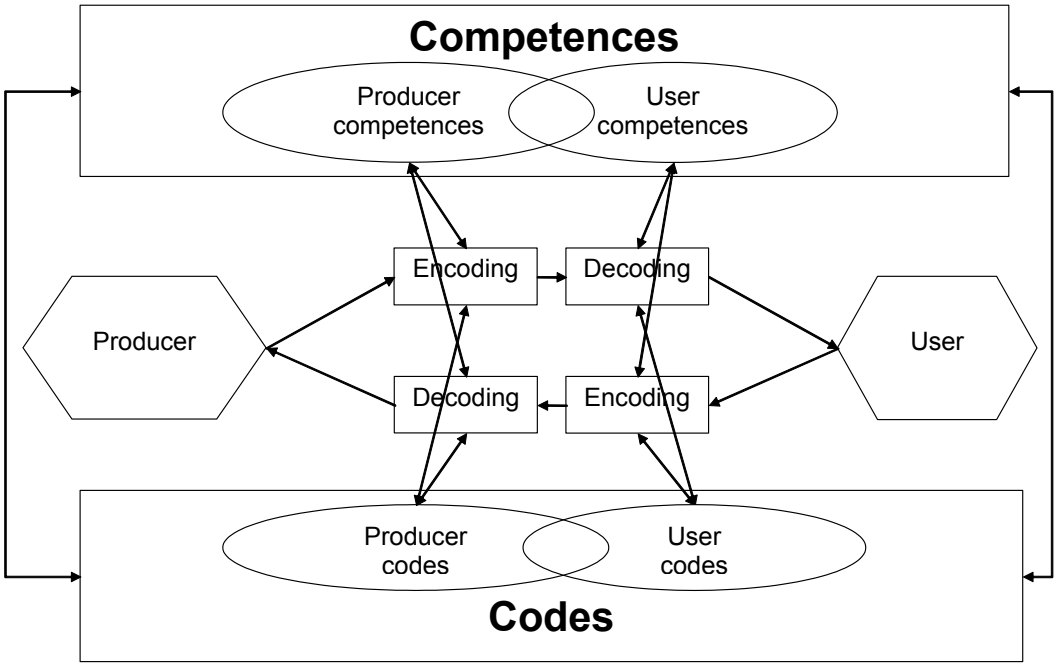


Figure 2 User centred Communication model

In this model the Producer is the individual producing the music, this may be a composer, a performer, or a DJ in a club or on the radio. The User is the individual who hears the music. When the Producer creates a musical event (writes a piece of notation, screams a lyric in a stadium, plays a track in a club) this will be Encoded in a particular way, based on the Producer's Competences and Codes. Here, the Competences are based on, for example, an understanding of music theory, or more generally the *langue* and *parole* of what is within music itself, and are summarised by Middleton's codes

(Table 2), the more specific competences of Stefani or Tagg's Store of Symbols (Figure 1). The Codes are more general cultural and sociocultural codes – as in Tagg's Sociocultural Norms. Competences and Codes are linked together and feed off one another.

The User, who may be a music professional or the eventual audience of the music, will then Decode the music/message by referring to both stores of Competences and Codes. Although it is likely that some of these will be shared with the Producer, it is equally likely that the User will have access to different Competences and Codes, through experience and their own knowledge and resources. This is likely to mean that the Decoding will not exactly match the Coding and the message received by the User will be different that that sent by the Producer.

In many musical situations the User will be able to send feedback to the Producer. Examples of this would be in a rock concert where the crowd can shout, clap, boo in reaction to elements of a performance, in a nightclub where the dancers leave the floor if a particular tune does not move them, or on the internet where listeners to songs on a website can give written feedback to a performer via a messageboard or social networking site.

This feedback is subject to the same Encoding / Decoding process as the initial message, although this time the User is Encoding and the Producer is Decoding. Once again this process is open to problems dependent on whether any of the Producer and User Codes and Competences are shared.

This model acknowledges and focuses on the importance of feedback, noted in Hargreaves et al's (2005) reciprocal feedback model, borrows the structure of Tagg's (1999) model (Figure 1), and incorporates ideas from Hall, Middleton and Stefani, attempting to offer a simplified model of the communication process which reflects the importance of the user in determining the meaning of music.

vi. **Conclusion**

Established music analysis for the purposes of information retrieval is insufficient for large collections of digital files, because it focuses on notation and the Western classical tradition. A technique is required that examines the meaning of sound files to

the listener and incorporates this into the MIR system. Music analysis has informed the development of techniques for content descriptors. The semiotics of music indicate that there is more to the music than its signal, and that context has a strong influence on music's meaning, although, again, established music semiotic analysis continues to concentrate on the content alone. Recent developments in popular music analysis and semiotics show that analysis of codes as well as competences can be incorporated into adapted versions of established communication models to clarify how the meaning of music is generated. This points towards the possibility of developing a formal approach to popular music analysis that can be used to generate information about music which reflect users' interpretations and can be used to develop improved music information retrieval systems.

vii. Next steps

This literature review and the subsequent proposed model contextualise the work of this thesis. In order to test this model in the real world a sample of professional experts in creative music search have been interviewed and observed, and their communications analysed. The next section discusses the Methodology used in this investigation. This is followed by a number of detailed analyses which are related to a comprehensive testing of the model.

3. METHODOLOGY

i. Introduction

The choice of an appropriate research design is informed by five issues: relating the design of the research to the paradigm, how relevant the materials are to the real world, the subject of study, the strategies of inquiry, and the methods of collecting and analysing data (Denzin and Lincoln, 2005:376). Methodology is defined by Wang (1999) as '*a theory of methods that guides the description, explanation, and justification of methods in empirical studies'* (1999:53). This section examines these issues and presents the methodology for this research project. As the research is interpretive it is important that the methodology is sufficiently flexible to enable the investigation to accommodate developments that come out of the process, rather than tying the researcher to a positivist and rigorous procedure (Denzin and Lincoln, 2005). However a clear research design is vital if the work is to successfully achieve its aims and objectives.

This section reproduces the Aims and Objectives, introduces the Scope of the research and examines the approach taken for this investigation, what kind of research was used, the methods of collecting the data, and the range of choice of suitable analysis techniques considered once the data had been collected.

ii. Aims and Objectives

Aims:

1. To use a clear understanding of the issues in IR and MIR to evaluate music industry professionals user needs

2. To develop and test a model which accurately reflects meaning making in MIP search process

3. To offer insights into how systems designed for this type of searching may be improved.

Objectives:

i. To overview the literature relating to MIR and evaluate how it relates to traditional Information Retrieval.

ii. To develop a model out of the literature describing meaning making

iii. To identify music industry professional users of MIR systems and investigate their information needs and behaviour

iv. To evaluate whether the results of their searching meets those needs

v. To investigate music knowledge organisation tools and analyse how they relate to general and other specialist tools and identify and evaluate the various retrieval systems used in music industry MIR

vi. To test the model against findings

vii. To use this information in offering insights into improved MIR systems

iii. **Scope and definition**

This project will investigate UK-based music industry professional users of Western commercial polyphonic music in the commercial sector between 2006 and 2010 (this is discussed in more detail in Chapter 3,vi,a).

iv. **Relating the design of the research to the paradigm**

This investigation plans to elicit rich and detailed information about how a range of professionals within the population of the music industry search for music for work use and apply these findings to the communications model derived from the literature. Identifying a sample of participants and collecting data from them and analysed would contribute to an evaluation of whether their needs were being met by their searching. Identifying and evaluating the tools used by the participants would lead to insights into communication and meaning making practices within this community. These insights would then be used to test the communications model and to make recommendations in proposing an 'ideal' MIR system.

The research is framed by a constructivist-interpretive paradigm. It assumes that each person has their own version of reality and is therefore relativist. Because there is

contact between the researcher and the participants, leading to them sharing understandings, there is a subjectivist epistemology, and the methodology is set in the real world by means of interviews, observation and document analysis so procedure is naturalistic (Denzin and Lincoln 2005:24), acknowledging the importance of context. It is appropriate, given these criteria, that in order to meet the objectives, qualitative research will be used to generate suitable findings. Rather than the positivist criteria of internal and external validity, reliability and objectivity it is suggested that credibility, transferability, dependability and confirmability are used to judge this type of research (Denzin and Lincoln, 2005). Lincoln and Guba (1985) discuss the analogous nature of these terms, linking internal validity with credibility, external validity with transferability, reliability with dependability, and objectivity with confirmability. Credibility can only be determined by the participants themselves, transferability relates to how generalisable results are, dependability relates to the extent to which the research may be repeatable, and confirmability is linked to the ability of others to confirm the work done. Although these criteria are somewhat similar to established criteria for judging quantitative research, they do reflect the different nature of this type of approach, accommodating different methods of data collection and analysis. As the bulk of this work involves the collection and analysis of interviews from a sample of participants it is suitable and appropriate that it is judged using qualitative criteria. In the pursuit of this, results have been regularly fed back to participants (credibility), presentations have been given in a range of forums (transferability), the changing research context has been discussed in detail (dependability) and large interview extracts and other examples of analyses are presented in the appendices (confirmability).

In the pursuit of Objective 5 the analysis of the data from Objectives 3 and 4 helped to determine which systems to investigate, while the an element of the evaluation of those systems followed a more positivist approach involving some quantitative analysis.

A combination of qualitative and quantitative research methods was therefore used for this investigation. This reflects the approach by, for example, Dervin, whose sense-making approach attempts to '*bridge the gap between metatheory and methods'* (Wang, 1999).

The characteristics of qualitative research are examined by Flick et al (2004). They find these to include: a range of methods which are chosen for their appropriateness; a focus on the everyday; acknowledging the importance of context and the views of the participants (both the researchers and the subjects); the researcher being open, reflective and using understanding; starting with case analysis, constructing reality. They conclude by stating that qualitative research is textual and its goals are to discover and form theory (Flick et al 2004:9), while Cresswell (1998) defines qualitative research as:

> *"an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem. The researcher builds a complex, holistic picture, analyses words, reports detailed views of informants, and conducts the study in a natural setting." (1998:15)*

Although research in information retrieval systems has traditionally focussed on evaluation of results there has been important research into user needs and behaviour especially since the 1980s. Wilson (1981) brought various methods and approaches together calling for clearer foundations and concepts (Bawden 2006). This turn to user-centred research led to key models such as Belkin's (1982) anomalous state of knowledge, Dervin and Nilan's (1986) Sense-Making, Ellis' (1989) information seeking process further developed by Kuhlthau (1991) and Wilson's (1999) problem solving model, amongst others. It is proposed by Ingwersen and Jarvelin (2005) that both user and system research are essential to reach a holistic understanding of information retrieval systems.

Rather than focus directly and initially on the accuracy of information retrieval systems, this investigation is initially concerned with the ways in which the users of existing systems of any kind communicate their meaning and meet their information needs. Using the holistic approach of Ingwersen and Jarvelin (2005) it is suggested that the cognitive processes of the users and their context are as important to successfully meeting information needs as are the technical aspects of the information system they use (Tenopir 2003). Insights into these cognitive processes are more readily generated by qualitative research, such as interviews, and these techniques are incorporated in the design of this research methodology.

Since the early 1990s there has been a rise in the amount of qualitative research in information retrieval (Fidel, 1993). In her review, Fidel agrees with Flick et al (2004), summarising the typical characteristics of qualitative research as being:

> *"noncontrolling, holistic and case-oriented, about processes, open and flexible, diverse in methods, humanistic, inductive and scientific" (Fidel, 1993:219),*

concluding that it is therefore an appropriate avenue when taking an exploratory approach. As exploration, therefore, there is a variety of *diverse methods* for triangulation in encouraging the people under investigation to reveal their thoughts and behaviours, including interviews, observation, diary-keeping, and other texts generated by the population under investigation, such as web-based bulletin boards and query logs. Fidel discussed how these methods are designed to be as '*non-controlling*' as possible, and that attempts are made to generate them without researcher bias. The '*holistic and case-oriented*' nature of qualitative research is difficult to control. Although the researcher is taking a view of the whole process under investigation, it must be understood that the context of the study will affect the generalisability of the results. In her review, Fidel notes that much IR research has looked at the search process and user behaviour and notes that an '*open and flexible approach'* is not always easy to take, either because of extensive prior knowledge or reluctance to break away from an established strategy. However she also notes numerous examples of researchers changing direction when the results indicate a new approach is required. This may include noting down interview comments instead of tape-recording them when subjects are intimidated by the recording devices and/or procedure – or batteries run out during an interview. Fidel also notes the importance of acknowledging the effect the researcher will have on the respondent. A non-judgemental, respectful and empathic relationship is encouraged. She describes the importance of an inductive approach and how this must be discussed in detail by the researcher. The value of qualitative research is that it may be used to generate theory rather than test it, and it is in both the data collection and the analysis that the theory is generated. This issue will be discussed further in a section on Grounded Theory. Finally Fidel discusses how qualitative research is recorded at a particular moment. This means it is not replicable. She refers to the elements of credibility, transferability, dependability and confirmability discussed above. Key

researchers in this area are noted by Fidel as including Dervin, Ellis, Hjorland, Ingwersen, Kuhlthau and Wilson, amongst many others.

Wang's (1999) review of methodologies in user behavioural research updates this view. This indicates a continuing uptake of qualitative research in information retrieval in the 1990s, particularly in the stated focus area in this research of user behaviour. His literature review examines the positivist paradigm, which focuses on theory-testing and does not account for human behaviour. Criticism of this led to a gradual acceptance of an alternative paradigm, variously described as naturalistic, qualitative or, more specifically, sense-making or ethnographic. He argues that one of the key aspects of this alternative paradigm is that human behaviour should be investigated and interpreted within its context. Neither paradigm is 'better' than the other and only a combination of the two can generate a holistic or complete picture of human behaviour in context. The choice of paradigm determines the methodology, although it is possible to combine elements from each (Goulding, 2002, Wang 1999). Wang discusses the various methods used in observing behaviour and subsequent data analysis, summarised below (Table 3):

Research area	Research methods
Information needs and uses	Surveys, interviews, experiments observations in natural settings
Information seeking	Surveys, interviews, experiments observations in natural settings
Relevance judgements	Interviews, experiments, observations in natural settings
Online searching	Experiments, observations in natural settings
Human-system interactions	Experiments
Reference transactions	Experiments

Table 3 Research areas in user behaviour and associated research methods (derived from Wang, 1999:83)

It should be noted that many research publications do not report their methods of research or design in detail, and Wang (1999) calls for more disclosure from the community in this respect.

As a holistic view was to be taken then the retrieval systems were also investigated. Originally it was planned that the testing of these systems would involve traditional quantitative evaluation measures such as precision and recall. This would reflect Wang's (1999) observation that experiments may be used to test hypotheses

which may come out of the qualitative research. The complementary natures of qualitative and quantitative research (Fidel, 1993) would therefore be illustrated. However it was suggested from the qualitative data that precision and recall were not relevant metrics in this environment. People looking for music for work purposes measure the value of the results generated by their systems (which may be systems made of a combination of people and computers, or just software systems) in different ways. It would then be irrelevant to test these systems using these established measures. Therefore a decision on the evaluations was made during the research process rather than imposing a method at an early stage. This is discussed and explained in more detail in Section 7.

The music information retrieval (MIR) community has followed a similar path to that of the text retrieval generation, although it is a more recent development. Understandably, the focus of much early MIR research was on developing tools to analyse music signals and extract features which could then be used to classify digital music files for retrieval. This tradition continues, with the bulk of papers at the annual International Conference on Music Information Retrieval (ISMIR) investigating and developing algorithms for signal and notation analysis. Some of these systems are tested using a developing formal test bed, known as MIREX, which is similar to the text test bed, TREC. (These evaluations are discussed in more detail in Chapter 7.iii). Alongside this technical research there have been more recent developments in user studies initiated by Futrelle and Downie (2002) and reinforced by the recent rapid growth in social networking and recommender systems such as last.fm. This has led to a growing recognition that research into users can be used to inform better systems development. Key research into users in MIR has been done by Cunningham (2002), Downie (2002), Bainbridge (2003) and Lee (2007) amongst others. Some of this research has used surveys to investigate large populations of recreational users, while others interview users, and examine rich web queries and subjects 'music discovery' diaries. This range of methods conforms to the 'researcher-as-bricoleur' approach recommended by Denzin and Lincoln (2005) where the qualitative researcher uses elements and techniques from a wide range of methodologies to design research which is suitable for it to fulfil its aims and objectives, the methods being determined by the investigation (Fidel 1993).

A qualitative approach has been shown to be an appropriate method in investigating user needs and behaviour in information retrieval systems, both textual and with music. This research continues in this developing tradition, by focussing on user communication and needs and frames the research within a holistic view.

v. The strategies of inquiry

There are various types of strategies of inquiry, including ethnomethodology, case studies, and grounded theory amongst others. The choice of the strategy of inquiry '*connects the researcher to specific methods of collecting and analyzing empirical materials'* (Denzin and Lincoln, 2005:25). There is current acknowledgement in the MIR research community of the value of grounded theory, which is now discussed in relation to the current study. It is also felt by the researcher that there is value in considering an alternative approach such as Discourse Analysis as an analysis technique for reasons discussed below. Other approaches may be considered to be appropriate, such as Work Domain Analysis or Task Analysis. These approaches have been found to be influential in human computer interaction research and website design. It is recommended (Creswell, 1998) that in choosing a research design the researcher consider the options for a methodology, and that reviewing and evaluating two approaches will allow the researcher to make a better selection between methods. A discussion follows examining the benefits and failings of Grounded Theory and Discourse Analysis within the context of IR and MIR research and relating these to the aims and objectives of this project.

a. Grounded Theory

Grounded theory (GT) was introduced in the 1960s by Glaser and Strauss (1967) who proposed '*the discovery of theory from data'* (1967:1). This method, influenced by the ideas of symbolic interactionism and used by its originators in nursing research, requires the researcher to collect data, reflect upon it and devise categories for the data. Then more research is done to reinforce these categories as well as find and examine their meaning while considering links between the categories and to how they may relate to theory. The links are then tested in the field and theory is gradually generated (Walliman 2005:308). This approach has been criticised by one of its own creators for moving towards the mainstream after a split in the team led to Strauss and a new

colleague refining and further systemising the method (Hildenbrand 2004). However it has been widely used within qualitative research including in MIR. GT is particularly useful when looking at process and context, is interpretive, rigorous and systematic (Rodon & Pastor, 2007).

Mansourian (2006) discusses this method and its use in Library and Information Studies (LIS) research. He notes that the benefit of GT is that it generates theory inductively, enabling an understanding of the data, while the theory generated may subsequently be compared and tested against existing theories. There are two approaches – the original Glaser and Strauss method, derived in 1967 (Glaser & Strauss, 1967) and, after a split, a revision developed by Strauss and Corbin in 1990 (Strauss & Corbin, 1998). Although the difference between these methods is more in the detail, Glaser argued that Strauss' method was valuable but no longer GT, while Strauss felt Glaser's approach placed too much emphasis on induction (Mansourian, 2006). In the light of this, Heath and Cowley (2004) suggest that new researchers should use the approach with which they feel most comfortable.

Glaser and Strauss (1967) discuss the importance of generating theory using *comparative analysis*, examining a number of social groups and establishing similarities and differences between them to generate theory which is grounded in the data. Theory derived in this way will initially be substantive but formal theory may also be generated by widening the groups under investigation. They state that by closely examining data while it is being collected, low level *categories,* or conceptual elements of theory, are generated and coded using either Glaser's *substantive coding* or Strauss' *open coding* (these methods are noted by Mansourian (2006) to be almost identical). Higher level *properties*, elements of categories, emerge as research (collecting, coding and analysis) develops, and are coded by Glaser's *theoretical coding* or Strauss' *axial* and *selective coding)*. Glaser and Strauss state how important it is to use emergent themes rather than existing ones, as they are more relevant and fit the data more accurately. Categories should be diverse and will be found to exist at many levels. Hypotheses will emerge from comparisons between groups. The importance of joint collection, coding and analysis is stressed because this reflexive approach enables a continuous comparison which most accurately reflects the data under investigation. The benefit of coding is that it makes the data more manageable and helps identify categories (Mansourian, 2006).

Because the data generates ideas, Glaser and Strauss recommend the researcher does *theoretical sampling*, whereby the groups under investigation also emerge from the data and should not be rigidly prescribed before going into the field. The idea of performing research without preconceptions is extremely important in GT and although it is acknowledged that researchers will often have prior knowledge of their field they should try come to the research with a clear mind and take an open and flexible approach to their work. Theoretical sampling ensures that data collection is '*systematic, relevant and impersonal'* (Glaser and Strauss 1967:47), and groups chosen must have theoretical relevance. They state that the wider the selection, the more generalisable the theory will be. They go on to explain that the reason for choosing groups is that this approach enables the researcher to establish similarities and differences between the groups, helping to discover categories and develop properties. The research should stop naturally, when the data being collected is saturated and no new categories or properties are being generated. This differs from random sampling, which continues until the planned sample has been investigated, whether or not it has reached saturation. The depth of data collection will change as collection takes place. Initially they state that a full approach to collection should be taken, in order to generate categories, then collection can be more selective as categories emerge, thus reducing what could be a 'mass of data'. The simultaneous collection, coding and analysis will also mean that sampling is ongoing.

Glaser and Strauss also stress the importance of *constant comparative analysis*. They recommend that the researcher *'code each incident in the data into as many categories of analysis as possible, as categories emerge or as data emerge'* (1967:105) and that each incident should be compared to previous incidents which are in the same category, thus generating theoretical properties of the category. They strongly recommend the keeping of memos, unstructured notes of ideas made by the researcher at any time, whether collecting, analysing or reflecting. These should be as fresh as possible and will help the researcher conceptualise the data (Mansourian, 2006). Strauss and Corbin (1998:221-3) recommend they should be as detailed as possible to avoid confusion and offer a range of 14 criteria including *dating* and *referencing*.

Allan (2003) describes the process of coding in GT as a type of content analysis, which is used *'to find and conceptualise the underlying issues amongst the 'noise' of*

the data' (2003:1). In Allan's analysis, *codes* arise when interviewees repeatedly discuss important issues. Each small collection of words may generate more than one code. The smaller the collection of words, the more time consuming the process is. This led to one of the disagreements between Glaser and Strauss, where Glaser felt that Strauss' method led to 'over-conceptualisation' (Allan, 2003:2). Glaser's approach recommended identifying points, which are coded. These are examined for higher-order relationships which are known as *concepts*. These are further compared as data builds up, leading to *categories*, which are broader than concepts.

The next step is *theoretical* or *axial coding* where the concepts are examined for relationships between them to form a theoretical framework, which is used to guide subsequent collection of data (Pace, 2003:338). As collection and analysis develop a core category is identified which allows the researcher to code *selectively*

Constant comparison will allow integration of categories and properties and theory will 'solidify'. Finally, when data is saturated, the memos should be collated for writing up the theory. Sorting the memos links the memo writing with theory writing, where the researcher sorts memos conceptually and allows integration of relevant concepts to write the theory in a readable format which distils the detailed data into a publication which successfully contributes to knowledge (Mansourian, 2006).

GT has been used in LIS since the 1980s. Ellis (1989) used it in his influential research into information seeking which gave rise to his Information Seeking Process model. He used theoretical sampling, ensuring he took a flexible approach to data collection, and followed the Glaser and Strauss coding recommendations. This approach eventually gave rise to the information seeking patterns: starting, chaining, browsing, differentiating, monitoring and extracting (Ellis, 1989:174). Mansourian (2006) and Seldén (2005) report that numerous information seeking and behaviour studies, particularly from University of Sheffield, have used the GT approach since then. GT has also been used in systems evaluation, as reported by Allan (2003), Jones and Hughes (2001), Bryant (2002), web users (Pace, 2003; Mansourian and Ford, 2007), collaborative information seeking (Prekop, 2002), information systems implementation (Rodon and Pastor, 2007), exploring the decision-making process of IT managers (Rowlands, 2005), as well as consumer behaviour (Goulding, 1998), information seeking and use by journalists (Attfield and Dowell, 2002) and young people (Shenton,

2004a, 2004b), information systems and creativity (Eaglestone et al, 2006) and, more recently, in a study to test Ellis' ISP model (Bronstein, 2007).

There are problems with GT, however, despite its apparent methodological clarity and simplicity. These are discussed by Seldén (2005), who focuses on prior knowledge and theory generation as major issues. He feels that concepts do not arise from the data but from within the researcher, and that it is unrealistic and almost unprofessional to unlearn pre-existing knowledge in an attempt to adhere to Glaser and Strauss' approach. He also argues that the coding process is laborious and over-meticulous, and removes the data from its context, especially when using computer software for this activity. Allan (2003) found this problem arose during his research so he revised his approach to Glaser's, identifying key points rather than key words, reducing the 'over-conceptualisation' (Allan, 2003:2). Seldén's final problem is that *'Data do not generate theory. The researcher generates theory'* (2005:127). He argues that if new theory is to be generated then prior knowledge is vital to avoid repetition of previous work, and that collecting trivial information may distract from developing higher level theories. There are some ways of compensating for these issues. Allan (2003) recommends the use of very open questions in interviews to reduce the bias caused by prior knowledge which may guide the interviewee if direct questioning is used. Mansourian (2006) challenges Seldén's problem with the researcher generating theory rather than the data by recommending a very close adherence to GT methods. He states that this will lead to concepts and categories arising from the data and lead to theory building (2006:398).

The rigour of GT is discussed in depth by Hall and Callery (2001) who note that Glaser and Strauss differ in their criteria for rigour. They identify Glaser's criteria as: *'fit, work, relevance, modifiability, parsimony, and scope'* (2001:259) while Strauss and Corbin are noted as recommending *'plausibility, reproducibility, generalizability, concept generation, systematic conceptual relationships, density, variation, and the presence of process and broader conditions'* (2001:259), leading to their observation that the relation between researcher and interviewee must be considered as it will have an effect on the data being derived from the interview process both in its collection and in its analysis.

While the bulk of MIR research takes a systems approach there has been a slow growth in user studies. Some of these are quantitative, relying on content analysis of queries and surveys (Lee et al, 2007; Downie and Cunningham, 2002) but there has been a regular use of the approach by a small number of influential researchers (Cunningham et al 2003, 2004, 2005, 2006, 2007; Bainbridge et al 2003; Laplante and Downie, 2006) indicating that GT is recognised as being a valid methodology in MIR user research.

b. Discourse Analysis

An alternative method of analysing interviews and texts and natural speech is Discourse Analysis (DA). While the roots of DA are in speech act theory and psychology it has developed into a useful tool in psychology and sociology as a way of investigating talk and texts as social practices (Potter and Wetherell, 1994). The use of DA aids the discovery of various, often conflicting 'interpretive repertoires' (or discourses) which are held by interviewees and, by extension, by the social world of which they are a part. Potter (2004) discusses three key factors in DA: anti-realism, constructionism, and reflexivity. Discourses present different versions of reality, DA examines 'participants' constructions' and constantly examines and discusses itself and its relationship with the results of its research (Potter, 2004:202). Silverman (2006) discusses three main concepts used in DA: interpretive repertoires, stake, and scripts. Examining interviews, DA researchers find vocabularies rather than factual information about practices. These vocabularies may be linked to different interpretive repertoires, which can signal the existence of how different world views may exist and even be held by the same people in different contexts.

There have been recent developments in DA leading to a gradual shift from interpretive repertoires to stakes and scripts. If someone has a stake in something it will affect their motives. Identifying stakes will allow deeper understanding of social practice. Scripts exist when subjects describe events by highlighting their routine nature in order to indicate whether or not they are normal (Silverman, 2006:231).

DA has been used in LIS research as an alternative way of discovering macro level information about discourses within the field. Frohmann (1992, 1994) examines LIS at an epistemological level using DA, revealing discursive strategies in the

cognitive viewpoint (1992) and in LIS theory (1994). He notes that Foucault recommends that the use of DA is useful in studying disciplines that do not have a sophisticated epistemological profile, such as psychology (1992:368), and discusses how the lack of theory development in LIS lends it to this type of analysis. His conclusions relate knowledge and power to the discourses revealed by the analysis. Although he does not detail his methodology, he does note that DA is multidisciplinary and contextualises data (1994:119). It also allows the use of data which has been collected both formally and informally. Texts which may be analysed are often derived from technical literature and other existing '*serious speech acts*' (1994:120). An example of his rationale behind the value of DA in investigating, say, information users, is that user groups are not formed naturally or are not 'given' but are determined by social and institutional forces and that it is only a macro level analysis that will reveal valid and reliable information.

Budd and Raber (1996) also investigated discourses in LIS, focusing on uses of the word 'information' within the discipline. They recommend the textual analysis of units larger than the word or even the sentence. As '*the communication process is central to discourse analysis*' (1996:218) it is appropriate to use it in the study of LIS theory, which is also about communication. They go into more detail about their approach, linking its history to de Saussure's *langue* and *parole* (1996:219). They note how, as discourse is about form and function and is ultimately social, then it is in the analysis of both text and context that function may be revealed. This is reinforced by Walliman (2005) who describes how semiotic analysis is too simplistic for analysis of discourse, because language is more than signs, it is a social construct and '*helps create and recreate it*' (2005:124). He goes on to say that DA analysis considers both contextual (function) and rhetorical (form) organisation of texts. The link between semiotics and DA is reinforced by Parker (2004), discussing how the semiotics of de Saussure and Barthes increasingly acknowledged the importance of links between ideas ('connotation' and 'myth') (2004:310).

Additionally Parker offers a rare step-by-step description of the general DA process. This is not often found. Researchers in the area are reluctant to systemise due to the nature of DA; Potter (2004) discusses how it is more important to have an '*analytic mentality*' (2004:204) than to follow specific guidelines. He states that the

validity of the approach is to be found in its results more than in its methods, by comparison to other research, by focussing on out-of-the-ordinary cases and by allowing readers to make their own analyses by presenting transcripts alongside interpretations. However Parker's guide provides an invaluable summary:

> *"(1) turn the text into written form, if it is not already; (2) free associate to varieties of meaning as a way of accessing cultural networks, and note these down; (3) systematically itemize the objects, usually marked by nouns, in the text or selected portion of text; (4) maintain a distance from the text by treating the text itself as the object of the study rather than what it seems to 'refer' to; (5) systematically itemize the 'subjects' – characters, persona, role positions – specified in the text; (6) reconstruct presupposed rights and responsibilities of 'subjects' specified in the text; (7) map the networks of relationships into patterns. These patterns in language are 'discourses', and can then be located in relations of ideology, power and institutions." (2004:310)*

It is more frequent to find detailed accounts of what was actually done during a research project. An early authoritative example is Potter and Wetherell's (1994) investigation where they examined a TV documentary on cancer death, interviewing people involved and examining written documents relating to the programme. They used a list of keywords relating to their study and searched for them using a word processor, analysing the text around a keyword for themes. They then revised their transcripts of the coded sections more fully and listened again to their recordings to check interpretations. They then analysed their text using '*five types of analytic consideration*' (1994:55):

> *'1 using variation as a lever; 2 reading the detail; 3 looking for rhetorical organization; 4 looking for accountability; 5 cross-referencing discourse studies' (1994:55)*

It is therefore important that the transcript accurately reflects what was said during the interview, within time and budgetary contraints and while it is recommended that Gail Jefferson's transcript system is used, (including length of pauses, overlaps etc) it is accepted that it will not always be possible to go to these lengths for practical reasons (Hepburn and Potter, 2004).

It is important to note that there may be shortcomings in analysing text and talk. These are summarised by Antaki et al (2003):

> *'(1) under-analysis through summary; (2) under-analysis through taking sides; (3) under-analysis through over-quotation or through isolated quotation; (4) the circular identification of discourses and mental constructs; (5) false survey; and (6) analysis that consists in simply spotting features.' (2003:6)*

These failures indicate that DA is not a simple process and should not be entered into lightly. However, along with grounded theory, discourse analysis is an increasingly popular approach in LIS, particularly in the area of information seeking. While a key ideal of GT is that prior knowledge is suspended during investigation and analysis, this is not a priority for DA. For example, in her study of information practices, Nahl (2007) codes interview texts according to pre-determined domains based on existing theory, and McKenzie (2003) investigates information practices within existing information seeking models. Other examples include Haider and Bawden's (2007) investigation of 'discursive procedures' in information poverty in LIS literature, Savolainen's (2004) research into internet information seeking and Mancini and Buckingham Shum's (2006) sensemaking research amongst others. Notably, it is suggested that analysis of discourses can provide valuable information for systems designers, as incorporating discourses in systems will more accurately reflect user needs and behaviour (Savolainen, 2004; Mancini and Buckingham Shum, 2006).

Other research relating to this particular project is by Talja (1999, 2001) who investigated music libraries and their users using DA. She interviewed a range of music library users, music professionals and music librarians, and examined official textual publications relating to music and music libraries, finding that rather than individuals holding consistent beliefs, they follow differing discourses simultaneously. This indicated that there are cultural beliefs rather than individual ones, enabling interpretation of results at a 'macrosociological' level (Talja, 1999). The value of this being that

> *'it concentrates on the analysis of knowledge formations, which organize institutional practices and societal reality on a large scale' (Talja, 1999:2).*

When analysing textual material she found users held simultaneous different beliefs, and held that researchers using other methods of analysis would try to reconcile these to force consistency on the data. As interview talk is *'reflexive, theoretical, contextual and textual'* (Talja, 1999:6) it is interpretive and therefore discusses various different discourses or interpretive repertoires. She analyses interview texts looking for consistency and variation and then allocating these to interpretive repertoires – higher level concepts which link interview texts across a sample. Talja identifies three phases when seeking patterns:

> *'(1) ... analysis of inconsistencies and internal contradictions in the answers of one participant; (2) ... identification of regular patterns in various accounts and (3) ... identifying basic assumptions and starting points which underlie a particular way of talking about a phenomenon' (Talja, 1999:8)*

These phases give rise to a set of interpretive repertoires which provide insight into the starting points of the way people talk about things and can be used to gain a deeper understanding of how social systems work. Although a triangulation approach is taken, triangulation is contextual rather than methodological (Talja, 1999:14) so official and other texts are compared to interviews to evaluate the consistency of interpretive repertoires. These comparisons are then widened to include other official less directly related texts to establish the extent of generalisability. It is suggested that the discovery of interpretive repertoires will also inform how organisations and systems are organised (Talja, 1999:15) and, by extension, it is possible to suggest that systems that reflect interpretive repertoires will successfully reflect the world they are designed to serve.

vi. **Choice of method**

It is suggested from the above that both approaches are valid in terms of generating data that answers the research question: *how do people in the music industry communicate meaning and meet their information needs?* An analysis of the pros and cons of the two approaches follows.

GT: Pros: The use of grounded theory is established within the IR and MIR disciplines particularly in user studies. Theoretical sampling will help generate a selection of interviewees which is flexible, not biased and that provide rich and detailed

data. Interviews are an established way of developing grounded theory. Close textual analysis of interviews will generate higher level concepts which should give rise to theory which is directly linked to the data. The process is systematic, rigorous, reliable and valid.

GT: Cons: The need for a suspension of prior knowledge may cause problems leading to theory coming from the researcher rather than from the data. It cannot be used across the whole planned research (ie to evaluate systems) and cannot exclusively be used to achieve all the aims and objectives due to the researcher's pre-existing knowledge and the need to evaluate existing systems using established procedures.

DA: Pros: There is some very current use of this method in user studies and systems design, although to date there is little literature directly relating to MIR. Interviews have been widely used in this method. Higher level concepts are generated by the data. There is no need for prior knowledge to be suspended. It is interdisciplinary and particularly useful for disciplines with low epistemological foundations. It can be used for secondary text sources as well as primary data and for systems evaluation. All stated aims and objectives are achievable

DA: Cons: There is not an established systematic approach to follow. There is a smaller base of existing literature.

Because a rigorous approach to GT requires either a lack of or a suspension of prior knowledge, and because, to some extent, the research involves testing a theory drawn from a synthesis of the literature, it was felt appropriate to choose discourse analysis as method for the stated research, although some ideas, such as theoretical sampling, were taken from grounded theory, and other approaches were also used during the process where appropriate. When they arise these approaches are discussed in detail in the text.

vii. Collecting the data

a. Sample / scope

If this research is to successfully investigate how music industry professionals communicate meaning and meet their information needs then the scope (presented in Chapter 3,ii,iii) must be clearly defined: this project investigates UK-based music industry professional users of Western commercial polyphonic music in the commercial sector between 2006 and 2010. Therefore, although the music industry is global, it would be outside the scope of the research to investigate the needs of music professionals in, for example, USA or continental Europe. It is hoped, however, that further research will be done in these areas to establish whether or not any of these findings are generalisable across international cultural divides. The population being investigated is the UK music sector.

A breakdown of the music industry was derived from British Phonographic Industry literature (BPI 2006) which showed the industry comprises two key areas: Owners (Artists, Record Companies, Music Publishers) on one side and Consumers (Recreational users) on the other. An added layer is found between these two sides, informed by the researcher's extensive experience working in the commercial music industry. This layer comprises organisations which filter the music, which has already been produced, in various ways before it reaches the Consumer. It includes, for example, advertising agencies, film companies, broadcasters and other media, live performance and internet. All of these businesses have a function in common. They source music from the Owners *on behalf of* a range of Consumers. In other words they are choosing music from large collections not primarily for their own enjoyment but for work purposes, specifically for them to exploit and for others to consume. The web of relationships between Users and Owners is illustrated in Figure 3, below. This research investigates the communication process between this layer of Users, and the Owners. It is felt that because the User is searching for music on others' behalf it is likely there are different constraints, behaviours, codes, competencies and interpretive repertoires than when Consumers are searching for music for personal use, and that these will impact on information behaviour.

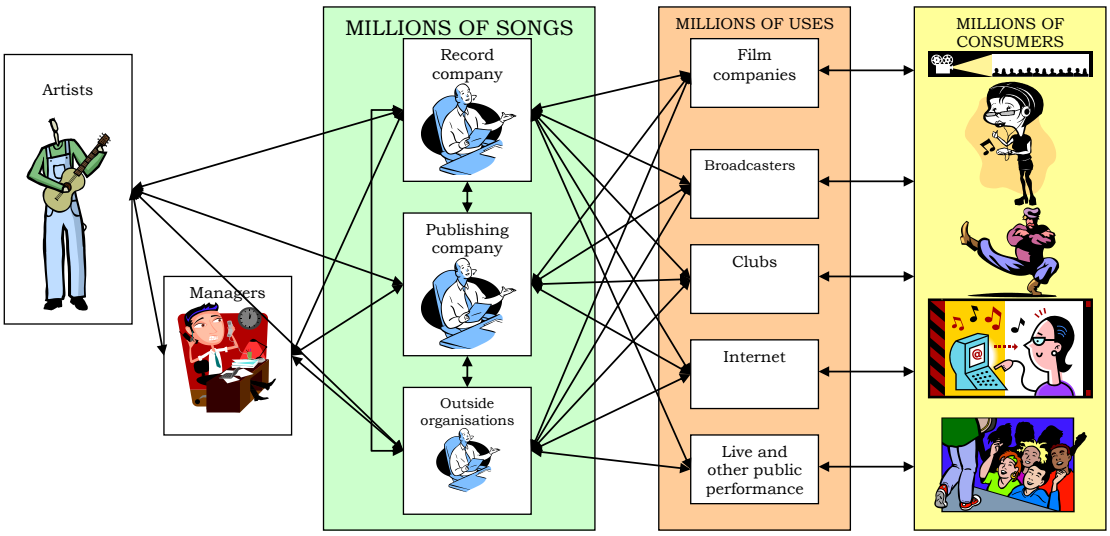


Figure 3 Web of relationships

Turning once again to the generic 'record company structure' offered by the BPI (Figure 4) it can be seen that there is a further layer, designed to get music from the Producer to the Consumer, concentrating on manufacturing and distribution. This layer will not be investigated in this research. These organisations are not creatively choosing music on behalf of others. They are employed by Producers and focus on getting physical product from the Producers to the Consumers.

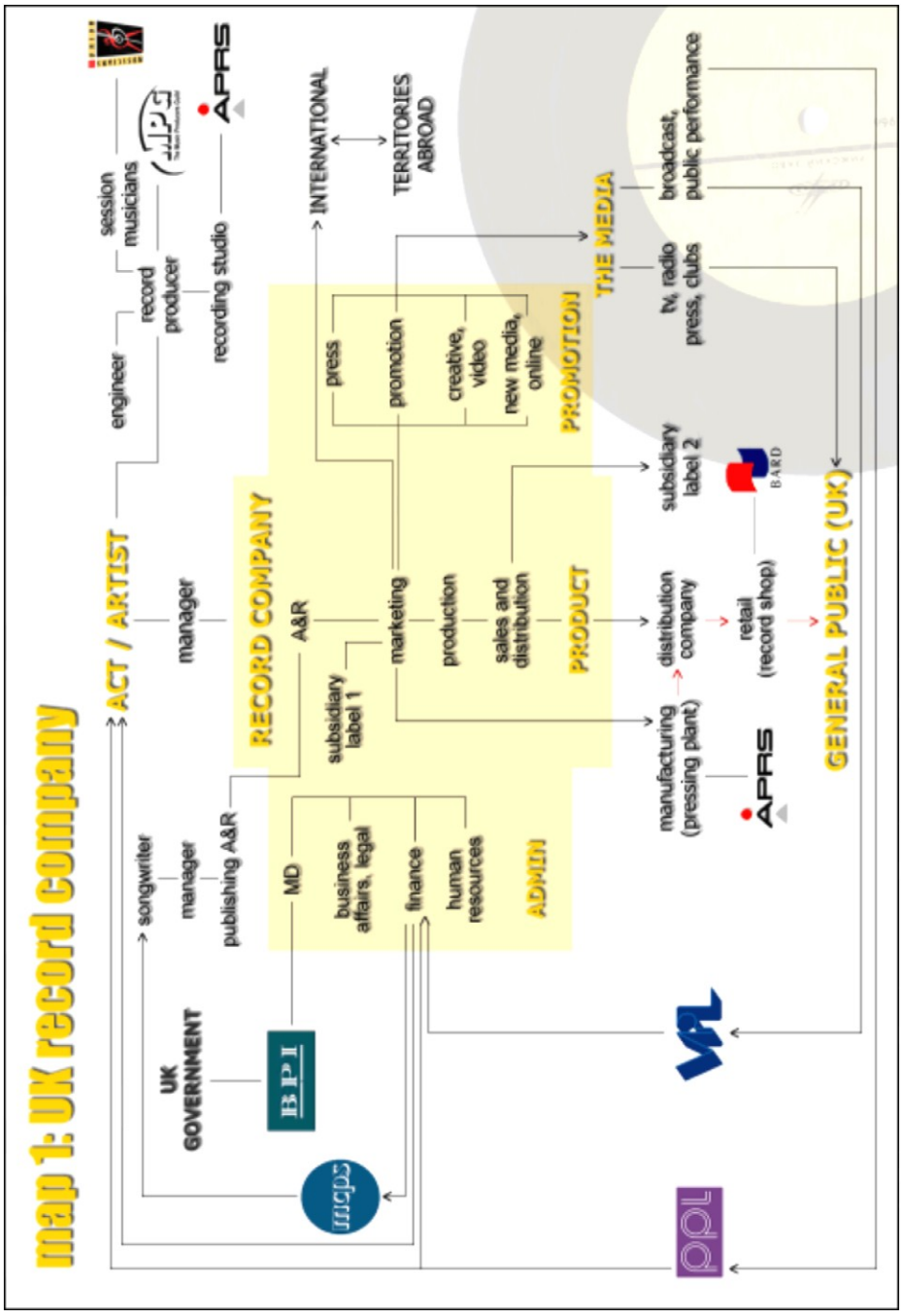


Figure 4 UK Record Company (BPI 2006)

In the BPI's UK Music Publisher model (Figure 5) it can be seen that the music consumed by the Consumers is filtered by broadcasters, live performance, film use etc.. It is therefore key to the success of this research to find the people directly involved in this process that deal specifically with searching for music in large collections, either making queries, as Users, or interpreting queries on the Owner side. Although this seems to be similar to the established librarian / user relationship it is possible there are differences caused by the commercial nature of this relationship and also by the fact that

music is being chosen on behalf of an audience. This should be revealed in interpretive repertoires.

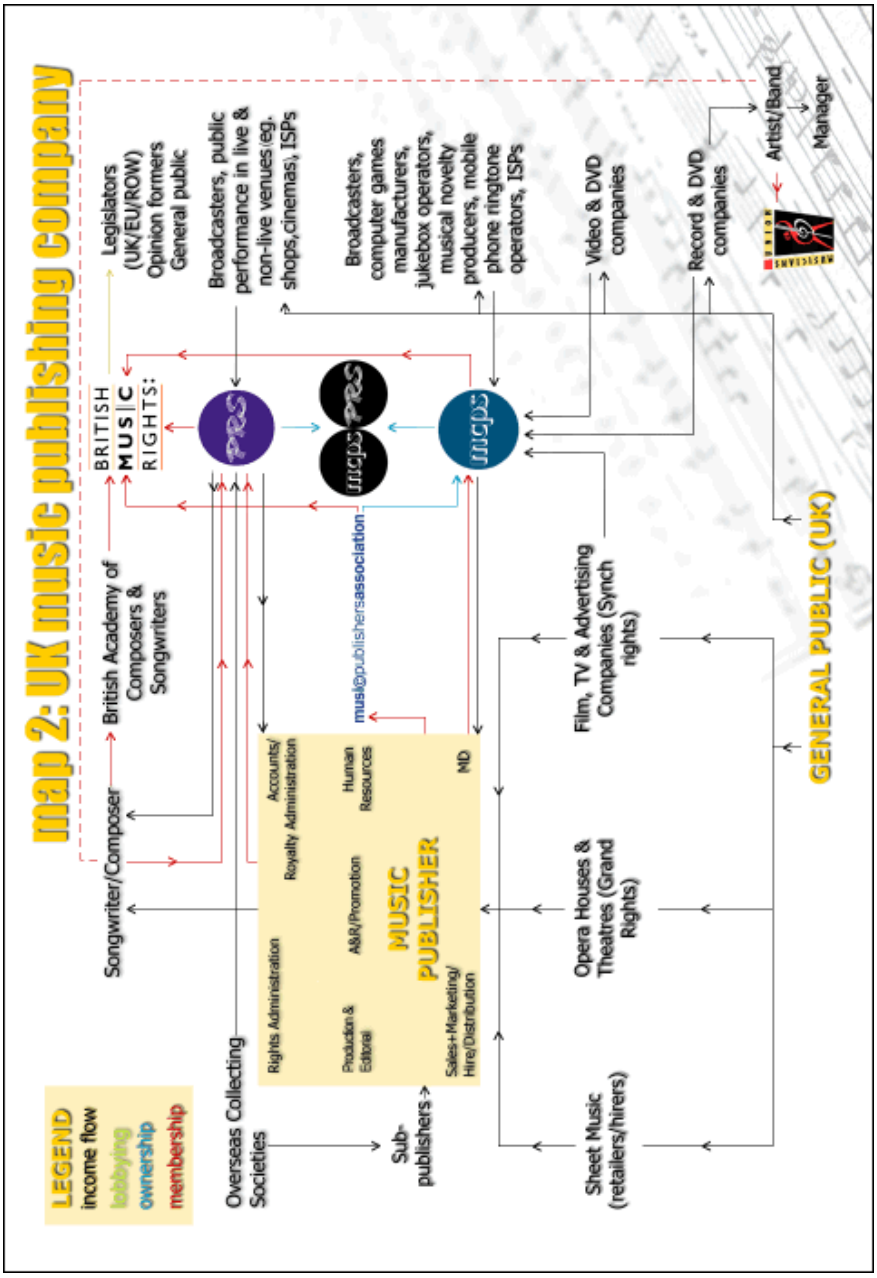


Figure 5 UK Music Publishing Company (BPI 2006)

A purposive method known as snowball sampling (Patton 1990, Walliman 2005) which allows a sample to be generated by the respondents themselves was used. This is a theoretical sampling approach. The sampling is generated by the research. This makes it flexible and allows the researcher to be guided by themes that come out of the interview process. Current lists of people involved in the process under investigation are not readily available, so the population cannot be easily isolated for sampling. Snowball

sampling reduces the likelihood of the bias which would occur if the researcher was using his own out-of-date contact list. It also helps identify people who would not be on that list and are currently involved in the process. The population is constantly shifting and the most up-to-date information about who is directly involved will come from the participants themselves. At the end of each interview, the interviewee was asked to recommend a few people for the researcher to approach who were working in this area and who they thought would be helpful in this research project. These were then contacted by the researcher for interview, mentioning they had been recommended by one of their peers. This approach also increased access because the likelihood of getting the individual to agree to be interviewed is greater because someone they know had already taken part. Although this method is non-random it provides the access required by this research to a hidden population with expert knowledge. It is therefore more suitable in this case than random sampling techniques which may tie the research to a pre-determined sample which may turn out to be inappropriate.

b. Ethics

The ethics notes of City University were being used as guidelines to ensure the research is not compromised by unethical procedures (City University, 2007). When potential subjects were approached to take part in this study they were given a formal letter of invitation (Appendix ii) detailing the motivation for the research, the researcher's background in the music industry and academia, the name of the person who recommended them, and contact information for the researcher. They were also given an Explanatory Statement (Appendix ii), which is based on City University guidelines, which explained the research in more detail and gave them contact information for any complaints they may have had about the research process.

Confidentiality and anonymity were considered to be the most important ethical considerations in this research, as both cognitive and business information are being sought. Subjects therefore were assured they could withdraw from the study at any time, and were not forced to answer questions they considered to be invasive or that may lead them to disclose trade secrets.

Consent forms (Appendix ii) based on the University Ethics Committee guidelines were supplied at the beginning of each interview. These were explained to the subjects

who signed and return the form at the interview. Any exceptions they had to the procedure were noted on the consent form (such as not being willing to take part in observation) and adhered to by the researcher. The form describes the procedures of research, clears the use of any data for publication, and confirms the research will adhere to the Data Protection Act. They were not paid or given any other material incentive to take part in the research.

Each interviewee was allocated a code number at the interview, which was noted on their consent form when it was returned. The recording was given this code number as its file name and all written reference to the subjects once the code has been applied were by code, not by real name. This helped to anonymise the data. The subjects were told they would be anonymous in any publication. Again this was to encourage them to speak more freely as well as to protect them if they make contentious comments.

The participants were emailed directly after the interview with thanks for their involvement and an offer to keep them up-to-date on results of the research. If they had requested, they would also have been given a recording and full transcript of their interview and sections would have been removed from the corpus or the data will be completely removed from the study if they had requested. The use of any correspondence or other business documents supplied for analysis was also cleared and anonymised.

c. Interviews

Wang (1999) found that in the area of information needs and uses both surveys and interviews had been used, noting that surveys were employed more usually to test hypotheses or measure parameters of large populations, and that they are completed by the user themselves. Interviews are often used alongside surveys, to pursue lines of inquiry raised by survey results. Problems with surveys include low return rates and poor piloting. Interviews differ from surveys by having an interaction between the researcher and subject, with the potential of improving the quality of data collected although problems may be caused by the researcher / interviewee interaction. In user behaviour research Wang (1999) found that the favoured type of interview is semi-structured and in-depth, with open-ended questions.

There are various options available for collecting the thoughts of people including questionnaires, interviews, focus groups and observation. It was felt that interviews should be the first method, focusing on a semi-structured interview approach. This would allow the researcher to probe more deeply into respondents' answers. Face-to-face interviewing was favoured over phone interviewing, as this gave the researcher the opportunity to use gesture to communicate more meaningfully with the respondent. Initial interviews in particular were used to develop the questions which would be asked, as they provided an 'overview' of the context within which the research lies, as well as indicating particular areas of interest for following up and developing. These initial interviews, therefore, were more unstructured and conversational although the researcher was aiming to elicit outcomes information around these criteria:

The work role of the participant

The extent to which the participant uses music in their job

The extent to which the participant searches for music in their job

What are the factors involved in the participant expressing their request

How the participant frames that request

How frequently this takes place

The systems the participant uses to search for music (this will include systems of people and organisations as well as automated systems)

The expectations of the participant when s/he initiates their information seeking behaviour

What type of material normally satisfies their information needs

The way in which the requests are interpreted by the system

The way in which the system determines how the requests are formed and made

The ways in which the owners of the music being sought seek to influence the outcome of the request

The sophistication of the systems that are being used

The relevance of the music being offered by the system

How this relevance is determined

Whether the meaning of the request is successfully interpreted by the system

Whether the meaning of the result is successfully interpreted by the participants

How the meaning of the music varies according to the participants position in the communication process

Whether they feel the available systems could be improved

The range of choice they are offered by the system

It was felt that covering these outcomes criteria would help focus the interviews towards the research question and the freedom of the semi-structured approach would encourage the interviewees to give answers which would, under analysis, indicate the existence of interpretive repertoires.

When an individual agreed to take part in the study they were sent a formal invitation letter and explanatory statement as attachments to an email confirming the time and place of the interview. The time and place were mutually agreed by the participant and the researcher and convenient to the participant, in order to make them comfortable. As this is a work-based study, with busy people, it was appropriate for the bulk of the interviews to take place in the interviewees' workplace, either in their office or in a meeting room. The interviews were recorded on a digital voice recorder. This is a small device which is relatively unobtrusive. It was placed between the interviewee and the researcher. Where possible it was obscured by desk furniture so the interviewee

forgot it was there, as this would encourage them to speak more freely. The interviews lasted up to one hour depending on the time budget of the subject and how freely they answered the questions. These were then transcribed by the researcher using Windows Media Player and Microsoft Word and imported into NVivo8 software (QSR, 2009).

The interviews were semi-structured. This means that if a participant wished to discuss a topic in more detail the researcher was free to follow this path. It is generally agreed that this leads to more rich and detailed information being generated and allows the interviewer to follow the lead of the interviewee in exploring a situation (Walliman, 2005). Users were asked questions more geared to their experience (Appendix ii), while Owners questions were more specific to theirs (Appendix ii), although many of the questions were similar or identical. If it was found that these questions did not elicit favourable responses they were adjusted to fit the situation and the list of questions developed over time as the researcher reflected upon the data generated by each interview.

Initial interviews were designed to give more of an overview of the issues involved, as a pilot, testing the questions in Appendix ii. It was immediately found that these could not be read out from the sheet. They were too formal for the situation, and did not reflect the informal nature of the music business environment and its communication processes. They were also too closed, leading to short undescriptive responses. The researcher quickly moved towards a more open interview style, referring to the list of outcomes criteria (above) rather than a list of directed questions. As more interviews were done the questions were refined and gradually followed a regular format, although were extremely flexible and open. The researcher kept an unobtrusive notebook to hand with handwritten questions, to add to the informality of the situation, rather than using a clipboard with printed questions.

An interview diary was kept, where the researcher made notes on the way to and from interviews about questions and ideas that were not recorded during the interview itself, along with any reflections that have bearing on the research. This was referred to in analysis and used to develop the questions as the research continued and reflected the memo-ing procedure recommended by Glaser and Strauss (1967).

As soon as possible after the interview had taken place the researcher emailed the subject thanking them for their time and taking the opportunity to remind them of anything the subject has offered to do, such as provide email addresses of possible interviewees or supply backup material.

d. Observation

It was also planned to observe participants using their preferred retrieval systems in real life situations. This would provide insight into the behaviour of the subjects while they were searching for music, which may be richer and deeper than that offered in an interview situation. Subjects would be video-taped doing a real search for a real request. This is a '*non-inquisitorial'* (Walliman, 2005:287) approach which can be more revealing than the interview process. However due to time constraints most interviewees were extremely reluctant to agree to be observed using the systems they employ. It initially seemed likely that no interviewee would agree to be observed and it became possible that this avenue of data gathering would have to be dropped from the research. However an experiment was devised to gather relevance judgments and a number of participants gave their consent to be recorded talking aloud while following the process of choosing music for real world queries. This is detailed in Chapter 7.

e. Collecting textual information

During the interviews subjects were asked to provide textual evidence of real life search requests ('briefs', scripts, emails). These textual queries were imported into NVivo and analysed by content using the Tagg framework (Tagg 1999), and the codes generated by Middleton (1990) and Stefani (1987). They were also analysed using DA for interpretive repertoires. This dual analysis provided some valuable insight into how interpretive repertoires relate to semiotic theories. The connection between semiotics and discourse analysis indicates this would be a valid research approach. This analysis is discussed in Chapter 6.

f. Systems evaluation

Gradually the interviews generated a list of commercial systems which are in use within the community to aid searching. These were discussed and evaluated using real life examples. These analyses are discussed in Chapter 5.

Example queries provided by participants were used as test queries. The researcher performed a search based on the information provided by the query and the results offered by the system were evaluated by professional music searchers (Chapter 7). The systems were also evaluated according to the interpretive repertoires (Chapter 12).

viii. Summary

A range of analysis approaches were used during this research. Interviews were analysed for themes and areas of interest, commonality and differences between stakeholders. This provided the researcher with essential contextual information and insight into the information needs of the participants. A large collection of textual metadata derived from bespoke music search engines was then broken into facets and analysed by term frequency. This suggested that particular vocabularies were being used to describe music within the context of these search engines. A collection of written queries was analysed using a similar approach. This enabled comparison across the communications process and gave rise to observations regarding the relationship between the vocabulary in the written queries and that of the search engines. The comparison between the language of the search engines and that of the queries was then examined by asking a number of participants to take part in observations where they talked aloud about their relevance judgments. All of the written texts were then subjected to detailed discourse analysis, searching for interpretive repertoires.

This bricolage, or triangulation of approaches led to a clearer view of how music industry professionals communicate meaning and meet their information needs when using music to accompany moving images. It enabled a testing of the communications model and allowed the researcher to recommend how systems could be improved. Henceforth each chapter discusses the relevant methodological approach followed in more detail.

4. Music and Films

i. Introduction

Although evidence from the period is sparse, it is likely that music has been used to accompany moving images since the Lumiere brothers' presentations in 1896 (Larsen, 2005). Music was either written especially for the purpose, or consisted of a mixture of well-known favourites drawn from classical and popular repertoires. Gradually these ad hoc combinations of music and film have led to a multi-million dollar worldwide creative industry and there is an accompanying wealth of theory on how music works with film. Directors such as Quentin Tarrantino and the Coen Brothers spearhead a wave of film makers using existing music in their productions, and this widespread trend has spun off into television, advertising, and computer games. This widespread use raises the questions, 'who chooses what, why and how?' which this investigation attempts to answer.

This chapter focuses on Objective 3 ("To identify music industry professional users of MIR systems and investigate their information needs and behaviour ") by identifying the communicative practice and decision making undertaken by creative professionals who choose music for multimedia texts (films, adverts, television programmes). The information behaviour, communicative practice and decision making by creative professionals within this area of the music industry is an under-researched area. This chapter discusses the use of music in films and advertising, focusing on communication and meaning of the music and discusses how this may relate to the reflexive communication model introduced in Chapter 2. The model is discussed in relation to interviews with a sample of music professionals who search for and use music for their work. Key factors in this process are found to include stakeholders, briefs, product knowledge and relevance. Searching by both content and context is important, although the final decision when matching music to picture is partly intuitive and determined by a range of stakeholders.

ii. **Use of Music in Films**

Although music was originally used as a mood enhancer and narrative aid for the cinema audience it gradually became an essential part of the film itself, '*to colour a scene, to suggest a general mood, to intensify a narrative or emotional tension*' (Larsen, 2005:145). The interpretation of film music depends on the listener, although the meaning of the music is generally successfully transmitted to the audience through means of agreed cultural codes – whether these are major/minor for happy/sad or consonance/dissonance as light/shade, as well as style topics, tonal design, leitmotiv, timbre and musical and filmic form (Neumeyer & Buhler 2001); and there are two main areas of analysis and interpretation, the music itself, and its interaction with the film (Donnelly 2001). Using pre-existing music means considering how the viewers' familiarity with the music might determine meaning, and being aware that these meanings can change (Powrie & Stillwell, 2006), although generalisations, such as genre and the cultural codes mentioned above, may be used to help select music to fit certain demographics.

iii. **Methodology**

The methodological approach for the interviews discussed in this chapter was detailed in Chapter 3,vi,c. The respondents interviewed all work with music, are mainly at a senior level and are very experienced in the use of music when accompanying moving images. Initially ten people were interviewed (001SYN-010SUP in Table 4), from both sides of the communication network: five represented the music rights holders (publishers, record companies) and five worked with music in the film and television industries. The respondents were chosen using a snowball sampling technique (Patton, 1990) which, although biased owing to interviewees being inter-connected, is an accepted theoretical sampling method, which has been used to gain access to 'hidden' or constantly changing communities. It is more flexible than random sampling, allowing the researcher to follow leads or themes from one interview to the next, and a normally quite inaccessible population with expert knowledge is more readily available.

Semi-structured face-to-face interviews were done at a time and place convenient to the subject, lasting up to one hour. The interviews were recorded digitally and transcribed by the researcher. Before each interview the researcher noted a number of

areas to discuss, based on what had already been discovered from previous interviews and other research. This flexible approach meant that there was no need to ask redundant questions and allowed the interviewees to talk freely about the issues that were important to them.

Ref	Job title	Role
001SYN	Independent publisher synchronisation manager	Owner
002SUP	CEO of independent music supervision company	User
003SYN	Major publisher synchronisation manager - advertising	Owner
004SUP	Independent supervisor – film and TV	User
005SUP	Independent supervisor – film and TV	User
006SYN	Independent synchronisation manager	Owner
007SYN	Head of major record company synchronisation department	Owner
008FED	Film editor	User
009SYN	Major publisher (production music) synchronisation manager	Owner
010SUP	National commercial television station trailer editor	User
011SUP	Advertising agency in-house music supervisor	User
012SYN	CEO of independent music supervision company - advertising	User
013SYN	Independent supervisor – advertising	User
014SYN	Major record company synchronisation – computer games	Owner
015SYN	Major publisher synchronisation manager – advertising and computer games	Owner
016COM	Composer of music for computer games	User
017SUP	Independent music supervisor – computer games	User
018SUP	Major games company – music supervisor	User
019SYN	Independent music supervisor – advertising	User
020SYN	Major publisher synchronisation manager – advertising	Owner
021SYN	Major publisher synchronisation manager – advertising	Owner
022SYN	Independent synchronisation manager	User
023SYN	Not allocated	
024SPOT	Advertising agency in-house music supervisor	User
025SPOT	Independent supervisor – advertising	User
026SPOT	Independent supervisor - advertising	User
027SPOT	Independent supervisor - advertising	User
028SPOT	Independent supervisor - advertising	User
029SPOT	Independent supervisor - advertising	User
030SPOT	Independent supervisor - advertising	User

Table 4 All research participants' codes, job titles, roles

The exact wording of the questions varied, and sometimes the planned questions were not asked directly because answers had been given answering another question, as justified in Chapter 3. However the researcher always had a list of areas to cover (listed in 3,vi,c). These focussed on the process, the use, queries, communication, meaning, relevance and relationships. Areas of discussion included participant's work role and relationships with other stakeholders; the extent to which they use and search for music in their job; queries and systems they use in searching; the type of material that satisfies their requests; and whether they could recommend improvements to the process.

The transcribed texts and recordings were read and listened to, focussing on discussions of the process and the issues that were felt by the respondents to be of importance. Common areas which were raised are discussed below. This was a preliminary analysis designed to inform the researcher of the main issues and how the process takes place. These are subsequently compared to the reflexive communication model. This research is informed by the belief that the information seeking behaviour of Users, is significantly influenced by the world of which they are a part. The discussion that follows highlights some of these real world issues and relates them to the model.

iv. **Analysis and discussion**

a. Stakeholders

The interviews were started by discussing a subject the respondents knew well, their day-to-day work and their perceived role in the process. This allowed them to settle in comfortably to the interview process and relax. One of the key themes raised by this question were how on both sides there were large numbers of stakeholders involved in the process, in addition to the Consumers (Table 5).

> *'You get a creative team, who write the script, who are probably in their twenties, and invariably, whatever music they're into, be it hiphop, electronica, grime, whatever, they'll want that on the ad. You get a creative director, their boss, who's probably a generation older, who wants something he's never heard on an ad before, so it stands out in the ad break and gets noticed, and then you've got the client, who's probably into classical or jazz or something like that, and he'll want that on it, and then you've got the target market, Debbie the*

housewife, who's 35 got three kids and lives in Sheffield who's into Madness. And you've got to find one track which all those people will buy into and say, 'Yes, we want this track on our ad'. So it is difficult at the best of times.' (003 music publisher)

Music Owners	Music Users
Synchronisation Dept, Legal / Business Affairs, Composer, Performer, Marketing & Promotions, Artists & Repertoire	Producer, Director, Film Editor, Music Editor, Music Supervisor, Client, Director, Ad Agency Creatives.

Table 5 Stakeholders

Once a selection of pieces of music has been offered to the User, the stakeholders are brought in to reach a decision on the piece of music that will be used. Each of the stakeholders is likely to have different motivations, codes and competences, and these are not easily resolved. The criteria behind the decision making will include budget, clearance issues, aesthetic and commercial judgments. Whether the music enhances the picture seems to be the most important issue, although this will vary according to the producer (budget, market), director (picture as a whole), editor (the story), music supervisor (aesthetic and administrative) and audience (in test screenings). However this is not easily evaluated, most respondents resorting to 'gut feeling' when asked to describe what makes a great sync.

'And I think I think the hardest thing about searching for music for an advert is it's an opinion, and it's a take on a brief. And it's a take on visuals. And it's what you think works.' (007 record company)

b. Briefs

The query comes generally from the User to the Owner as a brief, which may take the form of a short informal email, a more widely circulated document which has been approved by internal User stakeholders, a script element, a conversation, or a moving image in the form of a clip of a completed ad.

'If you've had a conversation that does help, but again you're kind of you're not seeing that piece of music against the picture. And I would say our most successful pitches are the ones that we send the track to picture.' (007 record company)

'It's very easy to actually try stuff against picture and know whether it works and know whether a really odd idea is really worth playing somebody. (002 independent music supervisor)

The Owner may have the opportunity to clarify key issues with the User. These issues would include budget, deadlines, more detailed information on the use and context, or guidelines on the type of music that is sought.

'So knowing the budget upfront can sometimes completely eradicate seventy five percent of your catalogue.'

The User frequently works with a 'temp' track of music that is not going to be used in the final product, but can be used for similarity queries. Normally a range of Owners are approached with the same or a similar query. These will be drawn from favoured or targeted contacts within the industry who are likely to make an offer that meets the aesthetic, time and budget constraints of the User.

According to the model, different musical codes are likely to have varying relevance for each query. For example, while a director may require a particular song, a music supervisor may extract the codes from that recording that are important to the meaning the director is attempting to convey, and match them to other recordings that may be more affordable or are not so obvious, uniqueness being an important decision-making factor.

'And sometimes if they want a track, for example, they can't have – let's say they want the Stones and there's no way they can afford it, they've only got thirty grand or something, you have to find something that's equally going to impress them as much as the Stones is. And I think that's by finding something unique that's going to work to picture.' (007 record company)

These codes would have increasingly granular specificity, from highly specific (different artists performing the same song in a similar style) through to different artists from other musical traditions that may have important perceived similarity, not necessarily musical but more relating to image and status. User codes are conveyed to the Owner as a brief, which may focus on the qualities of a product (‘*speed, power, control, ability*’, ‘*beauty, sophistication and intricacy of design*’ *(011 ad agency supervisor*) or key words, such as ‘*tension, mystery, playfulness and warmth*’ *(011 ad agency supervisor*). The Owner may have different competences and interpret these emotive connotations of signification differently to the User, although a sharing of codes and competences will reduce this semantic gap. A selection of songs are offered that are deemed to match the brief and the User makes a choice. There are frequent references to a ‘left field’ suggestion, which does not appear to meet a brief, being chosen as the ‘perfect’ sync. In these instances it is possible that while the User felt the song did not ‘meet the brief’, because of a mis-match between competences, the Owner’s view of the track was that it was not at all left-field but an obvious match for this query.

c. Product knowledge

The Owners then attempt to match the brief to their catalogue, which may consist of up to one million pieces of music. If the brief is clear – a specific piece of music is required, or a specific genre, era, tempo or style is described, and if the Owners’ catalogue is able to match those search terms to its metadata, the specific piece is found and terms negotiated, or a selection of pieces are offered to the User. These may be sent via email or ftp or on a cd, played to picture in an editing suite with the User present, or sent already matched roughly to picture using consumer software such as iMovie. The choice offered will vary in quantity depending on the brief, and may consist of only three or four tracks, or may run possibly up to fifty if a TV series is being developed. A small number of Owners offer a web-based facility to Users whereby they log in to production folders of music put together by the Owner, which include downloadable tracks as mp3 and wav (for broadcast). Then either feedback is received from the User to guide further searches, one of the songs is chosen and a license is negotiated, or the User does not contact the Owner again, choosing material elsewhere.

The search by the Owner is of particular interest. During the interviews some described how, rather than search the whole catalogue, they would refer to existing searches that they had done for previous similar queries, and discussed how they usually browsed their own collection, which was narrowed-down from the existing catalogue in terms of its 'sync-friendly' nature. Removing material that was not likely to be used for synchronisation was very important to them, often citing narrative or offensive songs as being difficult to use owing to the lyrics obscuring the message of the picture. Their 'bespoke' collections are organized using very specific terms, such as 'instrumental – surf' and 'female vocal – 1950s' which they feel relate more to the queries they receive than the traditional artist-album-title-genre format. An unclear brief means the Owner has to use their experience and product knowledge to 'second guess' the Users needs. Experience as a film maker helps in this area and some of the more successful practitioners have experience on 'the other side'. Most of them used iTunes as their personal media library and when doing a search referred both to their company catalogue and to the outside world, including the iTunes store and their own collections, and bringing in expert advisors from within and outside their company when specialist music was required that lay outside their own product knowledge. Great importance is placed on 'knowing the catalogue' rather than relying on a bespoke search engine and the respondents spend a large amount of time listening to the music they represent in order to familiarise themselves with it in order to maximise any opportunities for exploitation.

> *'We take a day off each month, which we sit down and listen to the stuff, instrumentals and remixes, just to make sure that … we know what we're talking about.' (007 record company)*

> *'A big part of my day is always every day at least fifty per cent will be listening to music. And if I can get more of the day to listen to music, I will. I mean there's just so much..' (005 independent music supervisor)*

While the Owner is performing the search for the User, the User is exploring other avenues for music for use. They will not only be approaching other Owners, but will, again, search their own collections and look at their previous similar searches, use the iTunes store to listen to samples of tracks, and refer to web-based resources such as Google, All Music Guide, Pandora and last.fm. They also may have experience on 'the

other side', are experienced in searching for music and are driven by a passion for music that is matched by in-depth knowledge.

d. Relevance

When the User is supplied with a selection of material this is listened to in order to evaluate its relevance and narrow down the selection. The choices are then matched to the visual. Other stakeholders are involved in this process, their input varying by their importance and ability to argue their case. While the relevance appears mainly to be gauged by 'gut-feeling', a term used by many respondents, probing revealed contextual factors such as target audience, genre, uniqueness, budget, availability, recognisability and chart position, and content features such as tempo, structure, mood, instrumentation, texture are all considered. It is here that the query becomes more concrete, and a further iteration can be made much more specific, when the User can refer to features of offered material as reference points.

Other contextual factors such as budgets and whether rights holders will allow the use of the material help improve precision. Relevance is also affected by audience metrics and the tastes of the various stakeholders. However it came across very strongly in the research that there is no scientific way of agreeing on the right piece of music to accompany a clip, and that many pieces of music will satisfy the same query:

> *'..music is so subjective, it's like if you put five people in a room all trying to get them to make a decision on a piece of music, you'll never get five people to agree. It's personal taste. What one person likes another person dislikes. I think the public decide what's right and I think if you can watch stuff and see what does jar, that just does not work, wrong tempo, wrong emotion, wrong style. But then you can find ten other things that are the right tempo, that are the right style, and the right mood, and which one works? Well, all of them, potentially.' (004 music supervisor)*

The relevance is therefore based on subjective criteria but also on more objective facets such as budget, novelty (whether the piece has been used before in a similar context) or familiarity (whether it sounds similar to a piece used successfully in a similar context), time availability, whether the artist will allow the use, and content

factors such as tempo and style. The issue of relevance is discussed extensively in Chapter 7.

e. Meaning

When starting a search, Music Users have to extract meanings from a script, brief or images and translate those meanings into a query that will result in successful retrieval of a selection of material that matches the meaning that the creatives (those directly involved in creating the film or commercial) wish to put forward to the viewer of the final product. Communicating this meaning clearly depends on all parties involved sharing the same, or similar, cultural codes and competences. However as there are various stakeholders involved in this process, and as these stakeholders do not always share the same understandings of music, this can cause problems. For example:

> *'I need a track that's going to make people ... that ... it's quite slow to begin with but has a real good build at the end, that's emotional but quite driven' (010 music supervisor)*

is a typical example of a query that incorporates a range of affective concepts (*emotional, driven*) and content requirements (*slow, build at the end*). In order to accommodate the range of meanings encompassed by this type of query, a selection of pieces of music are generally offered to the User, who will try these against the images and discuss with their stakeholders They will then either accept one of these offers or go back to the Owner with a revised query, which is generally based on similarity with one of the pieces in the first offering or an 'ideal' (not affordable or otherwise available) piece. Gradually the reflexive communication of the meaning of the music, which can also change during the process due to outside influences, is refined by matching codes and competences, trial and error, input from other stakeholders, and '*gut instinct*' until the query is satisfied. The issues around musical meaning recur throughout this research, and are particularly discussed in Chapters 8 – 13.

f. Context

The use context, how the music '*fits*' the picture and its intended audience, is key in the process (Neumeyer & Buhler, 2001) and although interpretation of musical meaning is subjective, interpretations do converge within an audience (Tagg & Clarida,

2003). Frequently, particularly in the case of advertising, a *visual* (film clip) is emailed to Owners along with a written brief in order to communicate the use context as clearly as possible. The Owners then try to match a selection of pieces of music with the visual and return a rough edit to the User for their consideration.

> *'if it's a classical, uplifting, anthemic piece, then you know, there's thousands and but also the same time it's finding the right song, and it is just – I mean it's best when we have the- visuals, it's a lot easier.' (007 record company)*

In advertising, the product will also determine the type of music that is chosen by the Owner, as the cultural context of that product and how it is marketed indicates the type of music that will be suitable:

> *'Because if you're dealing with a brand, it could be Heinz or Lucozade, or .. they don't want necessarily anything too clever. They just want something that is going to help sell their product. And be a nice accompaniment to the film. Whereas maybe somebody like – obviously I'm generalizing – but someone like 02 or Orange, they'll want a staggering piece of music that people are going to sit up and sort of pay attention to.' (007 record company)*

This means that the search process needs to be able to reflect these criteria, which are more related to cultural values contained within the music (Middleton, 1990). The targeted consumer will need to relate to the music in a positive way, and this relates more to facets such as cultural attitudes, codes and competences rather than the content of the music signal itself.

v. Discussion

a. Process

It can clearly be seen from the analysis of the process that this is similar to the interactive information retrieval system used in online databases. The system consists of a knowledgeable and expert User, an equally knowledgeable and expert intermediary (the Owner) and a system (the record company or publisher's catalogue). It could be suggested that the expert intermediary be removed from the process (disintermediation) and the User allowed direct access to the collection (Brooks & Belkin, 1983). This

situation is discussed in a recent survey of graphic designers search for music (Lang & Masoodian, 2007) which indicated the value of online systems when looking for music to accompany presentations. This could reduce the problem with inadequately worded briefs as an interactive system would allow the User to adjust the query until a satisfactory result has been found. However it raises some problems. The Users have very limited time budgets and are reluctant to use these doing 'narrowing down' searches that can be delegated to others. Secondly, there are numerous Owners, so this approach would require the User doing searches on each Owner's bespoke search engine. However it appears that the expert knowledge of the Owners is frequently invaluable, as they know their catalogue well, and some of them have real experience in the use of music in film, and are prepared to match music to picture themselves in order to encourage the User to choose that piece of music over the others available. This experience in each other's world also means the Owner and User can encode and decode each other's meanings more accurately, they are aware of the other's codes and competences, and can accommodate these in forming their requests and results.

Mapping these results to the communications model, this shows that there is a relationship between the Music Owners and the Music Users in terms of searching for and providing music. The Users have a piece of film, and are attempting to communicate ideas with that footage. These ideas are encoded into a query, in the form of an informal note or a brief, which is generated by a number of stakeholders, all with competing codes and competences. This brief can be of any level of specificity, ranging from a specific piece of music, to offering the piece of footage itself and asking for the creative input of the Owner, who attempts to match codes and competences with those of the User. These offerings are then sent back to the User, who, depending on how much s/he shares codes and competences, may agree or disagree with the choices on offer.

b. Content or context?

While it initially appears that it is the content of the music itself that determines its use, this shows that the context of the music within the final film clip as well as the contextual significance of the music in society, the organization and culture also have major impact on the seeking, retrieval and behavioral processes. It was very noticeable throughout the research that Users rarely search for works by particular named artists or

titles, the traditional ways of organizing music in music libraries, instead focusing on genre, periods, instrumentation as well as affective facets and content such as tempo and timbre. This indicates, therefore, that it is likely that systems which are designed for music retrieval for these purposes would more effectively meet the needs of their users by incorporating both content and context in their functionality.

vi. **Conclusion**

According to the evidence collected so far, while the communication between Owners and Users has been shown to be reflexive and interactive, representing an interactive information retrieval system, the professionals in this sample were not schooled in searching through large collections. Their primary motivation seemed to be to find the 'best' piece of music to communicate their message. Although there are some search engines available for this type of use, human involvement seems central in the process. Attempting to build systems that meet the information needs of these users should be flexible, incorporate queries by example as well as by matching established metadata (including lyrics), and allow searching by content as well as contextual information. It often appears to be the use that determines the choice, and it seems rare that the initial query will name a song or an artist except as an example of what would work but is not available. The clearest briefs appear to be moving images, so matching video features to music features could be a worthwhile avenue of exploration. Using music to enhance moving images seems to require an understanding of the contexts and contents of both media and further user research is required to inform successful systems development if these needs are to be met.

vii. **Next steps**

This preliminary analysis of interviews has been used to describe the process in choosing music for work purposes in the music and film industry. The texts were to be analysed more closely over time, to draw out nuances and detail of the discourses, and investigate the interpretive repertoires that are used by the participants in the process when talking about searching for and using music. This would provide a view of 'macrosociologically relevant cultural regularities' (Talja, 2001:26) which are used by participants and is presented in Chapter 8.

5. ORGANISING MUSIC

i. Introduction

The purpose of this chapter is to inform Objective 5 ("To identify, investigate, analyse and evaluate various retrieval systems used in music industry MIR") by examining and discussing the classification of commercial popular music when large digital collections are organised for use in films. A range of systems are investigated and their organization is discussed, focusing on an analysis of the metadata used by the systems and choices given to the end User to construct a query. The indexing of the music is compared to a checklist of music facets which has been derived from recent musicological literature on semiotic analysis of popular music. These facets include aspects of communication, cultural and musical expression, codes and competences. In addition to bibliographic detail, descriptive metadata is used to organise music in these systems. Genre, subject and mood are used widely while some musical facets also appear. The extent to which attempts are being made to reflect these facets in the organization of these systems is discussed. A number of recommendations are made which may help to improve this process. This chapter discusses an area of creative music search which has not previously been investigated in any depth and makes recommendations based on findings and the literature which may be used in development of commercial systems as well as making a contribution to the literature.

ii. Music search engines

Record companies and music publishers (rights holders or Music Owners) control rights of recordings and compositions respectively. When music is used to accompany moving images (music synchronization), in a film or TV commercial, the film maker or advertising agency (Music User) is encouraged by the rights holders to use their bespoke proprietary systems to perform searches for suitable material from their catalogues. Specialist intermediaries also perform searches on behalf of Users based on written, verbal and visual queries. Production music libraries, which control music made specifically to accompany moving images, organise their music by genre, subject and activity rather than by artist and title. Some of these approaches have been adopted

by owners of pre-existing commercial recordings, whose primary purpose is not for synchronization, in order to exploit their material further.

The difficulties involved in meeting this type of information need have already been discussed. There are a number of stakeholders, and a range of factors which affect their decision (including non-musical factors such as budget and availability). In addition, it is difficult to frame music queries. Descriptions can be highly subjective and conveying musical meaning adequately relies on shared codes and competences (Middleton, 1990, Stefani 1987, Tagg, 1999). An expert intermediary (independent or music Owner staff) acts in an advisory role, performing a search of their catalogue on behalf of the User by interpreting their query (known as a 'brief') in a way that matches the organization of the catalogue. Many of these intermediaries have previously worked in film and advertising and have insight into the codes and competences of the Users. Most large rights holders have made an attempt to deal with these issues in disintermediation by developing bespoke proprietary search tools for their catalogues.

The purpose of this chapter is to investigate a range of bespoke music IR systems used in the music industry. The methodology, which is designed to facilitate analysis of the metadata used by the systems and the choices given to the end User to construct a query, is discussed in Section iii. This leads onto a discussion in Section iv of the way commercial music controlled by these Music Owners is organised for the purpose of music synchronization, referring to some examples of real queries used in this process. Section v then refers to Knowledge Organization and semiotics literature with a view to offering some possible solutions to the problems of applying descriptive metadata consistently to music. Section vi summarises the chapter, presents a selection of recommendations regarding possible improvements to the process, and suggests further research objectives for the future based on these findings.

iii. **Methodology**

This investigation discusses search engines operated by five multinational music publishing companies (MSE001, MSE002, MSE004, MSE005, MSE006), and a service run by an intermediary (MSE003) which searches a collection of other music catalogues operated by a number of smaller rights holders. Although the size of these catalogues ranges from around 70,000 works (or compositions) to more than 4 million recordings

(some compositions are recorded many times) the works or recordings are not all digitised and available online. Although some are held back for legal reasons, digitization strategies prioritize higher earning or more 'synch-able' material, leading to the Owners 'narrowing down' the material on behalf of the Users.

All of the descriptive terms on each application's User interface were copied into tables for analysis. This removed them from their visual context, allowing a clearer comparison to be made between the ranges of facets being presented to the Users. These types of terms were ranked according to frequency (Table 5) to find any commonalities and notable differences in their organisation. After the terms had been entered into tables these were each imported into NVivo8 software (QSR, 2009). A word count was performed on each set. This generated a list for each search engine of the top 45 words of three letters or more (including 'pop' but excluding 'an'), ranked by frequency. Tag clouds were also produced for each set, enabling a visual analysis of the collections.

From this point onwards these music search engines (MSE) (Nanopoulos et al, 2009) are anonymised and will be known as MSE001, MSE002, ... MSE006. The reason for this is that much of the information drawn from the interfaces may be seen by the organisations as being commercially sensitive and it does not serve the aims and objectives of this research to identify any of the sources specifically.

Representatives of the companies operating the six services were approached directly with interview requests for more detailed information surrounding their organisation and use. Four agreed to interview, two did not reply. The subject of these semi-structured interviews, included: detail of the classification schemas, information around the useage of the services, and identification of problems of organising music. Three interviews were transcribed and used to enhance and illustrate the findings of the search engine text analysis. The fourth interview was rescheduled as a short phone conversation and was discarded for reasons of brevity.

iv. **Organization: facets**

Table 5 represents the top fifteen ranked musical facets derived from the study of the six music IR search engines:

FACET	QUANTITY	CONTROLLED / FREE TEXT

Bibliographic		
Artist	6	Free text
Song title	6	Free text
Writer	6	Free text
Year	6	Controlled
Album title	3	Free text
Chart position	3	Controlled
One stop	3	Binary
Originating territory	3	Controlled
Descriptive		
Genre	6	Controlled
Keyword	6	Controlled / Free text
Tempo	6	Controlled
Lyrics	4	Free text
Mood	4	Controlled
Subject	4	Controlled
Vocal mix / instrumental	3	Controlled

Table 6 Top 15 Music Facets

It can be seen that all six of the search engines present a mixture of Bibliographic and Descriptive metadata to the User, allowing them to search by Writer, Year, Artist and Title (Bibliographic) as well as by Genre, Tempo and Keyword (Descriptive). Other Descriptive metadata included Mood, Subject, Lyrics and Instrumental / Vocal mix and Bibliographic terms included Album Title, Chart Position, One Stop (ease of copyright clearance) and Originating Territory. These facets of the musical document, then, appear to be deemed by the creators of these search engines to be key in organising music when it is being searched for synchronisation purposes.

The bibliographic metadata is unchanging over time and is mainly set when the work or recording is created. Some of this information may be used by the organisation for a wide range of administrative purposes other than retrieval, including rights clearances and royalties' payments. Descriptive metadata, on the other hand, can change over time, can be subjective, can vary between performances of the same work, and can be more domain-related. Traditional music cataloguing approaches do not focus on classifying musical works or performances according to their mood or the subject of their lyrics. Determining mood or subject requires expert input related to the reasons behind applying this high-level type of classifier. In the scenario under investigation the

objective of the application is to retrieve a manageable selection of pieces of music that meet the requirements of a film or commercial maker who wishes to match a piece of music to a section of film.

a. Unknown item

In this type of searching there are two types of query: known item and unknown item. With a search for a known item, the User knows exactly the piece of music they want to use, and need to negotiate this use with the rights holder. This 'clearance' is dealt with initially by the synchronisation intermediary who subsequently passes the request on to legal and business affairs for contractual purposes. Often, however, the User is unsure about their choice of music. The Owners organise their interfaces in an attempt to meet this particular need, in a wide variety of approaches which are based on socio-cultural elements of music and by musical descriptions. For example an advertising agency may state:

> *"We need to avoid the spot from going too 'mushy' or 'schmaltzy', and therefore wants to be upbeat whilst charming. It doesn't want to be melancholic, down beat, over the top, over powering or dark, but optimistic, light hearted, contemporary and charming." (Music brief 004 excerpt)*

Or:

> *"We are looking for a great, proper love song. Something unashamedly romantic so don't be afraid to be sentimental or warm. It should lift the heart. Instinctively we think that the track we need is probably from the 50's or 60's, maybe the 70's. […] We want a big crescendo at the end, when the main characters kiss and everybody wakes up, so songs that build up to swelling, string-soaked choruses are especially welcome. Lyrics and choruses involving sleep, eyes, waking, dreaming, touch, or some other direct link to the narrative, would be great." (Music brief 012 excerpt)*

b. Description

It is the job of the expert intermediary or the search tool to match these types of unknown item queries to relevant items in the catalogue. It is problematic that terms

such as ‘mushy’, ‘schmaltzy’, ‘charming’ and ‘warm’ can be interpreted in many different ways by Users and Owners alike. Some applications offer a controlled vocabulary of moods or feelings to deal with this, and these types of non-specific emotive terms are described variously as Styles, Moods, Subjects, Topics or Keywords. Offering a range of choices in a controlled vocabulary improves consistency in indexing and acts as a guide to the User when searching. This relies on the chosen terms reflecting the Users’ language choices and, from various comments in the interviews, it appears that the principle of User warrant (NISO, 2005) is generally applied when building descriptive categories, while literary warrant is applied to bibliographic terms.

c. Genre

Genres are semiotic codes which are agreed by the community (Fabbri, 1981). Musical events within a piece of music combine with social uses and interpretations of the piece, which may shift over time. They may be very broad (art music, folk music, pop music) or highly specific. They may also vary according to the codes and competences of the listener (Middleton 1990). Despite their fluid nature they are widely used in arranging music collections. In record stores Genre is frequently the sole category used to organize music. This may mean the music being sought by a User may not be classified in the way they may expect (Radiohead under ‘Pop’ or ‘Rock’? Simon and Garfunkel under ‘Folk’ or ‘Pop’?) but their all-pervasive nature indicates a strong acceptance by the community that Genre is a suitable way to organize music collections even though inadequate genre definitions may lead to mis-classification (Abrahamson, 2003).

All search engines in the study presented a range of genres to choose from. These ranged in specificity from a small selection of ten broad genres (Rock, R&B / Soul, Jazz / Easy Listening, Country / Blues / Folk, Rap / Hip-Hop, Pop / Dance / Electronica, Alternative, World / Reggae / Latin, New Age, Gospel / Christian (MSE002, 2009)) to a selection of 32 genres and 1295 sub genres (MSE005 2009). These Genres are offered to the User as a controlled vocabulary.

A word frequency query was run on the entire collection of terms. This gave rise to the tag cloud in Figure 6:

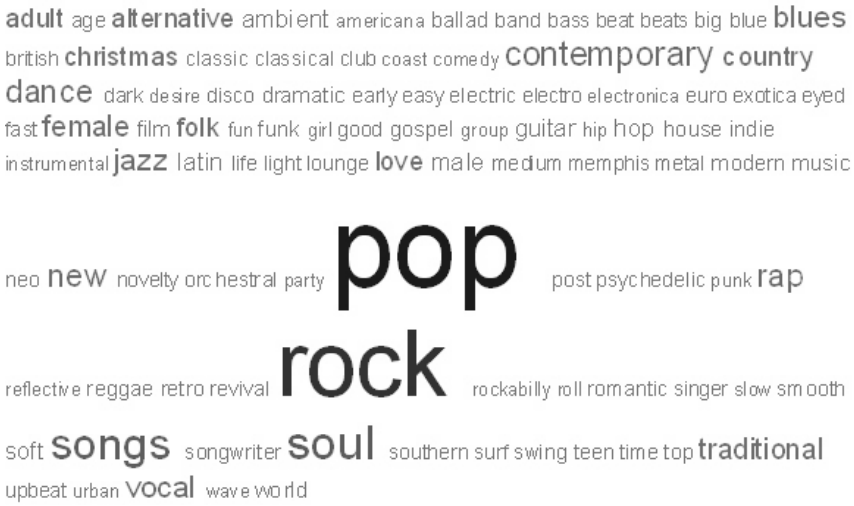


Figure 6 Total word frequencies tag cloud - all search engines combined

This shows that a very wide range of Genre terms are the most used facets, the highest in all of the collected data being the word ‘pop’, followed by ‘rock’ and ‘soul’. On closer examination it can be seen that some of the terms are Subject based, such as ‘adult’, ‘love’, ‘fun’ and ‘desire’, or Mood based (‘dark’, ‘dramatic’, reflective’). Musical features are also included (‘slow’, ‘soft’, ‘fast’, ‘instrumental’).

The frequency tables for each individual search term collection indicate that although each of them focuses mainly on Genre terms, especially ‘rock’ and ‘pop’, there are variations in depth of cataloguing and in focus. For example Table 6 shows the variety in the frequency of use of ‘pop’ and ‘rock’ in the search tools:

Music Owner	Pop	Rock
MSE001	1	9
MSE002	3	10
MSE003	18	12
MSE004	1	1
MSE005	302	209
MSE006	6	8

Table 7 Frequency of 'pop' and 'rock'

While most of these references can be found in the expected Genre category, a small number appear in Subject classifications and are used to clarify, for example,

'Worship' music – allowing the User to choose between Christian Rap and Christian Rock (MSE006).

d. Lyrics / Subject:

Four of the applications allowed the User to perform a search through lyrics of the catalogue, again by free text input. This often reflects the purpose of the search, which is to find music with lyrics that in some way enhance the footage it accompanies. In the second example above (Brief 012) lyrics which link to the narrative are seen to be important. Using the search terms '*sleep, eyes, waking, dreaming*' etc helps to focus the results on relevant material. Unfortunately it is not possible to narrow down this set further by incorporating other criteria ('*70s*', '*crescendo*', etc). The User is forced to choose which criteria are most important to the search and then narrow down by reading through a list and listening to the songs to determine their relevance. However the subject of the lyrics was searchable, mainly by controlled vocabulary, while one collection was searchable by free text – the Owners had already determined the subject of the lyrics on behalf of the Users. The categories included Actions, Aesthetic, Enjoyment, Time/Travel (MSE006) and Travel, Party, People, Action (MSE002). They are illustrated in the tag cloud in Figure 7:

Figure 7 Tag cloud - Subjects - all search engines

In advertising and film, the words in the lyrics, or their subject, can be used to communicate messages from the film maker to the viewer. This is not to say the lyrics are always used to convey the meaning intended by the songwriter. In TMobile's use of Vashti Bunyan's 'Diamond Day', for example, a surface interpretation of the lyric

indicates that it celebrates a beautiful day in the countryside. The visuals for this advert show young people using mobile phones in urban settings featuring surfaces which are unnaturally flexible and bears no direct relation to the lyric. Barclaycard's use of the Bellamy Brothers' 'Let Your Love Flow' in their waterslide advert, however, does have some lyrical relevance inasmuch as the protagonist *flows* down the slide in the water for the duration of the commercial. The original brief for this commercial described the visuals and stated:

> *"Any lyrics should relate loosely to the story of the ad, which conveys a positive journey." (Music brief 015 excerpt)*

These examples indicate there is a high level of creativity in the choices behind these music uses, which cannot easily be broken down into Genre/Subject/Mood categories. This is reflected in the briefs examples above, which are non-specific and subjective.

e. Mood

In an attempt to regularise the subjective nature of Mood descriptions, four applications gave a controlled set of options to the User, ranging from a selection of 8 (Aggressive, Brooding, Happy, Mellow, Romantic, Sad, Sentimental, Upbeat (MSE002)) expanded to a further 28, to MSE005's 41 'Mood groups' and 612 sub Moods.

Mood is not universally used in these search engines (although entering mood categories into keyword boxes where a drop down choice does not exist does generate a set of results) and it is subjective although it is widely used in briefs. The Mood of a piece is determined by whether the listener is considering the music, or the lyrics, or their combination. Many 1960s Motown songs, for example, have uptempo major key melodies, indicating a 'happy' or 'positive' idea, while the lyrical content is often to do with breaking up relationships or general hardship. This creative counterpoint is not reflected in the search tools under investigation.

The mood descriptors that are offered include both positive ('high spirited', 'passionate', 'dynamic') and negative ('sad', 'aggressive', 'angry') emotions. Listening to selected pieces in these categories indicates they are indexed by a combination of musical and lyrical content. A song can have multiple mood categories.

Figure 8 Tag clouds - Moods - all search engines

f. Keyword

All search engines offered a choice to the User of entering a keyword. While most of them allowed this search to be by free text, one offered a dropdown choice of 271 selections, which included Anger, Breakfast, Family, Heartbreak, Suicide, Youth. Using natural language indexing this links the Users chosen keyword(s) to words in the title or lyric of the song, or to descriptive metadata applied by the Owner.

g. Musical features

Three services allowed the User to narrow down their search by the specific musical facet of vocal mix (female / male / chorus / duet) and a selection of featured instruments, while all six offered choices in Tempo, which ranged from a selection of 3

(Fast, Medium, Slow (MSE002)) to a more sophisticated choice of eleven, using Beats Per Minute (BPM) as a descriptor along with a text explanation (eg Slow - (71-90) BPM (MSE006). Other types of musical features included Instruments and Beat but detailed features normally associated with musical analysis such as Key, Texture, Tonality, Range, Accentuation, Harmonies etc are not offered as choices to the User.

The emphasis on these search tools is to offer a highly detailed selection of features which are not 'musically' specific but are more general and descriptive. This suggests that the Users do not need to be musically trained, and that there are certain facets which they find more important than others when they are talking about music in this type of searching.

v. Discussion

a. Classification and Knowledge organization

Music can be organized by bibliographic or descriptive means. Some of these are specific to music rather than text. Vellucci recommends that :

> *"understanding the various ways in which music resources are used will allow the metadata creator to resolve the practical problems when determining the type of metadata information required to meet the search and retrieval needs of musicians" (2004:39).*

She discusses how the problems of multiple authors, performances, languages and manifestations of works can cause problems with music classification that are not dealt with in text classification methods. There have been efforts to deal with these problems and the International Federation of Library Associations (IFLA) recommend a focus on the Functional Requirements of the Bibliographic Record (FRBR) outlined states of: work, expression, manifestation and item. These are reflected by the bibliographic nature of MARC and AACR2R schemes which deal particularly effectively with notated music (Vellucci, 2004). Dublin Core (DC), however, is widely used by digital libraries for digital audio and is recommended by International Association of Sound and Audiovisual Archives (IASA, 2009) while MPEG-7 has been found to be comprehensive, wide-ranging and valid in the Music Information Retrieval community (Corthaut et al, 2008).

These methods and approaches are integral to the organization of music in a comprehensive sense, and are indeed applied by some of the organizations in this study. Bibliographic terms such as title, writer, publisher, artist, album feature prominently. However they do not directly deal with the difficulties in the situation of searching for music in large collections to match the unknown item queries found in the area of music synchronization. They either focus on bibliographic metadata, which specifically deals with known item searching, or their musically specific formats fall outside the natural language queries of the Users, who are experts in their field (film-making, advertising) but not all are experienced musicians or music analysts.

Abrahamson discusses three types of musical analysis: structural, sociological, and semiotic. Structural analysis focuses on inner musical elements and style, while sociological analysis concentrates on how music is affected by social factors such as its production and consumption (2003:156-157). Semiotics of popular music attempt to analyse the meaning of music. It is clear that these organizations have taken a domain analytic approach to the development of these applications.

Hjørland (2008:86) raises the issue of the importance of extracting the meaning of documents when organizing them, and notes how this may not be as objective as the use of standards may imply. He discusses six approaches to KO: traditional, facet-analysis, information retrieval (IR), user-oriented, bibliometric, domain analytic and others (including semiotic, discourse-analytic etc). He recommends that classifying objects should be determined not by "*trivial or naïve description*" but by "*broader meaning-producing concepts*" (Hjørland & Nissen Pedersen, 2005:593) and that a pragmatic, rather than a positivist approach be taken. In the domain analytic approach documents are classified by their purpose, which reflects the paradigm in which they sit and the needs of the intended users ((Hjørland & Nissen Pedersen, 2005).

Specialized communities, such as the music and film industries or the even more specialized synchronization community, develop their own vocabularies and discourses over time (Buckland et al 2001). Analysing these discourses (including briefs, websites, promotional material and interviews) can inform a domain analytic approach as they will give insights into the special language and attributed meanings used within this discourse community. Understanding what elements of musical meaning are important to the community will help to identify the most relevant facets for organizing the music.

The inclusion of specialised descriptive metadata such as Subject and Mood especially, have been developed in order to reflect the wording of briefs and other types of query. These facets seem to be a response to the problem of matching musical and filmic meaning. Taking some examples from Figure 2 we can see how songs about 'Numbers', 'Sports', 'Memories' or 'Drinking' could be used to enhance the visual message of commercials or scenes in a film featuring mobile phones, training shoes, cameras or liquor. Similarly, from Figure 3, moods such as 'Dramatic', 'Passionate' and 'Sentimental' could equally be applied to describing scenes in a film or be associated with products.

The language and organization appears to reflect some of the special needs of this community (catalogue exploitation for the Owners, and synchronization for the Users) and the aim of these applications is to meet a particular need. This seems to relate to the use of music to enhance particular cultural meanings intended by the creators and other stakeholders to be carried to the viewer by combining it with moving images. The problem which arises frequently in interview is that there are no 'musical' rules to determine how to apply these descriptors. Although the textual content of a song lyric may be interpreted in a similar way by a range of listeners (and this is certainly not as likely as a unified interpretation of the content of, say, an academic paper), the musical mood can vary amongst listeners and even one listener can change their interpretation over time.

If this is the case then it may be suitable to use ideas from the field of popular music semiotics in analysing and indexing music for these purposes.

b. Semiotics of popular music

Tagg derives a checklist of 'Parameters of Musical Expression' (1999:29-31), stating:

> *"It is also vital that those parameters and the musical structures they create are related to the world outside the music, i.e. to the social and cultural position, intentions, motivations of those producing and using the music as well as to the functions and acoustic context of the music."(1999:28)*

This seems to reflect the domain analytic approach recommended by Hjørland (2002). In his checklist, Tagg recommends analysis should consider the communication of the parties involved in the process, their interests and motivations, attitudes and situations as well as detailed examination of non-musical texts (sleeve notes, venues, movements, visuals) around the music and musical parameters such as instrumentation (including timbre, performance techniques), composition (including texture and polyphony), temporal parameters (duration, tempo, metre), tone (pitch and harmony) and dynamics (soft/loud). Notably, otherwise all the analyst would end up with would be a list of facets, he also recommends analysing how the communication and the non-musical elements relate to the music itself. This holistic approach to musical analysis, if framed within the paradigm of music synchronization informed by a domain analytic approach, could be used to derive a comprehensive and useful analysis of music which would include the facets already discussed (such as Genre, Subject and Mood) and benefit the process of music search in this particular context. It should be noted that the level of detail of analysis, of course, should be informed by the findings of a deeper analysis of the discourses of this community. Although some of the search tools in this investigation do not give significant weight to 'musical' facets such as timbre, phrasing, compositional techniques and detailed harmonic parameters, intermediaries discussed how they used these types of factors to inform their choices when searching, and pointed out how these facets contribute to genre and mood definitions. A number are formalising this approach in new developments of these tools which are being designed for internal use and index by 'thickness' and 'key' as well as those made available to the specialist User by these tools.

vi. **Summary and Recommendations**

It has been shown that in order to exploit the material they control, record companies and music publishers have made an effort to develop systems that enable outside users to search areas of their catalogues when looking for music to accompany moving images. These Music Owners have developed categorisation techniques that are outside the traditional paradigm of music cataloguing and are specific to their domain. Although they index using bibliographic terms, they also use descriptive terms which are more important when Users are searching for unknown items. The key descriptive

elements appear to be Genre, Subject and Mood. Some musical terms such as Tempo are also important.

From the analysis of these search tools it has been shown that the Music Owners are partly taking a domain analytic approach to their music classification, making them appropriate for a particular use and User in terms of language and presentation. It is possible that ideas from the semiotics of popular music could inform more comprehensive classification. This may enhance these services which are reportedly underused and inadequate. There are some important issues that may be raised here:

- This subjective indexing needs to be consistent and reliable – although controlled vocabularies help this, they are inflexible and adding a new term requires the whole catalogue to be re-indexed;

- The music is indexed by humans who are not always experts – they do not always share the same codes and competences (members of other departments within a Music Owner may have different interests and motivations, and may not be experienced in the language of synchronization);

- It is clear that none of these tools search through the whole of their catalogue, which has either not been fully digitized, not been fully indexed, or has been narrowed down to exclude non-priority material;

- Excluding musical facets such as texture, harmony, key, timbre etc forces the User to search with subjective descriptions and then narrow down by listening;

- Interviewees frequently refer to the clichéd query "*quirky and upbeat with a bit of a build"*. None of the search tools here made it clear that they indexed facets of the type of *'a bit of a build'* (although 'build' did appear in some free text keyword searching);

- Although these applications were developed for the User they do not appear to be widely used by them. Some Owners use them internally but are not positive about them either because they do not offer useful results

sets or because they feel the human approach is more suitable to creative search.

- There are frequent occurrences of mis-applied keywords, mis-spellings, incomplete metadata, low precision and recall, poor stemming, inappropriate ranking, and difficulties in narrowing down or expanding results sets.

- Frequently Users employ similarity metrics to guide the intermediary. Although this type of approach its use is restricted in these types of tools because they can only refer to music they control for proprietary and copyright reasons. One MSE, however, is able to search a wide range of catalogues and does employ this as a query.

The existence of these tools indicates a commitment on the part of the Music Owners to a certain amount of disintermediation in this search process. Two of the companies stated they were currently Beta-testing new versions of these tools which were more comprehensive and flexible, however these are currently internal and not yet accessible for research purposes. From the insight given off-the-record in interview (not for detailed disclosure) these tools will be more fit-for-purpose than currently.

vii. Next steps

These systems were evaluated further by participant observation. In order to perform these evaluations a number of real-world written queries were collected and analysed. The next chapter discusses the analysis of these queries, which are known in the community as ‘briefs’.

6. ANALYSING QUERIES

i. Introduction

It has been shown in Chapter 4 how creative professionals search for music to accompany moving images in films, advertising, television and computer games. The ways in which some larger music rights holders (record companies and music publishers) organise their catalogues to allow online searching have also been examined, showing how these digital libraries are organised by various subjective musical facets as well as by artist and title metadata (Chapter 5). In this chapter, and in further pursuit of Objective 3 ("To identify music industry professional users of MIR systems and investigate their information needs and behaviour"), a facet analysis of a collection of written queries is discussed in relation to the organisation of the music in the bespoke search engines in Chapter 5. Subjective facets such as Mood and Genre are found to be highly important in query formation. Unusually, detailed Music Structural aspects are also key. These findings are discussed in relation to disintermediation of this process. It is suggested that there are barriers to this, both in terms of classification and also commercial and legal factors.

ii. Queries, or 'briefs'

Music Users, such as ad agency creatives and music supervisors, search for music for synchronisation. They generally deal direct with a number of expert intermediaries employed by the Owners, who interpret the query and perform searches of their own catalogues on the Users' behalf.

A number of Owners operate online search tools which are designed to disintermediate this process. In the previous chapter it was shown that Bibliographic and Descriptive terms are used in their music classification schemes. Some of these, such as Subject and Mood, are outside the traditional music classification paradigm.

Recent important studies in music user information need (Bainbridge et al, 2003; Cunningham et al, 2007; Kim & Belkin, 2002; Lee et al, 2007) have focussed on consumers. This chapter focuses on a group of creative professionals who may have

different information needs than recreational consumers. These professionals are choosing music on behalf of others, often to convey or reinforce a message. The search for music to accompany moving images is frequently an unknown item search. These professional Users often do not know specifically what they are looking for but they seem to have very clear ideas of what elements are important, such as Mood, Genre and Structure. In advertising they are also often looking for a suitable 30 second element, not the whole song.

This chapter discusses the analysis of a selection of 27 written queries. In the next section the Methodology is presented. Section iv discusses Findings, focusing on descriptive and bibliographic facets and additional ways of constructing and clarifying synchronisation queries. This is followed by a discussion on factors affecting whether the process may be disintermediated. Conclusions are summarised in Section vi.

iii. **Methodology**

During the course of the project 27 written queries (‘*briefs’*) were collected (as mentioned in Chapter 3,vi,e). These briefs came from creative music searchers who are employed by advertisers or brands to find music to be used in advertising, on websites and in corporate presentations. Five of these briefs related specifically to TV trailer use, 21 related to commercials (one was duplicated), one was for web-site use. Briefs are often sent by email to Music Owners when a music search is taking place. They attempt to encapsulate the search criteria for an unknown piece of music which will match existing footage. They are a rich source of information regarding the semantics of music search. They are often up to one page in length and include a range of detail explaining the Users search criteria to the catalogue Owner.

The aims of this approach were:

a) to investigate the semantics of creative music search;

b) to relate this to knowledge organization in existing bespoke music search engines;

c) to make observations on whether the process may be disintermediated.

The metadata used by a selection of MSEs has already been presented. The facets by which these systems are organised is divided according to whether it is bibliographic (eg Artist, Writer, Title) or descriptive (eg Mood, Subject, Genre). It was suggested that these systems are organized by taking a domain analytic approach – the Owners classifying the documents by purpose (Hjorland & Nissen Pedersen, 2005). This required an analysis of User discourses to evaluate whether they match the way the MSEs are organized. In pursuit of substantiation of this proposal, and for the purposes of this chapter, the 27 queries were analysed in depth and examined for links with and differences to the MSEs organization.

The briefs were imported into NVivo 8 software (QSR, 2009). This flexible Computer Assisted Qualitative Data Analysis (CAQDAS) package allows texts to be searched, coded, annotated and queried. Each brief was analysed word by word and phrase by phrase and coded according to facets derived from the previous MSE analysis (Artist, Title, Year, Genre, Subject, Mood etc). As new facets arose these were iteratively added to the coding list. When all of the briefs had been coded, the facets were ranked by frequency of appearances within the set of briefs (see Appendix v).

The sections that had been coded were then examined in turn in order to consider the words that had been used within each code. For example, in the code 'Artist' there were 11 references in total. It is a simple process with NVivo to isolate these references and analyse their role within the discourse of the query. This approach enables the researcher to consider not just the words that are coded (eg 'Pink Floyd') but also the words *around* the coded words:

> *"i.e. a classic piece of music like Pink Floyd - We don't need no education - a track which is about rebellion." (Brief 001)*

The value of this discourse analytic approach (Paltridge, 2006) is that it is the words on either side of the coded words that help to explain the context of the reference. In the example above, if 'Pink Floyd' were the only words considered, we would not appreciate that this is partially a similarity request rather than a known item request. The User is not solely asking for Pink Floyd's 'We don't need no education' (sic – the correct song title is 'Another Brick In The Wall Pt 2'). Pink Floyd are partly being used

as a similarity metric to give context to the request, although the User is also asking whether this song (or a version of it) is available.

A word frequency count was also performed on the entire query set. Irrelevant terms such as 'should', 'can', 'his', 'you' etc were discarded from the list. Facet terms and musical descriptors were concentrated on. Analysing this list gave deeper insight into the regularity of appearance of some key concepts. Again, the terms could be drilled down on using the software to reveal their context so they were not considered in isolation from the rest of the surrounding text.

iv. **Findings**

a. Descriptive Facets

By far the main facet used to describe the music being sought is that of Mood, which featured in 80% of the briefs. Positive descriptors such as *'charming', 'beautiful', 'fresh', 'playful', 'quirky', 'exciting'* far outweighed negative terms such as *'dark', 'uncertain', 'anxious', 'sinister'*. Notably these negative terms are mainly used as 'Exclude' terms in order to instruct the intermediary that music matching these would not be relevant for the search in question ("*Please do not pitch music with an overtly sinister, dark, or serious feel"*). Although a larger sample of queries could generate more 'negative' mood criteria it seems likely that as these queries are focussed on finding music for advertising, the users are looking for positive music moods to associate with and enhance consumers' opinions of their products. Mood has been used to match music to images since the time of silent movies (Rappee, 1924) and advertising theorists are well aware of its value in selling products (Alpert & Alpert, 1990). As a subjective facet it is not an ideal way to describe the elements of music that the user is looking for, as it is difficult to match the users interpretation with that of the intermediary or, indeed, the system. However the use of Mood (this is specified either for the sought music or to describe the desired 'feel' of the finished advert) far outweighs any other term employed in this set of queries.

Unsurprisingly Genre (*"heavy metal", "rock", "pop", "lofi", "folky", "classical", "jazz"*) is mentioned in many queries as a guide to the music being sought. Although Genre definitions are fuzzy, generally they are agreed by a community and

can be applied more successfully than more subjective terms such as Mood. Genre is a useful way for the search to be narrowed down, at least, and its widespread long term use in describing especially different forms of popular music as well as the three main genres (Art (Classical), Popular (Pop) and Folk) indicates it is an extremely valuable approach to music classification. The use of Genre terms can help as codes in describing music for a particular audience (products aimed at the youth market are often associated with contemporary pop), or which instruments would be appropriate (electric guitars do not often figure in classical).

Given the short length of the TV commercial, it is rare that a whole piece of music is used to accompany the footage, unless it is bespoke. The Users are looking for a specific element of a piece that they can use to convey their message to the viewer. They may discuss (in Music Structure) what musical elements they are looking for that may appear within a song: *"should have some quieter moments", "music evaporates into nothing", "build to a swelling, string-soaked chorus", "...with a crescendo in it"*. The word, *build,* in particular appears regularly in these queries and in other discourses surrounding these practices. These content-based criteria are very important to these Users on two levels. They help to convey the message to the viewer, and they also allow important Extra-Musical Factors (such as sound effects or voice overs) to be used successfully.

b. Bibliographic Facets

While the use of subjective facets seemed to be key in communicating Users' music needs to Owners, an equal number of bibliographic facets are also employed. The benefit of factors such as Date/Period (of recording being sought), key words required in Lyrics, Tempo, Instruments featured in the track and Chart Position is that they are easily attached to music documents as metadata and can be more reliable search parameters.

The value of Date/Period is that it can be matched to target Audience demographics, as well as being used to refine a general description of a style of music. There are relatively frequent references to finding music that is "*contemporary*", while other briefs refer to decades rather than particular years:

"Please avoid 80s electronica, retro tracks, or anything that could be considered 'old skool'." (Brief 011)

"Instinctively we think that the track we need is probably from the 50's or 60's, maybe the 70's." (Brief 012)

Songs that include particular lyrics are discussed. Examples of these include:

"We are looking for lyrics which need to be relevant and carry the ad. Think along the lines of ideas / imagination / optimism / growth / design / drive / movement etc etc..." (Brief 007)

"Lyrics and choruses involving sleep, eyes, waking, dreaming, touch, or some other direct link to the narrative, would be great." (Brief 012)

However lyrics are not always important and often Instrumentals (no vocals) are requested. This use of instrumentals not only gives space to voice overs (VO) and sound effects (SFX) but recognises the creative nature of advertising and sophistication of the viewers who are well-versed in interpreting these short messages without relying on lyrical reinforcement.

Content-based musical facets such as tempo and instruments are occasionally mentioned in this sample of briefs. It is interesting to note that by far the most frequent tempo descriptor is '*upbeat*', a term indicating a positive mood as well as a faster than average tempo. This particular combination here of affective and structural facets into one descriptor is very effective shorthand which appears so frequently in interviews on the subject as to become a cliché. Users also mention key instruments (piano, guitar, strings, percussion) they wish to appear in the selected music.

Artist name is occasionally used, mainly as a similarity guide rather than a known item search:

"We are looking for a recognisable song that reflects a 'Happy Goodbye'. Think 'My Way' as performed by Frank Sinatra." (Brief 023)

In fact it would not be easy for these MSEs to match items by similarity. They can only search catalogue they control and the example may not be within that control.

Intellectual Property (IP) legislation can prohibit them from including material not under their ownership, restricting their ability to develop this type of search functionality.

Chart position, on the other hand, is easily available to Owners and is a simple way to measure 'familiarity'. If a User requests a familiar tune this means it is likely to have appeared in the sales charts so searching by chart position can be used in a 'familiarity' search.

Although they are often the most important factor in deciding whether a piece of music is used (or not), budgets are rarely revealed in queries:

"..budget can be stretched." (Brief 001)

"..without being very costly!" (Brief 017)

"Don't worry about budget please." (Brief 024)

The expert interpretation of these Budget facets along with a knowledge of the brand's budgeting history and an understanding of which elements of the catalogue command different rates can lead to certain types of music being offered.

c. Visuals Facets

Although most queries in this sample focussed on advertising, a small number were concerned with looking for music for websites (1) or TV trailers (5). Mentioning the Format (ad, tv, website) in the query gives richer detail to the intermediary about the eventual use of the music being sought and is an additional clue to specific facets which may be of interest. These would include length (TV ads are normally 30 seconds long, while website uses may require the whole song, or a loopable section) and raise the issues of licensing – using a piece for a TV ad would require different permissions than web or TV trailer use. These may help the intermediary in narrowing down the search results to manageable levels. Other Visuals Facets, such as Project Title, Visuals Subject, Brand, Visuals Function and Visuals Available are also incorporated into the queries. These provide detailed contextual information for the intermediary and help to clarify the query further.

d. Query Clarification

There are a number of phrases within the queries where the Users attempt to clarify their query by discussing the role of the music within the finished advert. Music Function appears frequently. The Users describe how they wish the music to interact with the visuals, or how they want the music to enhance their message:

"...juxtapose against this theme..." (Brief 001);

"The music needs to complement the visuals without being too cold" (Brief 003);

"...reflect the charm and playful nature of the spot" (Brief 004);

"tidily juxtapose with the childlike imagery of the animatic" (Brief 007)

"reflect the gliding motion of the journey" (Brief 009).

The value in matching music to moving images is that one can enhance the other (in the case of advertising the music is designed to enhance the visuals, while with music videos it is the visuals that are designed to enhance the music). It is not clear from the queries how this is evaluated, and while other research indicates this is often a 'gut feeling' decision based on experience and creativity, there is also a wealth of literature which discusses music and its use with film since the end of the 19th century from which users may draw. Clearly this type of criterion can only be evaluated once the music is played simultaneously with the image. 'Demo' versions of the final advert are frequently supplied along with the query in order to help the intermediaries in their search.

While the bulk of the text of the queries describes what the users are looking for, they often also clarify what would not suit. These Exclude elements again are designed to guide the search by narrowing down the results set:

"we want to avoid anything that makes it feel like a middle class day out at the shops" (Brief 019);

"avoid anything too folky or dreamy", "something known will be tossed" (Brief 025),

"it is important not to emotionalise things too much" (Brief 026)

although careful interpretation by the intermediary is again required.

For the purposes of query clarification other intertextual references may be used, such as Films that use a particular type of music, Similarity to other suitable pieces or artists, and the option to the intermediary to offer a piece that does not appear to match the query but may be appropriate: this Left Field element, which also arose in the interview analysis, reflects the subjective nature of this type of searching, and allows the expert intermediary to make a contribution to the search using their own experience and interpretation of the visuals:

> *"Please also feel free to suggest anything off brief that you think works well to picture, we are open to suggestion no matter how left field." (Brief 007)*

> *"But feel free to send other suggestions if you think they work." (Brief 012)*

There are many anecdotal examples of music being used in commercials that did not meet the original brief and were supplied by the intermediary as a 'Left Field' suggestion:

> *"She just threw that in as a kind of a random idea, and they went for it." (007 record company)*

> *"Sometimes you have to come up with something that's completely off the wall that the director won't have thought about" (002 music supervisor)*

v. Whither Disintermediation?

It has been shown that music briefs describing music which will accompany moving images incorporate a range of content-based music facets and additional contextual detail. Some of these can be matched with bibliographic metadata, while others (tempo, instruments, and especially structural facets such as crescendo or build, can be retrieved using state-of-the-art content-based retrieval. However a large number of subjective facets are used, relying on a shared understanding of the meaning between the User and Owner. The expert intermediaries employed by the Owners are well-versed in interpreting these queries, may have the opportunity to discuss them in detail

with the Users and sometimes view a copy of the piece of film in question to help in their search.

Building a searchable digital library that suits this verbose and subjective type of request is not an easy task. Granted, some of the bibliographic facets can be dealt with by applying suitable metadata fields, but these have to be accurate if they are to be of any value. Songs are often classified by inexperienced humans leading to inconsistent and unreliable metadata. With regard to the bibliographic facets this is a solvable problem. However it appears from this analysis that these searches rely more on descriptive metadata and detailed musical structural facets than factual bibliographic detail. This means that if the process is to be satisfactorily disintermediated the focus needs to be on successfully matching query terms with relevant and suitable metadata combined with successful feature extraction and state-of-the-art content-based retrieval techniques.

a. Mood

Consider Mood. Users employ a wide range of words:

> *'charming', 'beautiful', 'fresh', 'playful', 'quirky', 'exciting', 'dark', 'uncertain', 'anxious', 'sinister'.*

The MSEs also use a wide range of Mood descriptors from controlled vocabularies, which are presented to the User for them to select the most appropriate to their search:

Figure 9 MSE moods (Inskip et al 2009a)

Encouraging a User to select a Mood from a controlled vocabulary, rather than asking them to input it as a keyword, means the Owner is also involved in encoding the query to match the system. The User is not solely involved in encoding the query to match the music being sought. This can remove the creative element of the search from the User and may dissuade them from attempting to perform their search online. Clearly, if the Mood choices are to be presented to Users then it is important to investigate how they determine whether a piece is '*charming'*, '*beautiful'* or '*fresh'* and develop the controlled vocabulary accordingly. This applies equally to Genre, although as previously stated, Genre is less subjective than Mood. The variation in interpretations of the cultural meanings of music reinforces the value of taking a domain analytic approach when developing music search tools (Abrahamson, 2003).

b. Music Structure

It is highly unusual that these searches are focusing on a small element of lengthier works. The viewer only hears up to 30 seconds of music in a TV commercial, often less. Most popular songs last around 3 minutes. It is very important in the search process that the part of the piece that matches the search criteria is found. Songs may vary in mood, tempo, may have crescendos at the middle or the end. The whole song has to be listened to in order to find out whether it includes a relevant section.

Advertising creatives have little time and would benefit from being presented with the 30 second element of a song that matches the query rather than be forced to listen to an entire song. When the human intermediary does the search s/he may know where in a piece the '*build'* takes place and possibly will direct the User to this section of the music. Disintermediation could perform a similar function. Content-based retrieval tools that search music signals for Music Structural facets such as crescendos, solos, and specific instrument onsets would be of particular value in this area.

c. Copyright And Competition

It may be that a 'global' search system may help the searchers who are time poor by saving them doing the same search on multiple services. However there are legal and business hurdles to this solution. Record companies may not use lyrics without permission – they are controlled by music publishers. Conversely, music publishers may not own the recordings of the compositions they control and would need permission to include them in their online catalogues. If this problem is combined with the fact that these services are designed for the exploitation of catalogue in a highly competitive industry then collaboration between Owners is difficult. However it is not unsurpassable. There is currently one service, Ricall, which unifies a selection of client catalogues in an attempt to simplify the problematic element of the search process relating to Users having to use numerous interfaces for one search.

vi. Conclusion

Anecdotal evidence suggests that historically, although there is the will to disintermediate the process, there have not always been the resources or the technology. A number of MSEs were developed up to five years ago in a rush to compete for business. They have not all been updated to keep up with web and search engine technology, although there are exceptions with some services currently in re-development and not available for analysis.

It appears that although the Music Owners are designing search tools for Users who wish to search online the possible mismatch between the Users' approach and that of the Owners must be considered. If successful disintermediation of these services is to take place then the Users and their contexts have to be considered in detail.

It is hoped that the long term value of this research is not only to the commercial users of creative search represented in this study, but to wider users in the general public who wish to choose music to accompany home videos, slide shows and presentations. Disintermediation of the search process is a reality and is a central aim of the retrieval community. This research examines whether currently available MSEs, only available for commercial use, match real information needs of a small researchable group of Users. Results have regularly been circulated amongst the participants and also in academic and professional music information retrieval and library and information management circles in the hope that they benefit not just the commercial world but inform wider systems development.

vii. Next steps

This chapter has presented an analysis of the facets used in written queries designed to facilitate the process of unknown item search. In the next chapter the briefs are applied to the search engines and results generated are evaluated for their relevance by participants who search for music on a daily basis.

7. RELEVANCE

i. Introduction

Music is a complex concept and, although there are some similarities between music and text in terms of search, there are also some significant differences caused by this complexity (Downie, 2003a). Although known item searching for music can be dealt with by searching metadata using existing text search techniques, human subjectivity and variability within the music itself make it very difficult to search for unknown items. This chapter examines these problems within the context of text retrieval and music information retrieval and relates to Objectives 1 ("To overview the literature relating to MIR and evaluate how it relates to traditional Information Retrieval"), 4 ("To evaluate whether the results of their searching meets those needs") and 5 ("To identify, investigate, analyse and evaluate various retrieval systems used in music industry MIR"). The focus is on examining the relationship between music relevance criteria and those relating to relevance judgements in text retrieval.

The next section discusses the concept of relevance and, in particular, relevance criteria arising from studies of users of text retrieval systems. This is followed by a discussion of the contribution of relevance to evaluation, concentrating on music information retrieval systems. The approach and methodology are then presented, which involve analysing relevance judgements of music experts in the context of choosing music for television and cinema commercials. Finally the findings are presented and discussed in relation to other work on relevance criteria. This leads to the conclusion that relevance judgement categories in music appear to relate strongly to earlier findings in those relating to text, despite the many differences between music and text in their actual content.

ii. Relevance

The purpose of evaluation is to measure the performance of an information retrieval (IR) system and help determine how effective it is at meeting the information needs of the users. The established measures for systems evaluation are precision (the extent to which the system is able to leave behind non-relevant items) and recall (the

extent to which the system is able to find relevant items). There is a range of user-oriented evaluation measures (Bawden, 1990) which attempt to reflect the real world, but relevance and its related measures of precision and recall are often key to the user experience. In order to determine precision and recall, or

> *"the probability of agreement between what the system retrieved or constructed as relevant (systems relevance) and what a user or user surrogate assessed or derived as relevant (user relevance)" (Saracevic, 2007a)*

an agreement on a definition of relevance is required. Even in the case of text this is not clear-cut, although a relevant document may be described as being one that satisfies a user's Anomalous State of Knowledge (ASK) (Belkin et al, 1982). In his comprehensive review of the relevance literature, Saracevic discusses how

> *'relevance is a, if not even the, key notion in information in information science in general and information retrieval in particular" (Saracevic, 2007b:2126).*

Indeed, much information retrieval work relies on broad agreement on the concept of relevance. This 'broad agreement' is important. Despite much research and reflection on the concept it has been difficult for the community to agree on either a definition or a theory of relevance. The problems in agreeing on the *manifestations*, *behaviour* and *influences* (Saracevic, 2007a) are profound, and centre on the personal, subjective and intuitive nature of this experience. In other words, when presented with a set of documents, humans seem to be able to choose which of those documents suit their purpose, and which do not, but there are no strict rules for these decisions, although the attributes of relevance may be summarised to include relation, intention, context (internal and external), inference, selection, interaction and measurement (Saracevic, 2007a). Mizzaro also discusses how

> *"there are many kinds of relevance, not just one" (Mizzaro, 1997:811).*

His framework, derived from his comprehensive review, is based on a relationship between, on one side, *document*, *surrogate*, or *information* and, on the other, *problem*, *information need*, *request* and *query* (Mizzaro, 1997:811) or, again, a measure of the match between aspects of the user experience and an output of the system.

Judgements of relevance compound these difficulties. Mizzaro's analysis of relevance judgements identifies

> *"the kind of relevance,… the kind of judge, … what the judge can use to judge,… what the judge can use to express judgement,… the time at which judgement is expressed" (Mizzaro, 1997:812).*

He identifies the period 1977 onward as being a key period for user studies, the mid-1990s being a defining moment for investigation into relevance criteria.

If relevance is 'subjective, cognitive, situational, multidimensional, dynamic and measurable' (Schamber, 1994) then it is central to its understanding that users are investigated, a paradigm shift called for by Park (Park, 1994) amongst others. A number of qualitative research projects (including Barry, 1994; Barry & Schamber, 1998; Park, 1993) attempted to identify key criteria in users relevance judgements. Schamber arranges 80 such criteria in a table (Schamber, 1994:11). Harter (Harter, 1996) also comments on the wide range of criteria derived from such studies. Saracevic summarises these criteria, which he calls '*clues*' (Saracevic, 2007b:2130), noting that although there is variety in their labels, they are 'remarkably similar' in concept. He generalises them into groups, detailed in Table 8 (below).

Information characteristics	
Content	Topic, quality, depth, scope, currency, treatment, clarity
Object	Characteristics of information objects, eg type, organisation, representation, format, availability, accessibility, costs
Validity	Accuracy of information provided, authority, trustworthiness of sources, verifiability
Individual characteristics	
Use or situational match	Appropriateness to situation, or tasks, usability, urgency; value in use
Cognitive match	Understanding, novelty, mental effort
Affective match	Emotional responses to information, fun, frustration, uncertainty
Belief match	Personal credence given to information, confidence

Table 8 Adapted from Saracevic (2007b): Information and individual characteristics

The arrows indicate the dynamic relationship between these characteristics where relevance judgements are concerned:

As this research is looking at a relationship between information and the individual, clearly the content of the document and the context of the individual are important contributors. This context is not only cognitive but also social: considering the role of socio-cognitive relevance in interactive information retrieval (IIR) systems (Cosijn & Ingwersen, 2000) then this will include not only the system and the user but also the environment, giving rise to a holistic approach to evaluation. The issue of context in IIR (Anderson, 2006; Ruthven, 2008) is a key topic in information retrieval in the new century: human behaviour is operating within the larger system of socio-cultural codes and competences which are likely to influence cognitive processes, and relevance judgements are wider than purely relationships between user and information. The content of documents has been central to the development of IIR systems. Algorithmic or system relevance and topical or subject relevance focuses on document (or surrogate) content, while cognitive relevance or pertinence, situational relevance or utility and affective relevance may draw influences from both content and contextual factors (Saracevic, 2007a).

Algorithms attempt to rank a selection of documents drawn from a system in order of relevance by examining such criteria as the frequency of key words appearing in the document and where in the document the key words appear. In known item searching (*'I am looking for the text of Gordon Brown's resignation speech'*) it can easily be determined whether the documents found by a system are relevant or not. This is a binary (yes/no) decision and a system with high precision will successfully retrieve a number of documents containing this information. In unknown item or question answering search (*'I want to know whether tadpoles eat mosquito larvae'*) this can be a more difficult decision and the user needs to review each document to establish its relevance. This is normally determined by whether it resolves their information need. A system which has high recall will offer a large number of results, probably containing the words 'tadpole', 'eat', 'mosquito' and 'larva'. If one of these documents answers the question, the search is complete, if it does not, the query may be revised by the user and a new set of results reviewed.

It is possible to see a link between text and music retrieval. In known item search for music (*'I want to hear David Bowie's 'Heroes' sung in German'*) it is easy to determine whether a system has successfully met this request by the user listening to a short extract of the piece (as long as the piece includes sung vocals), and it is likely that the system will find this using metadata text search, if the recording is in the system. All other versions of the song ('Heroes' in any other language, sung by Bowie, or covers of 'Heroes' sung in German by other artists) will not be relevant. Again, this is a binary decision. This may also be the case when a user is searching for a known piece of music (Bowie's 'Heroes' in German) but cannot remember or does not know the detail, which may give rise to the query *'Find me a song about brave men or supermen sung in German by a male singer'*. This could generate a range of results including extracts from Wagner's Ring Cycle, German covers of Laurie Anderson's 'O Superman' and schlager versions of 'Scotland The Brave', depending on the collection(s) being searched. The user, again, would have to browse through the list and listen to the results until the relevant item was found. There is still only one correct (and many incorrect) answers to this query, however.

Music search engines (MSE) face a very difficult problem if users do not know which song they are seeking *'until I hear it'* – a frequent situation when searching for music to accompany moving images. A clichéd query, already introduced, would be *'I'm looking for something quirky and uplifting with a bit of a build'*. In MSEs these subjective ('*quirky*', *'uplifting'*) and musical-feature ('*build'*) descriptions can be applied to metadata fields using human indexing. Unfortunately *'quirky'* could be based on rhythmic, lyrical, genre or non-musical cultural features, one listener or indexer's '*uplifting'* may be another's '*inspiring'*, and a '*build'* could be anywhere in the piece (or may be mistaken for a lyric, artist or title element). These difficulties need to be accounted for when determining the precision and recall of a particular system. The fact that there is not one correct answer and that the user wishes to choose rather than be told which is the 'best' choice, suggests that successful systems may need to have higher recall than precision.

iii. **Evaluation of Music Information Retrieval Systems**

Rasmussen recommends that relevance should relate to the task context if it is to reflect a user-centred approach:

> *"Because evaluation is based on query averages for precision and recall, there is little emphasis on the flexibility to match user needs and outcomes. From the user's perspective, process and strategy may be as important as outcomes, and mechanisms to study process and measures to evaluate it are still lacking." (Rasmussen, 2003:48)*

This view is supported in image retrieval, for example, where Sormunen et al (1999) recommend:

> *"In outlining an evaluation framework, the first task is to define the function of a system that is to be evaluated. The framework has to include a description of potential users, their needs and the performance criteria relevant to users." (Sormunen et al, 1999:4)*

Here, image retrieval evaluations consider the users, focusing on the problems they have in formulating queries, noting that they prefer browsing over query, and that their final decision is made using criteria which can be difficult to identify as they are not clearly based on image content or textual descriptions. Although there are many differences between images and music, these considerations frequently arise in MIR, particularly in unknown item searching.

The MIR community have been evaluating algorithms in an annual 'contest', MIREX (Music Information Retrieval Evaluation eXchange) (MIREX, 2009), since 2004. This was informed by a rigorous research and consultation process using TREC (TREC, 2010) as a model. MIREX was established to deal with three main issues in MIR evaluations:

> *"1. no standard collection of music against which each team could test its techniques; 2. no standardized sets of performance tasks; and, 3. no standardized evaluation metrics." (Downie 2003b)*

These three issues are aspects that TREC have recognised as key to scientific evaluation (Downie, 2003c), confirmed by Voorhees (2003) during the MIREX consultation process. Downie (2003c) highly recommends the use of precision and recall as metrics when evaluating systems and algorithms. However the MIR community is not united in this approach and the participants employ a wide range of metrics.

Rüger (2003) also discusses how a wide range of tasks in MIR (ad hoc searches, audio identification, classification, feature extraction) should be identified, each requiring specific approaches to evaluation. This reinforces the point that while precision and recall are appropriate system evaluation metrics they are not always the best measures. Downie (2003b) in effect summarised the key issues: defining relevance, building consensus and structuring reliable and valid tests. He also strongly urged for representation from a wide range of disciplines and that the needs of users be recognised by the evaluations and the community as a whole.

In the light of these and other ongoing discussions, in MIREX teams of researchers agree on performance tasks, such as Genre Classification, Artist Identification and Mood Classification. Each task is evaluated using metrics specific to that task and there is no blanket application of precision and recall. Accuracy was the predominant evaluation measure in 2004 and 2005 (MIREX, 2009). In 2006 a clearer focus was brought onto precision and recall (onset detection, query by singing, melodic similarity) while an additional range of statistical analysis was also used (p-score, f-measure, ANOVA) (Downie, 2008), which was no doubt applauded by Flexer (2006) who had called for a more rigorous approach to statistical evaluation in MIR.

If precision and recall are to be more widely used in MIR evaluation then determining relevance is paramount. As it can be problematic to determine the 'meaning' of music when there is no 'ground truth', relevance decisions are difficult. In an attempt to resolve this, Downie proposes that:

> *"there should be enough information contained within the query records that reasonable persons would concur as to whether or not a given returned item satisfied the* ***intention*** *of the query." (Downie, 2003c)*

This approach has been taken on board by a number of MIREX participants, who gather ground truth data from human volunteers who participate in evaluations (including, for example, Gruzd, 2007; Mandel & Ellis, 2007; Barrington et al, 2009; Law & Ahn, 2009), generating subjective ground truth sets which are required when there is no objective ground truth available. Although this can be time consuming and expensive, and can be inaccurate, owing to the listener's subjectivity, and corrupted (Downie, 2008), it does indicate a worthy attempt to solve this problem and indicates a move towards user-oriented evaluations. In terms of the 'accuracy' of the ground truths collected for these types of evaluation much work is done to cross-check judges evaluations against others, outliers being discarded. While this recognition of the problem of subjectivity recognises the problem of consistent categorisation and attempts to reduce inconsistency, it does not examine the cause and extent of variations in interpretation. The 'ground truth' of the judges in MIREX, therefore is, perhaps, only one ground truth of many. This may reflect a positivist research paradigm adopted by the MIREX participants and does not allow for a holistic view of the systems and tools under investigation.

iv. **Research question**

In the pursuit of Objectives 4 and 5, part of this research involves evaluation of a selection of 6 MSEs, operated by major companies in the music industry, which have been developed for the purpose of disintermediating the process of music synchronisation. A set of 27 real written queries ('briefs') have been collected from creative music searchers. These verbose and subjective queries relate to the information needs of the makers of TV and cinema commercials and TV (the Users). Their purpose is to communicate their need to the rights holders (Owners) who then use this information to generate search result sets. The question is 'how do these creative professionals relevance criteria relate to users' relevance criteria identified in text retrieval studies?' It is hoped that these findings will contribute towards the under-researched area of defining music relevance and thus towards appropriate systems development and evaluation.

v. **Methodology**

Keywords and concepts were extracted from the briefs and applied to each Music Search Engine. This generated sets of results. These results were then evaluated by expert intermediaries to determine

> *"whether or not a given returned item satisfied the **intention** of the query" (Downie, 2008).*

A range of facets used within the search engines and identified by Inskip et al (2009a) were used in coding the queries. If a term arose which did not match existing facet codes a new code was generated. This iterative approach led to a comprehensive set of facet codes which were applied to a set of written briefs, as in the example below:

Query 009 (coded):

> *009.*
>
> *We are looking for a <MOOD> cool </MOOD> <MOOD> fun </MOOD> <TEMPO > jaunty </TEMPO> and <MOOD><TEMPO> upbeat </MOOD> </TEMPO> track with a <MOOD> happy vibe </MOOD> and a certain <MOOD> feel good factor </MOOD> <MOOD> it shouldn't take itself too seriously </MOOD>. Ideally it should be from a <DATE> new </DATE> and <DATE> <CHART> up-and-coming </DATE> </CHART> <ARTIST> artist </ARTIST> ; [client] <MUSIC FUNCTION> would like to be associated with a <MOOD> fresh </MOOD> <DATE> new sound </DATE> </MUSIC FUNCTION>, and not with something*
>
> *<DATE> old </DATE> or <DATE> dated </DATE>.*
>
> *<MUSIC FUNCTION> The music should guide us through the story and mirror the*
>
> *<VISUALS SUBJECT> positive journey the main character is taking </VISUALS SUBJECT> </MUSIC FUNCTION>. <VISUALS SUBJECT> He is in his own little world of fun, which contrasts with the busy urban surroundings </VISUALS SUBJECT>. The music should be <MOOD> positive,*

</MOOD> <MOOD> easy going <MOOD> and <MUSIC FUNCTION> make the listener smile. </MUSIC FUNCTION>

Although the overall tempo of the song should be <TEMPO> upbeat </TEMPO> to

<MUSIC FUNCTION> reflect the gliding motion of the journey, </MUSIC FUNCTION> <TEMPO> the pace should be varied, </TEMPO> and the track <MUSIC STRUCTURE> should have some <VOLUME> quieter </VOLUME> moments and enough space to accommodate <EXTRA-MUSICAL> sound effects <EXTRA-MUSICAL> </MUSIC STRUCTURE> –

<VISUALS SUBJECT> the character will be going down the slide at different speeds at different points, occasionally slowing down or even stopping. </VISUALS SUBJECT> <EXCLUDE> Please avoid </EXCLUDE> anything too <GENRE> folky </GENRE> or <MOOD> dreamy. </MOOD> Any <LYRICS> lyrics should relate loosely to the story of the ad, which conveys a positive journey. </LYRICS>

<EXCLUDE> Please avoid any songs with <LYRICS> specific lyrics, e.g. to do with driving a car.</LYRICS> </EXCLUDE>

Each coded query was to be applied to each of the six search tools, giving a maximum of 162 results sets. However it was found that a number of queries from one source (a TV company 'trailers' department) were not suitable for coding as they contained no direct information about the music required for the trailer, this decision being left entirely to the creative making the trailer. These entirely contextual briefs were discarded from the coding exercise as none of the services had the facility to construct a query using the information contained within the brief. After removing duplicates the set of briefs was reduced to 19. Queries were applied step-by-step. In some cases applying all facets led to a return of no results. In these cases terms were removed from the query until a manageable set of results (preferred number of 10) were returned. If a larger set was returned from using all the terms then the first ten results were kept as a results set.

The results sets of up to 60 results for each brief were made into numbered playlists using Spotify software (Spotify, 2009). Spotify is a web-based application which allows users to listen to a large selection of streamed music without infringing copyright regulations. This application was chosen because it is widely used by the participants in their work and would allow the playlists to only be accessible to all the members of the panel of experts during their observations by researcher log-in, without infringing copyright by downloading material. Although not all of the material was available on this service it was felt that sufficient songs were included to make the use of the application valid. For example, in observation 024SPOT, 49 songs were generated, and 41 of these tracks were available on Spotify. These were randomised to make the source rights holder less obvious in case of bias.

Figure 10 Spotify screenshot 024SPOT

Seven of these playlists were then evaluated by seven creative music search experts, each listening to and commenting on the songs on one list. The experts were drawn from a pool of previous interview participants and others who had not previously been interviewed but had been recommended as possible participants by interviewees. This satisfies the snowball sampling approach used to select research participants throughout this project. Each expert participant was presented with a written brief and asked to read it. They were advised that they could write on the brief if they wished.

They were then asked to listen to tracks that had been generated by the briefs being applied to the search engines and comment on '*whether or not the track meets the brief*'. Each observation session lasted for around 45 minutes and most participants completed their allocated playlist within this period. Creative music searchers' time budgets are limited and care was taken not to make them unwilling to take part in future research by burdening them. It was felt that it was more important to generate rich and detailed data than to elicit relevance judgements on every song on the list. The sessions were recorded using a digital voice recorder and transcribed (including repetitions and pauses) within 48 hours. The data was then analysed to gain insight into the relevance judgements of this group of music searchers. This methodology is discussed in more detail in Chapter 12.

vi. **Findings and Discussion**

The relevance judgements, anonymised numerically here, were coded in detail, using codes extracted from the MSEs but iteratively generating new codes when terms were introduced that did not fit into the existing framework. These codes were then quantified, ranked by frequency, and categorised according to Saracevic's (Saracevic, 2007b) information and individual characteristics (Table 8). These characteristics were also categorised as to whether they were context- or content-based. This gave rise to Table 9, below:

Context or content	Characteristics (Information)	Code	Quantity
Content	**Content**	Mood	327
		Genre	97
		Lyrics	81
		Date	76
		Production	64
		Instrument	60
		Tempo	47
		Music structure	45
		Music function	40
		Vocal	39
		Artist	24
		Music style	22
		Instrumental	18
		Build	12
		Version	11
		Song title	3

		Feel	3
		Volume	1
		Song subject	1
	Characteristics (Individual)		
Context	**Use / situational**	Visuals subject	33
		Extra-musical	24
		Audience	14
		Visuals	13
		Brand	9
		Time availability	4
	Object	Budget	16
		Clear	14
		Syncability	9
		Territory	4
		Format	3
		Owners	1
	Content	Similar	7
	Cognitive	Novelty	84
		Message	8
	Belief	Would not pitch	13
		Would pitch	2
	Affective	Subjective	25

Table 9 Coded criteria and characteristics

a. Musical content

In the context of previous findings it did not come as a surprise that 'Mood' criteria clearly outweighed all other content aspects. References were predominantly drawn from the briefs themselves, although there was noticeable addition of mood criteria which did not appear in the briefs but were raised by the participants.

Mood criteria exceed others in frequency in the briefs themselves. The affective nature of music description has previously been identified as being popular amongst unknown item music searchers (Kim & Belkin, 2002). Affective aspects of content, however, are not often discussed as relevant criteria in the text-retrieval literature. Text users' relevance criteria appear to be more related to the 'topic' of the document (Borlund, 2003) or the 'goal' of the user (Park, 1994), hence the development of IR systems which determine the 'subject' of the document from its word content. Determining the 'meaning' of music, its 'subject' or 'topic' is only possible from the

perspective of the listener, not from the content alone (Inskip et al, 2008a). Lyrics can be used to elicit perceived meaning but this can vary widely between listeners and is very context-sensitive. Determining 'mood' is equally problematic:

"…it doesn't sound 'fresh' in any way whatsoever to me…" (024SPOT);

"But it doesn't have enough of that sort of the playful sort of nature" (026SPOT);

"So essentially the first element, for me, could mean absolutely any piece of music whatsoever." (027SPOT).

However its wide useage as a content-based relevance criterion means more work has to be done on determining the meaning of mood descriptors if music IR systems are to truly reflect human information behaviour.

Some musical criteria (lyrics, date, artist, song title) are factual and can be presented via textual metadata. As relevance criteria they are easy for a system to resolve. They are used frequently in these observations, indicating their importance as expressions of musical relevance:

"Lyrically it's not very appropriate" (026SPOT);

"lyrically, I mean it would work" (026SPOT);

"Obviously I think lyrics are a massive thing here" (027SPOT);

"I don't think the lyrics are really going to work" (028SPOT).

Other aspects, such as 'production', 'song subject', are not so easy to define using metadata, either because of multiple sub-criteria (production can be defined by a wide range of factors ranging from the name of the producer, the period or 'feel' of the recording to the density or number of instruments) or because of the multi-layered meanings of the successful pop song:

"more polished production more – more commercial sounding" (030SPOT);

"Could work, maybe a bit in your face" (028SPOT);

"it's quite clean and precise" (027SPOT);

"the production does sound sort of karaoke" (026SPOT).

Despite the problems in defining many of these criteria they are still widely used in making relevance decisions. Feedback between the Users and the intermediaries and Owners helps clarify briefs and establish mutual agreement on the meaning or relevance of the music in question.

b. Contextual

The most frequently used contextual criterion was that of 'novelty':

"it sounds very clichéd" (024SPOT);

"heard this a million times" (026SPOT);

"It could fall into standard ad music category" (027SPOT);

"It's been heard before" (029SPOT).

This is a cultural phenomenon based on the fact that this music use is within the context of a highly competitive industry determined to get the attention of the distracted television viewer. It is widely believed in the industry that a novel or previously unused piece or style of music is more likely to gain their attention, hence the need to find 'previously unused' pieces of music, although these must not be so far out of the viewers experience as to alienate them from the product being presented in the commercial. This cognitive criterion cannot be found within the music itself but only through an analysis of the history of uses of that piece of music (and music of a similar type) in synchronisation and in wider culture. It features as a keyword and also as a criterion not featured in the brief and is frequently discussed in interviews on this subject as a key 'unknown item' relevance criterion.

The 'characteristics of the information object', or, here especially, the availability and cost issues, are also brought in by the participants as relevance criteria. The budget, likelihood of successful clearance, territory, and ownership factors are indeed relevant to whether an intermediary will present a piece of music for consideration.

"even if they could afford it, which is unlikely" (025SPOT);

"it's certainly going to be cheap" (026SPOT);

"would the client want to pay for a Vangelis piece of music that people wouldn't recognise" (030SPOT);

"Mercury Rev are not going to allow their track to be used for a washing powder ad" (025SPOT);

"Not going to get cleared for an advert." (027SPOT).

If they present something that will lead to difficulties or unexpected expenses in business negotiation this is likely to cause problems between them and their clients. The 'syncability' of a piece of music, or, more likely the syncability of a genre, specifically rap and hip hop, American R&B and various forms of heavy rock are frequently discussed:

"hip hop stuff's really difficult to to sync" (024SPOT);

"hip hop, r&b that kind of thing steer clear of" (026SPOT);

"I've never licensed a piece of R&B" (027SPOT);

"hip hop's always a tricky one" (028SPOT).

It is agreed at all levels that these genres are 'unsyncable' and were often dismissed from these evaluations even without being played, purely from the Artist information. It is acknowledged that these observations took place in London and are specific to British advertising and likely that cultural differences will make significant difference to this particular judgement if one was looking at, say, the American market.

Use and situational aspects are also brought to bear in relevance decisions. The subject of the visuals, which were not available to the participants apart from as described in the brief, is a key factor determining the relevance of the material chosen. If a visual is described as '*cold and clinical*' (Brief 026) then the intermediary makes a relevance decision based on whether the music is '*cold and clinical*', or whether it could be described as such. Matching musical elements to visuals is a highly subjective and

contextual problem, although it does vary in complexity according to the concepts used in the description and the weights ascribed to the criteria in the brief.

> *"it's something that I think I'd probably put to picture, just to just to try it" (026SPOT);*
>
> *"it's not going to slow down the visuals" (027SPOT);*
>
> *"clearly you have to see it first" (029SPOT).*

Extra-musical criteria, such as voiceovers or sound effects are often added to the soundtrack of a commercial and frequently the participants discussed how the music needed to leave space for a voiceover or sound effects:

> *"I don't think it would have any space to accommodate sound effects" (024SPOT);*
>
> *"is probably going to clash with a voiceover" (25SPOT);*
>
> *"it doesn't actually mention anything here about voiceover" (026SPOT).*

The intended audience also impact on the choice, and matching the music to the demographic is often thought of as being extremely important to the eventual choice.

> *"it's not going to appeal to most purchasers of washing powders, which is going to be woman ages 25-45" (025SPOT);*
>
> *"it depends on who they're trying to sell it to, what the demographic is" (027SPOT);*
>
> *"to appeal to the kind of the middle class older generation and also the younger demographic as well." (028SPOT).*

This is even tested by the Users when the commercial is completed, as an 'end-user' relevance evaluation. Other important situational aspects include whether the music would suit the brand, and the time available to the creatives involved in the process.

Finally, the belief aspect, or 'personal credence given to information, confidence' (Saracevic 2007b:2130) indicates whether (or not) they would pitch a track, determined by their own tastes and gut instincts. If a track meets all other aspects of a brief but does not match the taste or world view of the intermediary it is dropped:

> *"that works to a certain degree. I wouldn't pick it though. Haha" (027SPOT);*
>
> *"Not something I'd particularly like, wouldn't pitch it, but it's probably the kind of thing that they might want to hear." (024SPOT);*
>
> *"Gary Glitter, I just wouldn't put him forward because he's a bloody paedo. But let's listen to it." (029SPOT).*

The belief systems of the creatives are, with some, the bottom line. They are using their choices in music to identify themselves amongst a number of competitors and expressing their expertise through presenting a set of results which will be particular to them and not replicable by another searcher.

vii. **Summary**

These observations show that the relevance judgements of these participants are framed within Saracevic's schedule of Information and Individual criteria. This reinforces and builds on the work of the text-retrieval user studies of the mid-1990s. The relevance judgements of these creative music professionals are situated in a socio-cognitive paradigm. They do not only make judgements based on whether a piece 'sounds' right (content criteria), whether it includes elements that appear to match the brief (content and context), but also whether the piece would be used by the end User (contextual criteria).

Many criteria which are not explicit in the query, some content-based but mainly contextual, are added by the experts, using their own codes and competences, when reviewing the material. For example there is often no mention in the brief of business issues such as whether the artist would allow their music to be used to advertise this type of product or whether the available budget would cover the music suggested for use, but these issues come up frequently in the comments relating to this query when the participant is making their relevance decisions:

"Someone like Barbara Streisand's just going to be – she's going to be expensive. That's obviously something that comes in down the line. But it's still, you know, especially you know, when you're looking at something – well looking at anything, you need to take that into consideration. So that obviously it's not a creative thing, but it is something that limits us." (026SPOT);

"All I'd say is good luck with licensing Jethro Tull. For a mobile phone commercial. [haha really?] yes [they're tricky are they?] yes. incredibly expensive. In my experience." (030SPOT).

These and other contextual criteria rarely appear in the briefs but are used extensively in the relevance decisions of these participants and are based on their extensive experience working in this area.

viii. Conclusion

Saracevic's observations on relevance criteria have been discussed in reference to findings using a data-rich collection of relevance judgements by creative professionals searching for unknown musical items to accompany moving images using real world queries. It has been shown that the criteria synthesised by Saracevic from his thorough review of user evaluation literature in text retrieval correlate strongly with those arising from a close analysis of expert music user observations, particularly how a range of measures may be used depending on criteria and approach. The participants in our observations use a range of content- and context-based criteria, taking a socio-cognitive approach. Their information criteria are predominantly Content based, although Object aspects are also important. Validity is not a key concept and does not often arise. Individual characteristics are predominantly Use and Cognitive, although Affective and Belief aspects also have an involvement.

Overall relevance judgement categories in music, therefore, appear to relate strongly to those relating to text, despite the many differences between music and text in their actual content. However the importance of the highly subjective nature of musical features such as 'mood' and the wide ranging technical difficulties in extracting features from music mean that the development of systems that are able to comprehensively reflect the users' situation is a highly complex problem. It is hoped that, as those

systems are built and evaluated, approaches are made to incorporate increasingly higher levels of relevance criteria into their development in order to produce better performing, more useful and more usable services.

ix. **Next steps**

In the next chapter the discourses of the participants are analysed in more detail with a view to identifying interpretive repertoires that may shed light not only on their relevance judgements but also on their wider information behaviour.

8. INTERPRETIVE REPERTOIRES

i. Summary

Pre-existing commercial music is widely used to accompany moving images in films, TV commercials and computer games. This process is known as music synchronisation. Professionals are employed by rights holders and film makers to perform creative music searches on large catalogues to find appropriate pieces of music for synchronisation. In pursuit of Objective 3 ("To identify music industry professional users of MIR systems and investigate their information needs and behaviour"), this chapter discusses a Discourse Analysis of thirty interview texts related to the process. This chapter is also a step towards fulfilling Objective 6 ("To test the model against findings"). Coded examples are presented and discussed. Four interpretive repertoires are identified: the Musical Repertoire, the Soundtrack Repertoire, the Business Repertoire and the Cultural Repertoire. These ways of talking about music are adopted by all of the community regardless of their interest as Music Owner or Music User.

Music within this community is shown to have multi-variate and sometimes conflicting meanings which are dynamic and negotiated. This is related to the theoretical feedback model of communication and meaning making which proposes that Owners and Users employ their own and shared ways of talking and thinking about music and its context to determine musical meaning. It is hoped that this may encourage the music information retrieval community to consider system design from a user information needs perspective.

ii. Introduction

So far the investigation has

- Reviewed the literature and presented a theoretical model of communication (Chapter 2)
- Discussed a methodology for investigating the information behaviour of the people involved in this process (Chapter 3)

- Analysed initial interviews to gain an understanding of the process of searching for music for synchronisation and derive themes of particular interest (Owner and User information needs) (Chapter 4)
- Considered the relationship between content and context in creative music search (Chapter 4)
- Collected and analysed metadata used within existing bespoke search engines designed to facilitate the synchronisation search process (Owner codes and competences) (Chapter 5)
- Analysed a collection of queries and compared the predominant facets used with search engines facets (User codes and competences) (Chapter 6)
- Analysed and discussed observations of a selection of participants making relevance judgments of music items derived from searches using the queries and the search engines. (Encoding/decoding process) (Chapter 7)

This holistic approach examines not only the individuals involved in the process, through interview and observation, but also key textual elements of the systems with which they interact, namely the written queries and the automated search engines. When talking about music it has been shown that there appears to be a disparity between the 'official' language of the Owner, discussed in chapter 5 and that of the User, identified in the query analysis in chapter 6. In order to pursue this in more depth it was decided to consider the entire collection of interview and observation texts to determine whether or not the User and the Owner have different approaches to communicating musical meaning to one another. This would also provide data which would contribute to testing the communications model.

In terms of the model, although the Owner and User draw their codes and competences from Owner and User stores, these are likely to overlap. These overlaps would increase the ability of each stakeholder to understand the others' meaning: encoding/decoding should be reasonably smooth. However if the Owner codes do not intersect with the User codes, for example, then the encoding/decoding process is likely to lead to misunderstandings and disagreement.

The aim of this chapter is to present an analysis of the interview texts and identify the various interpretive repertoires used by this community of specialist users. A range

of ways of talking about music is discussed, derived from a Discourse Analytic approach. The repertoires are found to be adopted throughout the community and no repertoire is exclusive to one type of stakeholder. The varying discourses represent different ways of constructing reality and reveal important factors which may contribute to the design of music information retrieval systems for the purpose of music synchronisation.

The next section introduces and describes the methodology. This is followed by a summary of the findings and some examples of the coding and analytic process. In the final section the implications of the use of these repertoires are discussed, applying them to the theoretical model, and suggestions are made as to how this approach may be relevant to the music information retrieval community.

iii. **Methodology**

As previously discussed in Chapter 3, in Discourse Analysis (DA), language is seen to construct reality, rather than simply reflect and describe it (Potter & Wetherell, 1987). There are numerous methodologies under the DA umbrella, which vary widely in the amount of detail in which they look at the texts being considered (Paltridge, 2006). Texts may be any written or spoken form of interaction, including interviews and other documents which are related to the subject in question. The linguistic approach identifies pauses and hesitations and detailed lexicographic units, while the social psychology approach, used here, seeks to identify attitudes, beliefs and attributions (Potter & Wetherell, 1987). Interpretive repertoires are described as *"a lexicon or register of terms and metaphors drawn upon to characterize and evaluate actions and events"* (Potter & Wetherll, 1987:138). Although there is no 'recipe' (Antaki et al, 2002) for identifying interpretive repertoires (McKenzie, 2005) there is a developing DA literature in the library and information studies and human computer interaction domains (Talja, 2001; Carlisle, 2007; Frohmann, 1994; Budd & Raber, 1996; Stowell et al, 2009).

The objective of this approach was to identify interpretive repertoires within the interview and observation texts, highlighting the ways in which this community of varied-interest stakeholders talk about music. Interpretive repertoires are drawn from and used by a wide community of interest. One viewpoint of DA is that no one

participant will be consistent in their talk, and the researcher is likely to find consistencies and variability not only between texts, which may be expected, but also within them. These consistencies and contradictions are drawn from a variety of repertoires which represent different ways of thinking about something (Antaki et al, 2002; McKenzie, 2005), in this case, music. All of the participants are talking about searching for music in large collections and using music with moving images. However some of them are rights holders and their intermediaries (Owners) while others are music supervisors and film makers (Users). Each group draws from the other's repertoires in their music talk. Analysing these repertoires in detail should identify more than one way of talking about music, informing work on meaning making in creative music search.

For the purposes of analysis there were two iterations of coding. On the first pass examples of 'talk about music' were identified. The way to identify the 'talk about music' sections was to read through the texts using the NVivo interface, noticing where where the participant was discussing music in any way. These were marked up in each interview text using the coding facility in NVivo. This enabled the researcher to tag highlighted text elements with bespoke codes and then extract, sort and analyse data tagged under specific codes in order to spot patterns, word and tag frequencies etc.. Although the software has the capability to automatically mark up key words (such as 'music') it was felt that this would not discriminate sufficiently between talk about music that used this key word and talk about music that does not name it. Reading through all of the texts, although time-consuming, also immersed the researcher in the data. This process, which took place over a period of weeks, gave an opportunity to reflect deeply on the texts and identify repertoires.

All the sections of text coded as 'talk about music' were then examined to determine the language being used to describe music. Two broad groups of facets used in sync search engines and user sync queries had already been identified: Bibliographic (content-based) and Descriptive (contextual). These facets were used as a starting point for the coding. There seemed to be more of a focus on Bibliographic data (eg Artist, Title) in the Owners' search engines (Chapter 5) while the Users' queries (Chapter 6) were more based on Descriptive language (eg Mood, Novelty).

iv. **Identified Repertoires**

The language within each 'talk about music' section was carefully considered. This close reading of the transcriptions brought to light ways of talking about music that did not fit into either Bibliographic or Descriptive talk. These were identified by contradictions within or between texts or signalled by regularly-arising metaphors or phrases. Contradictions can be resolved by acknowledging a participant is switching repertoire and acknowledging the existence of more than one point of view. It is widely agreed in DA that this is a strong indication of interpretive repertoires. The words and phrases were divided into categories based on their themes, and coded within the interview texts (Table 10). Each theme, or repertoire, positions music differently in a users' world view – in other words they may link to the User and Owner Codes and Competences and enable some testing of the model. The talk about music text was closely examined. It was found that four types of language were consistently employed. It was found that some of this talk was based on the speaker's personal subjective opinions and other elements of the talk focused on business issues, other areas used traditional musical terms while a fourth approach noticeably employed terms relating to the interaction of the music with the film. It was felt that these four approaches were mutually exclusive and reflected sometimes opposing ideas about music. These are presented below as four interpretive repertoires, which have been named the Musical Repertoire, the Business Repertoire, the Soundtrack Repertoire and the Culture Repertoire.

a. The Musical Repertoire

In this repertoire, music is *an asset which is created and has identifiable characteristics*. The repertoire is identified by the appearance of bibliographic musical keywords such as 'artist', 'title', 'instrumental', 'lyrics'. These familiar facets are commonly used to identify a piece of music. However, they relate more to how the Owners identify the music in their catalogues than how the musical elements are matched to a visual. Referring to the analysis of the Owners' bespoke search engines these facets identify a recording or a composition and help to isolate it within a large catalogue of recordings or compositions. The record companies and music publishers responsible for curating commercial music catalogues and exploiting recordings and

compositions use these 'traditional' musical library facets when organizing their materials.

b. The Business Repertoire

In the Business Repertoire, music is *a large collection of recordings which are marketable, contractual and negotiable and have monetary value to the Owner*. There are a number of facets relating to music talk that are not immediately obviously musical, but they are important in exploitation terms nonetheless. These criteria are more concerned with business issues relating to signing, exploiting, and licensing music and include such keywords as "*license"* and "*clearance"*". They also employ the words used to sell the music to consumers, such as "*brand new"*, and "*cool*". The size of a catalogue is very important in this repertoire.

There are frequent co-locations of physical metaphors when the Business Repertoire is used: "work with it", "at the coalface", "splattering", "wall-to-wall", "throw music up against it", "dig it out", "churn up a ton of songs", "trawl through a catalogue". These physical metaphors indicate the way of thinking that music is a physical capital resource for the Owners and Users alike, and using it as such adds value to their commercial activities.

c. The Soundtrack Repertoire

Here, music is a mood enhancing ingredient inextricably linked to User's message being conveyed by moving image to viewer / listener. This repertoire differs significantly from the Musical Repertoire. In the Soundtrack Repertoire, music is 'upbeat and quirky, with a bit of a build' as opposed to 'uptempo and leftfield, with a crescendo'. It is 'recessive and background' rather than 'acoustic with sparse instrumentation'. This repertoire reflects the way in which the music functions when it is synchronized with the music, and the goal of the film maker in this process. It predominates in user queries but also appears in interviews across the stakeholder spectrum.

d. The Cultural Repertoire

Finally, music is represented as being *a subjective appealing distraction which is personal and emotive*. The piece of film has a final audience, which also includes the participants in this process in their recreational lives consuming the media they are involved in creating. As recreational consumers themselves they often bring less 'professional' music talk to these discussions, indicating they are enthusiastic fans of the cultures of music and film:

These purely subjective evaluations of media content appear throughout the texts and are an important way of communicating the meaning and value of a piece of music, film, or the combination of the two. It is marked by a frequent trope: '*when it works, it works*', '*you just know*', or '*it's gut instinct*'. This phrase arises throughout the interviews in response to the question '*what makes a great sync?*'

The repertoires are summarised in Table 10 (below) alongside examples of nouns, phrases and adjectives which helped to identify the repertoire in the data. An example of coding from one interview, 004SYN, is presented in Appendix vii.

Repertoire	Keywords
Musical Repertoire: Music is an asset which is created, and has identifiable characteristics.	*Artist, song title, writer, year, album title, chart position, genre, keyword, tempo, lyrics, mood, subject, vocal mix / instrumental*
Business Repertoire: Music is a large collection of recordings which are marketable, contractual and negotiable and have monetary value to the Owner.	*Brand new, cool, big catalogue, comprehensive, demographic, one stop, originating territory, physical*
Soundtrack Repertoire: Music is a mood enhancing ingredient inextricably linked to User's message being conveyed by moving image to viewer / listener.	*Effervescent, uplifting, recessive, theme, build, quirky, unexpected, familiar, theme, background, match the music to the picture*
Cultural Repertoire: Music is a subjective appealing distraction which is personal and emotive	*Like it, opinion, brilliant, great, hate it, it just works, gut feeling, instinct*

Table 10 Talk about music - interpretive repertoires

v. Repertoire Analysis

a. Extract 1

An example of coded text can be seen in Appendix iv. It can be seen from this extract that the participant is using a range of approaches in her music talk. She is a synchronisation manager in a music publishing company (Owner) and her role is to secure syncs for the music in the catalogue she represents. Her answer to the question:

"How do you then match those to the briefs that you are sent and how do you promote them to to your potential clients?"

incorporates all four repertoires, which in the extract are tagged as <MR> (Musical Repertoire),
 (Business Repertoire, <SR> (Soundtrack Repertoire) and <CR> (Cultural Repertoire). (The colour coding used in NVivo has been translated in this thesis into XML-type codes for ease of explanation and reproduction). In the BR firstly she identifies her business resource, the physical "*dedicated music server*", which contains a database of her collection, which is "*quick*" and efficient (*"the most optimum way"*) and refers to the physical acts of making cds and putting mp3s on an ftp site.

She switches to SR, using the film makers' special language of "*briefs*", "*visuals*", "*matching the music to picture*" and "*marry it up*". Although it is not specifically her role to match the music to the moving image it is frequently described by participants as their preferred way of determining relevance. Incorporating this SR act in her discourse indicates an understanding of "*the other side"*, their way of thinking and working. Indeed she has work experience in the film world and is therefore in a position to adopt repertoires representing different interests.

The CR is clearly identifiable through the use of the subjective opinion-oriented comments of "*I think...*" ("*...are going to work / fit / appropriate*"). This repertoire presents the idea that the 'fit' between music and film is very subjective, and allows the User to make the final decision. Forcing a piece of music on a User ("*this is the one for you*") arises throughout the interviews as a bad approach, whereas a subtle negotiation approach or "*letting the user decide / discover"* is preferred. The CR allows this deference without devaluing the knowledge and expertise of speaker and puts them in a

safe position if the final choice is not successful or popular, distancing them from unpopular decisions.

The participant's use of MR in this section discusses the key elements of the musical content of specific "songs", including lyrics ("*words*"), genres ("*rock*", "*pop*") and instrumentation ("*acoustic instrumentals*"). Unsurprisingly these facets appear throughout the texts and are used widely by the participants. Technical musical terms, however, such as melody, harmony, key, or rhythm are rarely mentioned. The MR is more focused on higher level bibliographic metadata than technical musical content. This widespread use of layman's musical language enables easy communication between all parties and stakeholders regardless of their musical expertise. It consists of easily identified facets which are used to organize rights holders' collections rather than more technical film or musical terms used in the SR, or the marketing-based language of the BR.

b. Extract 2

In the second extract (Appendix iv) the same participant contradicts herself within the same answer to the question: *"What are you listening for ... in the music?"* Although she starts out clearly stating in CR that "*you can never predict what anyone's going to go far"* she switches to BR, immediately contradicting herself, saying that she can identify music that is not suitable for ads ("*no way you're going to get an ad*") but it is appropriate for major US television programs ("*that will be fantastic in, say, you know, the major US TV programmes*"). This direct contradiction between the assurance that it is not possible to predict what music is going to be chosen and that equally strong assurance that the participant can identify music that will not be chosen for ads but is suitable for TV can satisfactorily be explained by her switching repertoires, both of which are equally valid and held by a large number of the participants. She concludes her response by returning to the CR, again contradicting her statement that the music will not be used in sync but validating this with the CR approach that music choices are subjective and unpredictable. Indeed this particular contradiction arises on numerous occasions in the texts.

c. Extract 3

Here (Appendix iv) a different participant (019SYN) discusses "*What makes a great sync*". He draws from the CR and BR in his answer, switching quickly from one to the other. Although he appears to believe that a "*great sync*" is one that "*works perfectly with that film*" he fully acknowledges that there are other factors which come into play from the BR, including "*cost*", "*politics*", "*the PR and the story*". Again, combining these repertoires justifies and explains self-contradiction and acknowledges the wide variety of factors that impact on the choice of music in this process. Although he initially aligns himself with the CR, presenting the BR as an unpleasant but necessary fact of life, he reinforces his professional standing by acknowledging the importance of market-based factors to successful synchronisation.

vi. Discussion

a. Meaning-making

The repertoires combine dynamically to determine musical meaning within this community. Music for synchronisation is not purely an abstract art form. It has commercial value, and can be bought and sold, negotiated and cleared; it has physicality, weight and volume (brought to bear by the sales, distribution and warehousing mentality of an industry focused on vinyl, tapes and CDs – collections of MP3s are discussed in terms of their size); it is an identifiable unique item in a large collection or an amorphous mass of a collection itself; it is defined by the factors around its creation, the artist, the date, or it is defined by its effect on the mood or even purchasing activity of the listener / viewer; it is personal and subjective or it is a perfect match.

Although there is often some emphasis on one or another of the repertoires, each of the participants acknowledges this range of representations in their music talk. The repertoires can be used to identify their Codes (ways of looking at music) and Competences (ways of looking at the world). Indeed, Owner Codes mainly draw from MR, User Codes from SR while Owner Competences relate more closely to BR and User Competences to CR (see Figure 11, below).

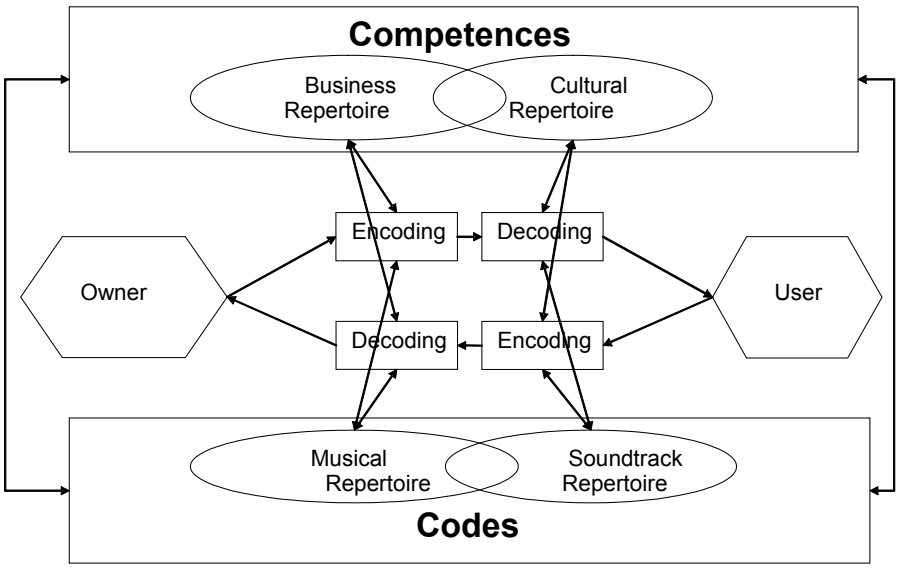


Figure 11 Repertoires as Codes and Competences

The model in Figure 11 is adapted from Figure 2, which suggests that the meaning making process in music synchronisation is a dynamic feedback loop between the Owner and the User. The Owners and Users draw from their own and shared Codes and Competences in determining and communicating musical meaning. The results of the DA reported here reinforce the Codes and Competences aspect of the model. The Encoding / Decoding process is discussed in the next chapter.

b. Music Information Retrieval

The value of this work to the wider discipline of Music Information Retrieval is twofold. Firstly, the rich and detailed insights into the Repertoires employed within this community of users offered by the analysis indicate a wide variety of ways of thinking about music. In terms of tool and, ultimately, system design, recognizing that music is a multi-variate concept with conflicting features (it is abstract and concrete, it is objective and subjective and it can be used as part of a multi-media construct while standing alone) is key to successfully meeting user information needs. For example, if these ideas were incorporated in the design of a system to find music for sync then the music would not only be described using bibliographic metadata (MR) but would incorporate facets from all of the repertoires. It would allow a user to search databases for a selection of thirty second sections of tracks which are popular with a specific target audience (BR), which have not been used in advertising (SR), have a build (SR), no vocal (or a vocal with a specific lyric which is relevant to the commercial's message) (MR), specific instruments and feels (MR), price ranges and ease of approval (BR), and is of a style which is preferred by the stakeholders (CR). Much of the BR information can be found

in the royalties and business affairs services in Owners systems and attempts are being made by some corporations to incorporate this into their search applications. Automated content-based tools such as 'crescendo detectors' or 'timbre identifiers' would be of use for SR and MR, while autotagging and playlist-building reflect CR. A holistic approach can only benefit industry and the research community. Secondly, the dynamic element of this process reminds us that meaning is not static but relates both to content and to ever-changing context. This constant flux means that any research is purely a snapshot of ways of thinking and talking about music. As the digital information society develops and music becomes all-pervasive, users and systems become more sophisticated. As the music industry's relationship with music is forced by this development to change then the Codes and Competences made apparent by this analysis are equally likely to develop and change.

vii. Conclusion

There are appearances through the texts of four repertoires. Music appears to have many forms, which are all considered by all of the participants. Although at first glance it may appear that one group of people (the Owners) thinks one way while another (the Users) think another, this is not the case. Indeed their views are often similar. The ways of thinking about music in this community are more complex. There is certainly some value in analysing the texts for their surface content - indeed this is an useful way to determine key themes and for the researcher to get an initial understanding of the dynamics of a multi-stakeholder information communications process. However, although it is time-consuming, applying DA to these texts has revealed patterns that were not already clear, given this analysis deeper insight into meaning making within this community and allowed some testing of the theoretical model.

viii. Next steps

The repertoires seem to have some relationship with the Owner and User codes and competences presented in the model. The communication process relies on successful encoding and decoding of messages between the User and the Owner. The encoding and decoding, represented in this study by the briefs and the search engine texts, are discussed in the next chapter.

9. ENCODING / DECODING

i. Introduction

In the previous chapter the interpretive repertoires, Musical Repertoire, Soundtrack Repertoire, Business Repertoire and Cultural Repertoire, were identified and discussed in relation to the Codes and Competences elements of the communications model. It was shown that Users and Owners use one another's repertoires, indicating that they are drawing from the same stores of Codes and Competences. Each repertoire appears to link to the model thus:

Musical Repertoire	Owner Codes (Owners ways of looking at music)
Soundtrack Repertoire	User Codes (Users ways of looking at music)
Business Repertoire	Owner Competences (Owners ways of looking at the world)
Cultural Repertoire	User Competences (Users ways of looking at the world)

Table 11 Repertoires, Codes and Competences

The model also suggests that the Codes and Competences inform the encoding/decoding process. This chapter discusses an analysis of the 'talk about communication' in the texts and relates this analysis to the encoding/decoding elements of the model. This relates to Objective 3 ("To identify music industry professional users of MIR systems and investigate their information needs and behaviour") and is another step towards achieving Objective 6 ("To test the model against findings").

ii. The User

The texts were once again reviewed within the context of the NVivo interface. As in chapter 8 each text was carefully read through and marked up using the NVivo coding facility. All sections of 'talk about communication' were marked up in each of the interviews. Again, it was not possible to use the automatic coding facility of the software because the participants did not always clearly articulate that they were talking about the process of communication. Meanings had to be derived from a careful reading of the transcript and the extracts considered within the context of the talk. Once the texts

had been coded under ‘talk about communication’ these sections were then revisited and examined for appearances of the repertoires. They were identified by the criteria established in Table 10. This ensured consistency in coding. An example of an NVivo screenshot can be seen below (Figure 12).

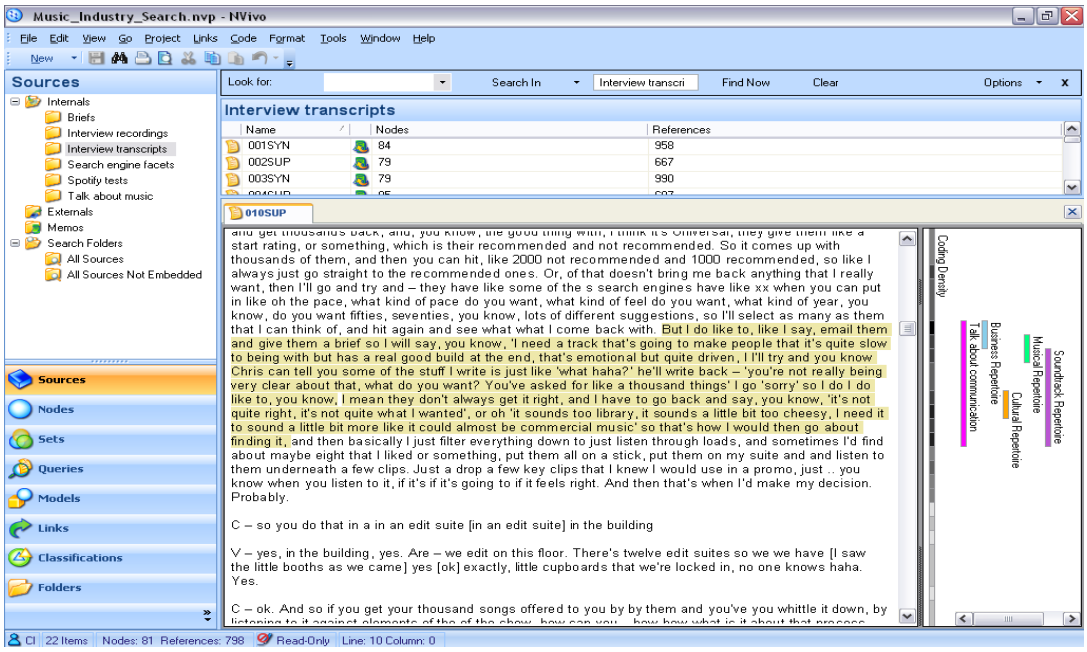


Figure 12 NVivo screenshot - 010SUP - talk about communication 1

In this example, participant 010SUP (a Music User) works for a television company making trailers for forthcoming programmes. The text was chosen as an example of User talk for later comparison with Owner talk. Once the text has been marked up for talk and repertoires it is possible to highlight these sections (as in the centre of the screen above) and the software generates coloured coding stripes (right hand panel above). The interview text is then scrolled through to identify sections of talk that contain the repertoires. Clicking on a coding stripe then isolates text under that code in the main panel. The highlighting in the example shows ‘talk about communication’. Unfortunately, although this functionality is effective on-screen it does not reproduce well on paper. It is not possible, for example, to print a section of multi-coded text showing which codes apply to which exact pieces of text. Because of this, all coded extracts reproduced here are marked up by hand using XML-type mark-up for ease of illustration. The highlighted text above reads as follows:

*"
But I do like to, like I say, email them and give them a brief so I will say, you know, 'I need a track that's going to make people that</BR><MR> it's quite slow to begin with</MR><SR> but has a real good build at the end, that's emotional but quite driven, I I'll try and you know Chris can tell you some of the stuff I write is just like 'what haha?' he'll write back – 'you're not really being very clear about that, what do you want? You've asked for like a thousand things' I go 'sorry' so I do I do like to, you know,</SR><CR>I mean they don't always get it right, and I have to go back and say, you know, 'it's not quite right, it's not quite what I wanted', </CR><SR>or oh 'it sounds too library, it sounds a little bit too cheesy, I need it to sound a little bit more like it could almost be commercial music' so that's how I would then go about finding it,</SR>"*

In the example 010SUP draws from all four repertoires. She is discussing the problems in clarifying her requests for music to Music Owners. This directly relates to the experience of encoding/decoding. She opens with BR, talking about emailing a brief which discusses the effect she wants the track to have on the viewer. This is qualified using MR to define the tempo of the music. She then switches to SR, which is identified by her referring to a 'build', 'emotional' and 'driven', key SR non-musical mood descriptors. She talks about how the Owner asks for clarification, which she gives by using the personal terms of CR, 'not quite right', 'not quite what I wanted'. Finally she gives an example of how she would further use feedback to refine her query, but referring to SR qualities such as 'library', 'cheesy' and 'commercial'. This example shows how a participant may draw from a range of descriptors to encode their query. She, a User, uses qualities relevant to her task: music that is '*slow to begin with*', has a '*good build at the end*', is '*emotional*' and '*driven*'. The Owner seeks clarification in decoding the query because the criteria are not specific enough for him to identify a manageable selection, encoding his response in quantitative terms ('*You've asked for like a thousand things'*). She decodes this using CR, suggesting they have misunderstood her query which she subsequently refines using affective descriptors from SR ('*too library', 'too cheesy',* terms which are often used together) and asks for more '*commercial'* music. This process continues until the User finds a satisfactory piece of music for her clip.

Another example from the same text is illustrated below (Figure 13)

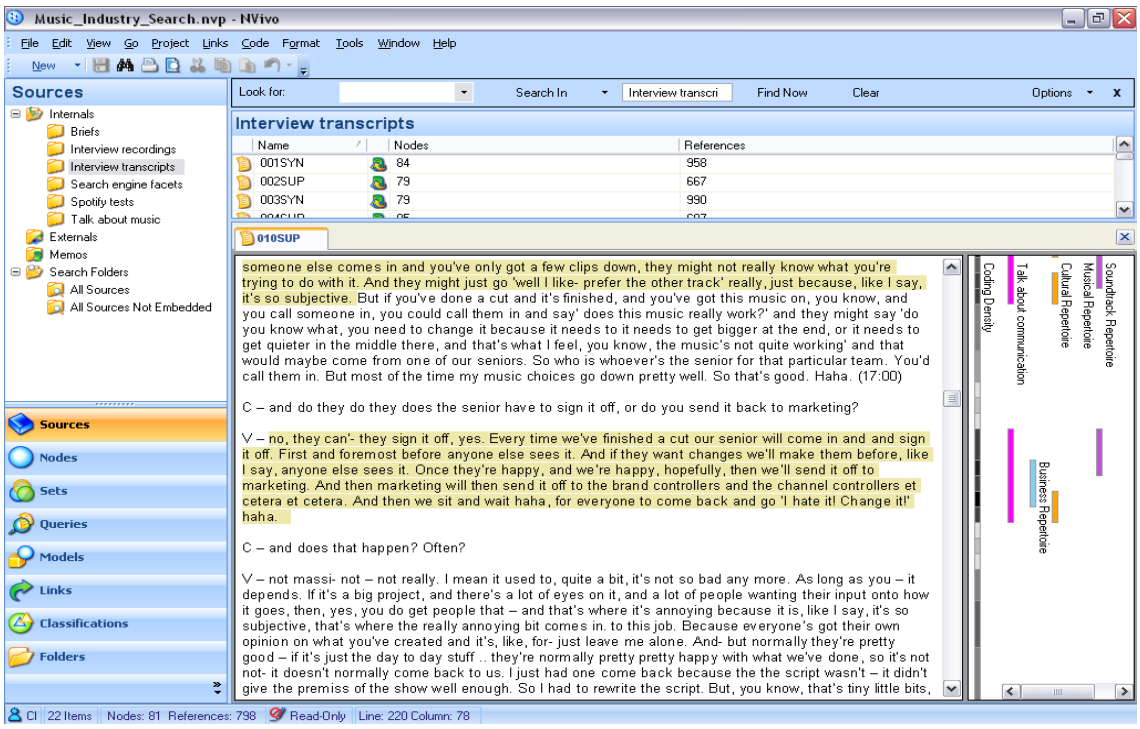


Figure 13 NVivo screenshot - 010SUP - talk about communication 2

A larger section of text is reproduced here to contextualise this discussion. It should be noted that the repertoires coded here are from 'talk about communication' (in bold italic type). Some of the extract is 'talk about music' and the codes for this are omitted for the sake of clarity.

Q - and do you do you get other people involved in making that choice? Or is it entirely down to you?

*A – <CR>**you can get other people involved, I tend to not bother, because I don't – if you feel you need to the, yes, you know, you pull people in, go 'does this music work or does this work?' but I tend to make the decision myself, purely because I no- I don't feel I need to ask anyone else, normally, I kind of, I know myself what – if if I think it's right or not.** </CR>*

Her use of the second person above (*'you can get other people involved')* seems to indicate that although some (others) may '*pull people in*' for reassurance, she does not do this, but makes the decision herself – '*if I think it's right or not'*. She explains that this is for two reasons. Firstly because the other person may not know what she is

attempting with the work as '*I know what I've got in mind'* and secondly because of the subjective nature of music choice in sync, they '*prefer the other track'*:

> *<SR>**Because I know what I've got in mind for the promo, whereas if someone else comes in and you've only got a few clips down, they might not really know what you're trying to do with it**.</SR><CR>* ***And they might just go 'well I like- prefer the other track' really, just because, like I say, it's so subjective.*** *</CR>*

Whereas when she has completed her task and asked for input, this is given in the 'talk about music' section below using more detailed and less subjective terms drawn from SR ('*bigger*'), and MR ('*quieter*')

> *But if you've done a cut and it's finished, and you've got this music on, you know, and you call someone in, you could call them in and say' does this music really work?' and they might say 'do you know what, you need to change it because it needs to it needs to get bigger at the end, or it needs to get quieter in the middle there, and that's what I feel, you know, the music's not quite working' and that would maybe come from one of our seniors. So who is whoever's the senior for that particular team. You'd call them in. But most of the time my music choices go down pretty well. So that's good. Haha.*
>
> *Q – and do they do they does the senior have to sign it off, or do you send it back to marketing?*
>
> *A – <SR>**no, they can'- they sign it off, yes. Every time we've finished a cut our senior will come in and and sign it off. First and foremost before anyone else sees it.**</SR>
* ***And if they want changes we'll make them before, like I say, anyone else sees it. Once they're happy, and we're happy, hopefully, then we'll send it off to marketing. And then marketing will then send it off to the brand controllers and the channel controllers et cetera et cetera**.</BR><CR>* ***And then we sit and wait haha, for everyone to come back and go 'I hate it! Change it!' haha**.</CR>"*

In this example the participant highlights the problems in communication with working in a large team of stakeholders who may place different emphasis on codes and

competences in their decision making and how feedback comes from outside her direct relationship between her, the film clip and music, and the music Owner. Although she knows '*if I think it's right or not'* (CR), it is difficult to show what she has in mind to someone not as well-versed in SR (identified by the technical language of '*you've only got a few clips down')*. They may use CR to influence the final choice of music '*because, like I say, it's so subjective'*. She discusses how although she may use SR and BR to secure agreement for her choice of music from her senior stakeholders, it is often CR that is dominates as the bottom line in the final decision.

iii. **The Owner**

Here the coding of the talk about communication text of interview with 007SYN is examined. This participant is the head of a major publishing company synchronisation department with extensive experience in the area of music synchronisation and was named by a large number of participants as being an important person to interview.

The screenshot (below, Figure 14) shows an extract of talk about communication text where three repertoires coincide: SR, CR, BR.

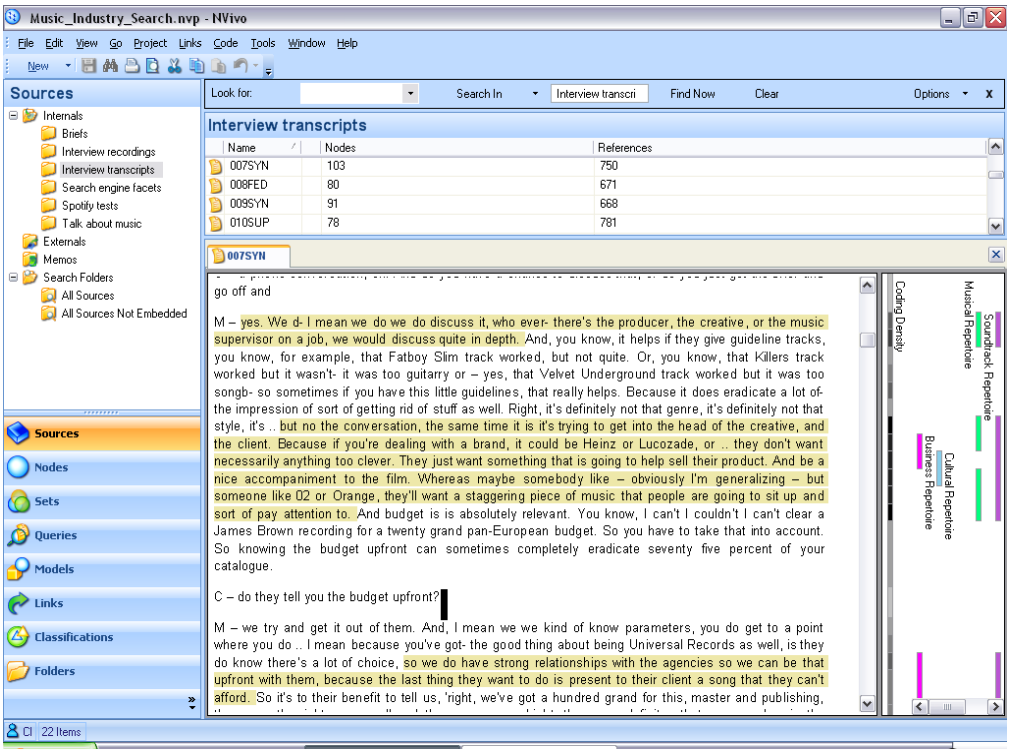


Figure 14 NVivo screenshot - 007SYN - talk about communication 1

In this example he is discussing how he interprets the needs of the users when performing a search on their behalf. Again this text is marked up using XML-type mark-up for ease of illustration, the talk about communication highlighted in bold:

> *"<SR>**yes. We d- I mean we do we do discuss it, who ever- there's the producer, the creative, or the music supervisor on a job, we would discuss quite in depth**.</SR> And, you know, it helps if they give guideline tracks, you know, for example, that Fatboy Slim track worked, but not quite. Or, you know, that Killers track worked but it wasn't- it was too guitarry or – yes, that Velvet Underground track worked but it was too songb-* [sic] *- so sometimes if you have this little guidelines, that really helps. Because it does eradicate a lot of- the impression of sort of getting rid of stuff as well. Right, it's definitely not that genre, it's definitely not that style, it's .. <SR>**but no the conversation, the same time it is it's trying to get into the head of the creative, and the client. Because if you're dealing with a brand, it could be Heinz or Lucozade, or</SR>
 .. they don't want necessarily anything too clever. They just want something that is going to help sell their product.</BR><CR> And be a nice accompaniment to the film. </CR><SR>Whereas maybe somebody like – obviously I'm generalizing – but someone like 02 or Orange, they'll want a staggering piece of music that people are going to sit up and sort of pay attention to.</SR>**And budget is is absolutely relevant. You know, I can't I couldn't I can't clear a James Brown recording for a twenty grand pan-European budget. So you have to take that into account. So knowing the budget upfront can sometimes completely eradicate seventy five percent of your catalogue.*

He introduces the idea of numerous stakeholders involved in making the final choice of music using their technical job titles (SR). He later reiterates these formal labels ('*creative', 'client')*, and uses this repertoire when speaking about getting '*into the head*' reinforcing his knowledge of the SR and ability to communicate effectively with the Users. He positions himself as being outside their world by commenting on how '*They just want something that is going to help sell their product' – 'product'* is a frequently used word in BR to describe a creative offering which has financial value. He then acknowledges the importance of CR to the final decision ('*nice*

accompaniment to the film'). The word '*nice*' being employed to indicate a lay-person's response to the result of synchronisation, rounding this off with a return to SR, reinforcing the importance to the User of a mood effect on the eventual viewer of the commercial.

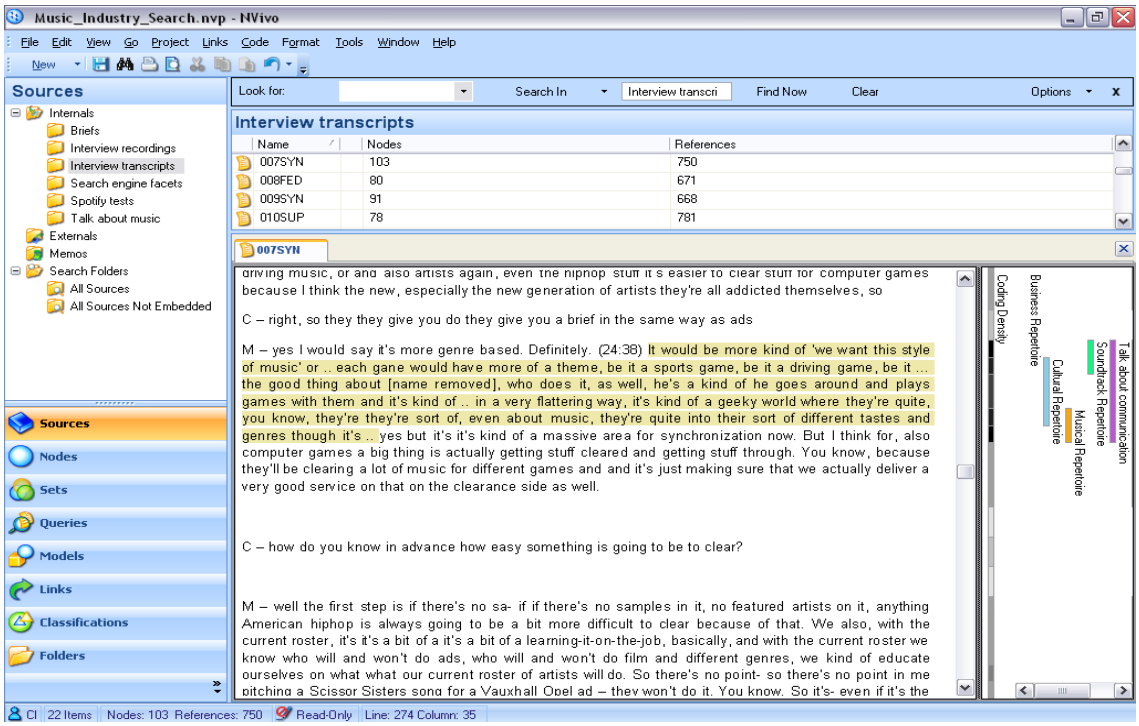


Figure 15 NVivo screenshot - 007SYN - talk about communication 2

Again, this example of talk about communication (Figure 15) is marked up and reproduced below:

> *"<SR>It would be more kind of 'we want this style of music' or .. each game would have more of a theme, be it a sports game, be it a driving game, be it</SR><CR> ... the good thing about [name removed], who does it, as well, he's a kind of he goes around and plays games with them and it's kind of .. in a very flattering way, it's kind of a geeky world where they're quite, you know, </CR><MR>they're they're sort of, even about music, they're quite into their sort of different tastes and genres though it's ..</MR>"*

In this example, 007SYN is discussing the process of synchronisation with computer games. He uses the SR to decode the game-makers' meanings, aligning the process with synchronisation for films and commercials, moving to CR when he talks

about how his staff engage with and encode their responses to the Users on a very personal level (*'plays games with them', 'geeky world'*) and suggests that the Users encode using MR (*'genres'*) and subsequently discusses the importance of business services.

In terms of the model, the User encodes their meaning with SR (*'we want this style of music'),* the Owner decodes this using SR (*'each game would have more of a theme')*, the Owner then encodes his response using MR (*'they're quite into their sort of different tastes and genres')* and the User decodes this through the CR behaviour of the staff member who *'he goes around and plays games with them'*.

iv. **Conclusion**

These examples indicate that in the participants' talk about communication there is use of all four repertoires. While MR predominates throughout, the specialist repertoire of the participant is used to support and qualify their talk. In other words, this User (010SUP), involved in creating moving images which use music, uses MR and SR, while the Owner (007SYN) employs MR and BR, reflecting his emphasis on the business aspects of his work role.

v. **Next steps**

In the next chapter all of the interview texts are examined to determine whether this apparent pattern generalises across the sample, focussing on relative emphases of repertoire by stakeholders.

10. REPERTOIRES IN INTERVIEWS

i. Introduction

Four repertoires have been found in interviews texts and discussed in relation to 'talk about music' and 'talk about communication' (Chapters 8 and **Error! Reference source not found.**). These two types of talk refer to the music choice and the encoding/decoding process involved in meaning making in this community. It has been suggested that although all participants may use MR equally, Users may employ the repertoire closer to their professional view (SR) while Owners draw more from BR in their talk (Chapter 9, iv). These emphases relate to the speakers' primary motivations but do not exclude the inclusion of other repertoires. This chapter investigates the wider use of the repertoires in all of the interview texts in an attempt to determine whether there is consistency in these uses. If consistency is found then this will imply some generalisability to be found with the use of repertoires within this community of interest. This Chapter relates to Objective 6, "To test the model against findings")

ii. Discussion

Using NVivo, a report showing the number instances of each repertoire in each interview was generated. This was imported into an Excel spreadsheet (Table 12) and Pie charts were generated for all of the text instances of the repertoires (Figure 16 and Figure 17). In Table 12 the participants were split into Owner and User groups in order to determine whether there was a pattern in the frequency of appearance of repertoire in their talk. The repertoires were then ranked by frequency. For example, in 017SUP's text there were 106 uses of BR, 89 uses of MR, 45 uses of SR and 19 uses of CR. The ranking was therefore BMSC. The User and Owner groups were then sorted according to ranking. This showed that in the Owner texts 6 participants employed a ranking of repertoires MBSC and one each of BMSC, BSMC and MSBC. In the User texts the most frequent ranking was MSBC (6) followed by SMCB (3) then 2 each of BMSC, MBSC, MSCB, SCMB, SMBC and 1 occurrence of BSMC. Totalling the repertoires in each category led to the Pi charts below (Figure 16 and Figure 17).

Ref	Job title	Owner / user	BR	MR	SR	CR	Rank
020SYN	Major publisher sync ads	Owner	93	44	27	25	BMSC
001SYN	Independent publisher sync	Owner	97	57	61	23	BSMC
006SYN	Independent sync	Owner	48	143	13	12	MBSC
007SYN	Major record co sync	Owner	70	115	23	14	MBSC
009SYN	Major publisher production sync	Owner	78	109	40	14	MBSC
014SYN	Games synch	Owner	66	69	46	9	MBSC
015SYN	Games synch	Owner	94	99	74	19	MBSC
021SYN	Independent sync	Owner	73	79	25	13	MBSC
003SYN	Major publisher sync ads	Owner	94	272	125	29	MSBC
		Total	713	987	434	158	MBSC
017SUP	Games supervisor	User	106	89	45	19	BMSC
019SYN	Independent supervisor	User	83	54	31	24	BMSC
005SUP	Independent supervisor	User	47	30	47	13	BSMC
004SUP	Independent supervisor	User	63	130	30	9	MBSC
022SYN	Independent supervisor	User	42	123	5	0	MBSC
002SUP	Independent supervisor	User	44	65	60	24	MSBC
008FED	Film editor	User	60	124	75	15	MSBC
010SUP	TV promos supervisor	User	49	145	73	28	MSBC
011SUP	Ads music supervisor	User	67	117	77	56	MSBC
016COM	Games composer	User	60	103	76	34	MSBC
018SUP	Games supervisor	User	73	140	75	27	MSBC
025SPOT	Independent supervisor	User	16	45	31	21	MSCB
027SPOT	Independent supervisor	User	5	19	26	9	MSCB
024SPOT	Ads music supervisor	User	17	22	53	35	SCMB
028SPOT	Independent supervisor	User	18	18	26	19	SCMB
012SYN	Independent supervisor	User	40	57	90	18	SMBC
013SYN	Independent supervisor	User	33	49	83	14	SMBC
026SPOT	Independent supervisor	User	7	72	77	37	SMCB
029SPOT	Independent supervisor	User	7	31	39	22	SMCB
030SPOT	Ads music supervisor	User	21	37	50	26	SMCB
		Total	858	1470	1069	450	MSBC

Table 12 Appearances of repertoires ranked by type

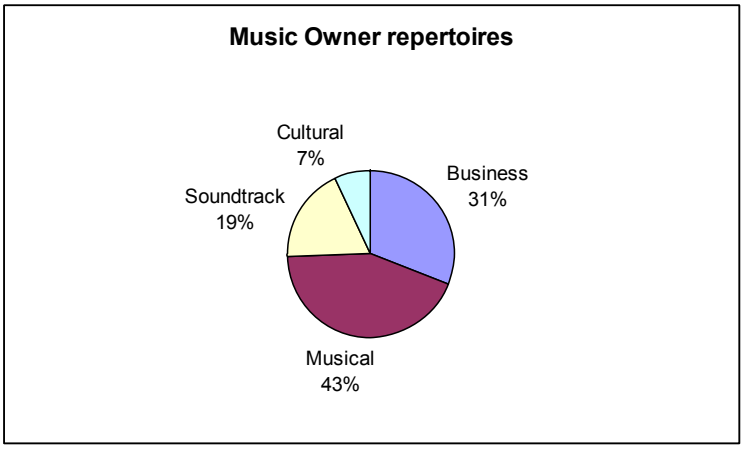


Figure 16 Music Owner repertoires

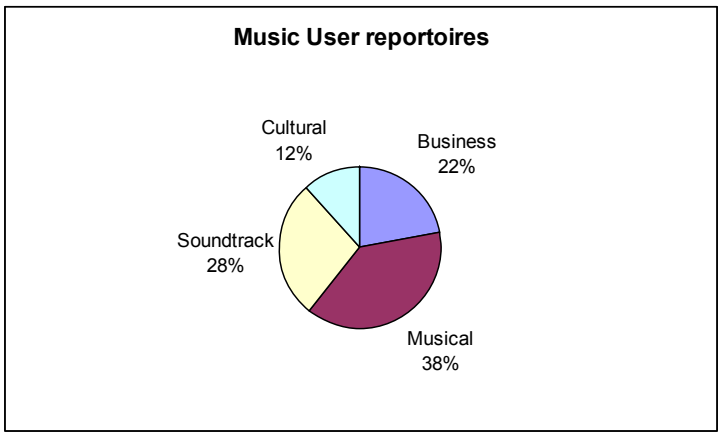


Figure 17 Music User repertroires

It appears from this quantitative analysis of the sample that although both groups of participants employ MR most of all in these texts, the Owners second repertoire is BR while the Users' second repertoire is SR. In other words, the Music Owners are concentrating on the languages of music and then of business, while the Music Users are concentrating on the languages of music and then of film. Although this may be unsurprising, as one may reasonably expect that each stakeholder would place more emphasis on their own particular interest, it indicates that there is some value in the theory summarised by the communications model that each participant in the communications process draws from stores of repertoires.Referring to the two examples above (010SUP and 007SYN),

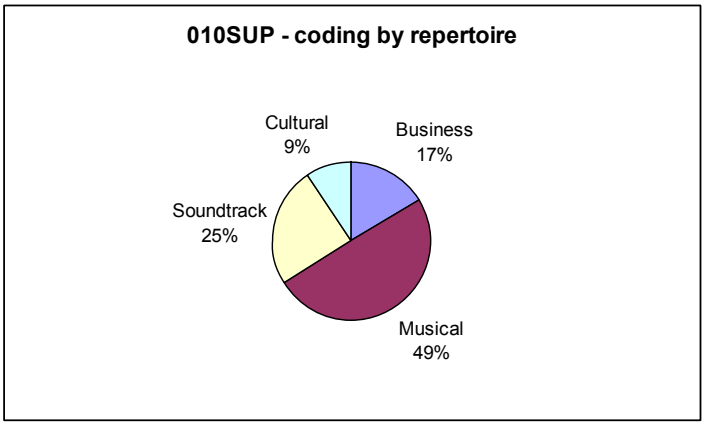


Figure 18 010SUP - coding by repertoire

The figure above (Figure 18) shows the number of coding instances within the entire text of 010SUP for each repertoire. This indicates that she draws from all four repertoires, employing MR and SR more frequently than the others. Her use of

repertoires matches the Music User profile derived from the analysis above, prioritising MR and SR over BR and CR. Her focus on music for synchronisation is based primarily on the two 'creative' repertoires of Music and Soundtrack. In her interview she discusses how she is not involved in the process of licensing the works she synchronises, which is dealt with by another department. This may contribute towards explaining why she does not employ BR to the same degree as the Owner as her focus is on successfully combining a piece of moving image with music for broadcast rather than the business deal that may be done around this use. De-emphasising CR is consistent with most of the participants in this study. Although CR is employed ('*I like it*'), professionals seem to remove their personal taste from the final decision to a degree, although it should be noted that CR is often acknowledged as having an underlying influence on the final choice and should not be discounted.

The breakdown of the use of repertoires by 007SYN is illustrated below (Figure 19) indicating a reliance on MR throughout his text, supported by BR, with some mention of SR and CR. His emphasis on MR and BR is consistent with the analysis of the majority of the Music Owner texts in the table Table 12. His role is to exploit a music catalogue and generate revenue for his employers, a multi-national record company so it is perhaps unsurprising that much of his talk centres on the BR, which impacts strongly on the type of music he is presenting for synchronisation in addition to his support for '*finding the right song'*.

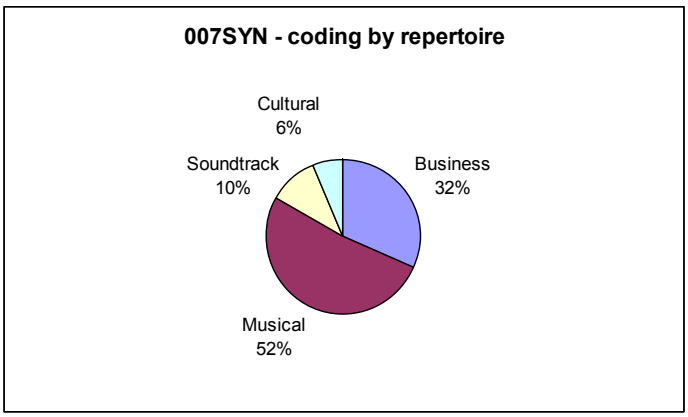


Figure 19 007SYN - coding by repertoire

MR is used by both groups of participants above their uses of other repertoires (7/9 Owners, 10/20 Users). This suggests that they are drawing from a mutually accessible store of musical language, enabling efficient communication.

iii. **Conclusion**

It appears that there is widespread use of MR, and each stakeholder may place an emphasis on their repertoire in their talk. This reinforces the idea presented in the model that the participants in the communications process draw from shared stores of repertoires in their talk. The Repertoires, Codes and Competences presented in Table 11 are not exclusive to each group of stakeholders. Owner Codes (MR) are accessed by Users, while User Codes (SR) are accessed by Owners. This also applies to Competences, BR and CR being accessible to both Owner and User, although emphasised differently according to their activity and position within the communications model.

iv. **Next steps**

The next chapter examines the written texts produced by the Owners (their websites) and the Users (the briefs) to determine their extent of repertoire use, allowing a comparison between the stores and end encoding/decoding process.

11. REPERTOIRES IN WRITTEN TEXTS

i. Introduction

This chapter discusses the coding and analysis of the Owner and Users' written texts, namely the music search engines and the briefs. It is anticipated that these collections of text contain formal written versions of the repertoires. Examining the emphases of repertoire use within these texts informs testing of the communications model (Objective 6 – "To test the model against findings").

ii. Repertoires in music search engines.

It was previously discussed that the MSEs are organized by a range of facets (Chapter 5). The metadata from each website was coded according to these facets, which arose directly from the interfaces themselves:

Genre, Mood, Use, Topic, Style, Date, Lyrics, Tempo, Artist, Writer, Label, Description, Performer type, Vocal, Title, Keyword, Beat, Energy, Easy clear, Instrument, Publisher, Movie stage TV title, Language

Using Table 10 these facets can be organized according to the repertoires thus:

Musical Repertoire	Genre, Date, Lyrics, Tempo, Artist, Performer Type, Vocal, Title, Keyword, Beat, Instrument, Movie/stage/TV title, Language
Business Repertoire	Easy clear, Publisher, Label, Writer, Chart
Soundtrack Repertoire	Mood, Use, Topic, Style, Energy, Description,
Cultural Repertoire	Not addressed

Table 13 Facets as Repertoires

The metadata presented to the User by the six search engines were examined. Each facet was coded according to the table. This allowed an NVivo analysis of the number of codings under each repertoire by each search engine.

a. MSE001

The MSE001 website is summarized in Table 14:

MSE001			
Simple search	Genre	MR	71
Simple search	Styles and moods	SR	61
Simple search	Topics and keywords	SR	271
Simple search	Word search		(Free) Title / lyrics / description
Advanced search	Artists	MR	200+
Advanced search	Writers	BR	200+
Advanced search	Labels	BR	
Advanced search	Tempos	MR	6

Table 14 MSE001 search engine summary

In their simple search, MSE001 mainly feature MR (Genre) and SR (Styles and moods, Topics and keywords). Their advanced search functionality takes the User to a more MR/BR-related interface, allowing them to search by Artist, Writer, Label or Tempo. The (71) Genres are arranged alphabetically, from '60s Sound' to 'World Music'. There are no sub-genres, each category having equal emphasis. The genres are not presented using technical music language and seem to be aimed towards a User with an interest but not expertise in music. In the simple search interface, therefore, the level of MR, implies a lower level of music competence is expected of the User. The advanced search seems to be aimed at a more expert user, looking for a known item or narrowing down by BR criteria such as Writer or Label. These criteria are rarely used by Users in their search for music and are therefore more likely to be used by the company's in-house music searchers who may have a piece of music, an artist or a writer in mind but need to narrow down by these criteria to help them find what they are looking for.

In their 'Styles and Moods' (61) and 'Topics and Keywords' (271) sections the language is of the everyday type to be found frequently in the briefs. For example:

> *"Styles and Moods: Aggressive, Angry, Anthemic, Atmospheric, Bitter, Bouncy, Building, Carefree, Childlike, Cinematic, Comedy, Downbeat, Dramatic, Dreamy, Driving, Dynamic, Eerie, Energetic, Erotic, Ethereal,*

Funky, Funny, Gentle, Happy, Hateful, Haunting, Hectic, Horror, Laid Back, Light, Loud, Melancholy, Mellow, Menacing, Minimal, Narrative, New Age, Optimistic, Pacey, Powerful, Pre-Teen, Psychedelic, Psychotic, Quirky, Racey, Reflective, Regimental, Relaxing, Relentless, Romantic, Rousing, Sad, Sensual, Sexy, Sleazy, Tense, Theatrical, Thrilling, Tribal, Upbeat, Uplifting" (MSE001 Styles and Moods)

These adjectives are not technical musical terms and relate more to the message the film-maker would want to put forward to the viewer. The use of these types of mood descriptors appears throughout the briefs and this is a clear example of the use of SR language in an Owner's communication, allowing the User to encode their query using SR.

MSE001' 'Topics and Keywords' are similarly derived from an SR approach:

"Topics and Keywords: Adolescence, Adoration, Adultery, Africa, Age, Alcohol, Alright, Ambition, America, Angels, Anger, Animals, Anti-War, Apathy, Apology, Arrogance, Attraction, Babylon, Bad, Beach, Beauty/Beautiful, Belief, Blues, Boogie, Boredom, Boys/Men, Break Up, Breakfast, Broken Heart, Bullying" (MSE001 Topics and Keywords – extract – A-B)

These topics attempt to match songs to the 'subject' of a film clip by searching for these categories in the metadata attached to the pieces in the catalogue. These topics are intended to match the types of ideas Users employ in their clips to the subjects of lyrics in songs.

The use of lay-person's terms to describe Tempo ('*Fast, Medium, Slow, Varied, Very Fast'*) also indicates an attempt to allow the User to encode their query without having recourse to in-depth musical terminology such as BPM (Beats Per Minute) or classical tempo terms such as 'Adagio', 'Presto'.

MSE001's ranking of repertoires may be summarized as SMBC:

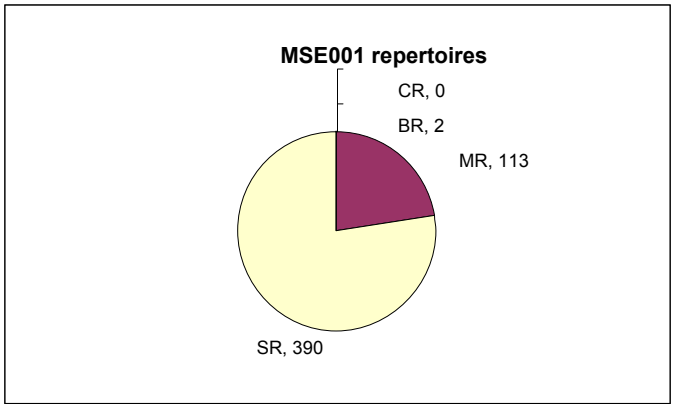


Figure 20 MSE001 repertoires

b. MSE002

The MSE002 search engine summary follows:

MSE002			
Simple search	Song title	MR	
Simple search	Artist	MR	
Simple search	Writer	BR	
Simple search	Country	BR	200+
Advanced search	Top songs	CR	
Advanced search	License for	BR	200+
Advanced search	Song title	MR	
Advanced search	Artist	MR	
Advanced search	Writer	BR	
Advanced search	Hit year	BR	
Advanced search	Album	BR	
Advanced search	Label	BR	
Advanced search	Film/show	BR	
Advanced search	Country of origin	BR	15
Advanced search	One stop	BR	
Advanced search	MSE002 master	BR	
Advanced search	Mood	SR	8
Advanced search	Genre	MR	10
Advanced search	Beat	MR	3
Advanced search	Tempo	MR	3
Advanced search	Energy	MR	3
	Lyrics or idea	MR	
	Subject	SR	26
	Sub subject	SR	417

Table 15 MSE002 search engine summary

Again, MSE002's language is mainly User-centred. The MR is in lay-terms, requiring very little musical knowledge or expertise:

> *Genre: Rock, R&B / Soul, Jazz / Easy Listening, Country / Blues / Folk, Rap / Hip-Hop, Pop / Dance / Electronica, Alternative, World / Reggae / Latin, New Age, Gospel / Christian*
>
> *Beat: Light, Medium, Strong*
>
> *Tempo: Fast, Medium, Slow*
>
> *Energy: Light, Medium, Strong*

In SR there are a large number of subjects (26) and highly detailed sub-categories (417) which are designed to accommodate the Users approach to synchronization. An example ('Dreams') follows:

> *Dreams: Believe, Change/Future, Everyday, Good/Better/Best, Desire, Dreams, Fame, Good Life, Luck, More, Motivation, Ready, Sleep, Want/Need, Wishing, Winning*

Again, these subjects are designed to match film clip subjects and relate the narrative of a song to the narrative of a film clip.

There are 8 Moods listed: Aggressive, Brooding, Happy, Mellow, Romantic, Sad, Sentimental, Upbeat.

Some use of more technical BR is also offered to aid in licensing choices (Territory, Writer, Country of Origin, One Stop) although it is rare that these criteria appear in briefs.

MSE002's ranking of repertoires may be summarized as SMBC.

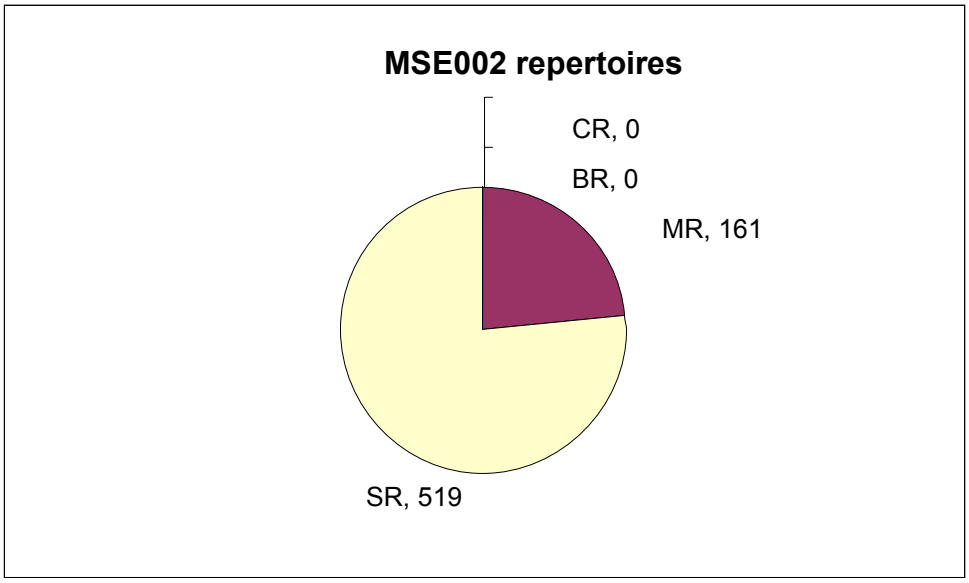


Figure 21 MSE002 repertoires

c. MSE006

The summary of the MSE006 search engine follows:

MSE006			
Simple search	Territory	BR	26
Simple search	Song title	MR	Free
Simple search	Songwriter	BR	Free
Simple search	Publisher	BR	Free
Simple search	Artist	MR	Free
Simple search	Lyrics	MR	Free
Simple search	Label	BR	Free
Simple search	Movie/Stage/TV title	BR	Free
Simple search	Decade	BR	Free
Simple search	Chart	BR	5
Simple search	Genre	MR	9
Simple search	Sub genre	MR	48
Simple search	Subject	SR	15
Simple search	Sub subject	SR	241
Advanced search	Tempo	MR	11
Advanced search	Vocal mix	MR	10
Advanced search	Language	MR	11

Table 16 MSE006 search engine summary

In the Genre category (MR) they list 9 categories: Pop, Rock, R&B/Urban, Country, World, Blues/Jazz, Dance/Electronic, Specialized, Christian. Each of these categories is divided into sub-categories of 5 or 6, including:

Pop: Adult Contemporary, Standards, Pop, Pop / Rock, Classic Top 40

World: Latin, German Schlager, Reggae, Celtic, World Beat

Specialized: Christmas, Children, Film Scores, Cartoon Music, TV Themes, Show Tunes / Broadway, Opera, Novelty, Choral, Classical

Christian: Gospel, Christian Pop, Praise & Worship, Inspirational, Christian Rap, Christian Rock

These genre descriptors are rooted in the language of the American music industry, identifiable by the presence of, for example, 'Adult Contemporary' and 'Classic Top 40', two special terms to define music radio in the US. Showtunes/Broadway and the plethora of Christian music sub-categories also strongly indicate this is an American service. Other examples proliferate: 'classic rock', 'urban', 'country', 'electronica' are all genres used more widely in the US than in the UK.

There are a large number of Subjects (15) and sub-subjects (241) featured, some examples follow:

Actions: Action, Belong, Care For, Changes, Chose, Closed, Fight, Help, More/Less, Open, Revolution, Stop, War/Peace

Communication: Apology, Communication(s), Give/Take, Goodbye, Hello, Hello & Goodbye, Kiss, Nonsense, Parting/Greeting, Questions, Social Comment, Street Slang, Superlatives, Thanking, Yes/No

Time/Travel: Age, Birthday, Day/Night, Death/Dying, Dimensions, Distance, Future, History, Leaving, Memories, Morning/Night, Nostalgia, Occasions, Occasions To Celebrate, Old/New, Time, Transport/Travel, Travel, Walk, Young

These detailed and finely grained categories are designed to match User subject queries – selecting one of these options should take the User to a selection of music that fits the subject in some way, an aboutness, or a subject of music is implied here: 'music about social comment', 'music for apologising', perhaps, or 'music about revolution', 'music about leaving'.

In the advanced search two MR choices are offered:

Tempo: Floating Fast - (151-170) BPM, Medium - (111-130) BPM, Medium Fast - (131-150) BPM, Medium Slow - (91-110) BPM, Multiple Tempos, Non 4/4, Slow - (71-90) BPM, Tempo Undefined, Very Fast - (>170) BPM, Very Slow - (<71) BPM

And:

Vocal Mix: Acappella, Choral, Female Vocals, Instrumental, Male Vocals, Mixed Vocals, No Vocals, Rap, Spoken Word, Vocal Samples

The Tempo criteria are quite detailed in terms of BPM, qualifying the tempo descriptions – *Medium* tempo is defined as *111-130 BPM*, for example. This use of numerical tempo measurement clarifies the descriptions and is well-used in the music profession, particularly by DJs. The tempo of much popular music is in this *Medium* range. The *Vocal Mix* offers a choice in non-technical MR, aside from the use of '*Acappella*', meaning unaccompanied voices. Again, despite its technical nature this term is widely used in the music industry and it likely to be understood by Users of this type of service.

Language choices include most European languages, and '*African'*.

MSE006's ranking of repertoires may also be summarized as SMBC:

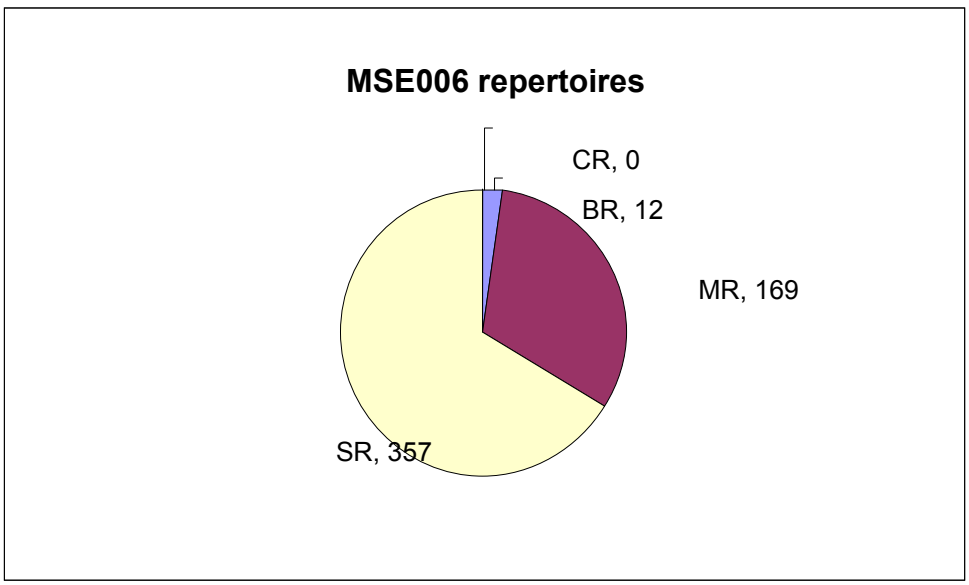


Figure 22 MSE006 repertoires

d. MSE003

The summary of the MSE003 search engine follows:

MSE003			
Quick search	Artist	MR	
Quick search	Track	MR	
Quick search	Album	BR	
Quick search	Composer	BR	
Quick search	Keywords		
Quick search	Lyrics	MR	
Quick search	Instrumental	MR	
Creative search	Year charted	BR	1950-2008
Creative search	Year of release	BR	1950-2008
Creative search	Chart position	BR	6
Creative search	Genre	MR	37
Creative search	Sub genre	MR	358
Creative search	Instrument	MR	9
Creative search	Sub instrument	MR	63
Creative search	Tempo	MR	6
Creative search	Moods	SR	20
Creative search	Activities	SR	25
Creative search	Feelings	SR	30
Creative search	Playlists	SR	38

Table 17 MSE003 search engine summary

The MSE003 search engine combines the repertoires of a number of small independent publishers and record companies of varying sizes ranging from multinational to small independents.

Their 'Quick Search' is entirely free-text – although prompts appear when text is entered. The 'Quick Search' is designed for known item search, or search for partly-remembered items, or those which must have one of the stated MR (or BR) criteria, eg, '*I need something by [Artist] with [Lyric]'*.

The 'Creative Search' presents the User with a selection of facets from SR, MR and BR. In Table 17 they have been grouped by repertoire for ease of comparison. BR facets are derived from release dates and chart positions. These facets are often used to help in searches for specific age groups – a song released in 1975 may resonate with a targeted audience born in the early 1960s or may carry memories of a specific era, for

example, while an 80s number 1 is likely to be familiar to a wide range of viewers, especially those born in the 1970s.

Genre is extremely detailed, with 37 categories and 358 sub-categories. Examples follow:

> *Blues: New York Blues, Texas Blues, Soul-Blues, Piano Blues, Jump Blues, Louisiana Blues, Jazz Blues, Harmonica Blues, Chicago Blues, Delta Blues, East Coast Blues, Electric Blues, Cajun/Zydeco, Country Blues, Modern Electric*
>
> *Electronic: Chillout, Dance, Down Tempo, Electronica, Drum N Bass, Electro/Break, House, Techno/Trance*
>
> *Pop: Sunshine Pop, Teen Ballad, Girl-Group, Girl Band, Bubblegum, Brill Building Pop, Boy Band, Baroque Pop, Teen Idol, Teen Beat, Teen Pop, Celebrity Tribute Albums, Teen Rock, 80s Pop/Rock, Europop*
>
> *Reggae/Caribbean: Soca, West Indies, Lovers Rock, Junkanoo, Jamaican Soul, Jamaica, Guaguanco, Dub Poetry, Dub, DJ, Smooth Reggae, Ska, Rub a Dub, Political Reggae, Nyahbinghi, Pop-Reggae, Ragga, Reggae, Reggae Gospel, Reggaeton, Rock Steady, Roots Reggae, Dancehall, Culture, Bluebeat, Afro-Cuban, Barbados, Calypso, Caribbean, Caribbean Folk, Contemporary Reggae, Cuba, Cadance, Zouk*

It can be seen from these examples, which are representative of the whole Genre category, that MSE003 are using extremely finely detailed criteria to organize their Genre. This extremely specific categorization is unlikely to represent the queries issued by Users, and is more likely to confuse the User than help in their search, particularly for an unknown item.

This approach to extreme detail continues with the '*Instrument*' category. There are 9 instruments with 63 sub-sections, including these examples :

> *Guitar: Acoustic Guitar, Banjo, Electric Guitar (Clean), Electric Guitar (Distorted), Mandolin, Pedal Steel Guitar, Ukulele*

Reeds: Accordian/Concertina, Bagpipes, Bassoon/Contrabassoon, Clarinet, Harmonica, Jew's Harp, Kazoo, Oboe/English Horn, Saxophone

Percussion: Acoustic Drums, Auxillery Percussion, Congas/Bongos, Electronic Drums, Gong, Snaps/Claps, Tablas, Tambourine, Timbales, Turntable, Mallets, Gamelan, Glockenspiel, Marimba/Xylophone, Steel Drums, Timpani, Vibraphone

Again, the emphasis on extreme detail indicates an assumption that this is the type of information the User employs in their search. Based on the interviews and briefs analysis this is unlikely.

The Tempo options ('*Very slow / Slow / Medium slow / Medium fast / Fast / Very fast*'), however are less technical and it is likely that Users would understand these options.

The SR is represented by four categories: '*Featured Playlists*' (38), '*Activities*' (25), '*Feelings*' (30) and '*Moods*' (20), all designed to find unknown items by narrowing the catalogue for the User by facets associated with SR:

Featured playlists: Dating, Committing/Marrying, Making Love, Romantic Dining, Wedding Reception, Dancing, Partying, Metro-Lounging, Clubbing, Hookah Smoking [extract, first 10]

Activities: Committing/Marrying, Wooing, Dancing, Dreaming, Getting it on, Partying, Teaching/Giving Advice, Driving, Traveling, Working [extract, first 10]

Feelings: General Happiness, Love-General Romantic, Love-New, Friends/Family/Unity, Recovery, Love-Erotic Lust, Health/Wellness, Supernatural/Destiny, Religion/Spirituality, Individuality/Self Awareness [extract, first 10]

Moods: Appreciative, Confident/Encouraging, Excited, Joyous, Silly/Funny, Mystical/Magical, Nostalgic, Peaceful, Depressed/Grieving, Angry/Frustrated [extract, first 10]

The idea of music to accompany specific activities (‘*Romantic Dining’, ‘Hookah Smoking’, ‘Partying’* or *‘Working’* for example) relates clearly to the use in advertising and film making of enhancing the narrative of a scene and these categories may provide the musically inexperienced User with a link to a choice of music which may indeed fit these types of use, decided in advance by the cataloguers of the collection. The selection of ‘*playlist*’ goes on to include the highly specific ‘Bull Riding’, ‘Cigar Smoking’ and ‘Anti War Demonstration’, while ‘*Activities’* appear to be arrange in a continuum of increasingly bad behaviour, including ‘*drinking/drugs*’, ‘*prostitution*’ and, finally, ‘*suicide*’. This continuum is also represented in the ‘*Feelings’* (from ‘*General Happiness’* to ‘*’Death’* and ‘*General Unhappiness’)* and ‘*Moods’* categories (from *‘Appreciative’* to ‘*Jealous’*).

There are a limited number of each of these categorizations. It is up to the User to look through the choices and select those closer to their brief, and then rely on their interpretation matching that of the cataloguer.

MSE003’s ranking of repertoires may therefore be summarized as MSBC:

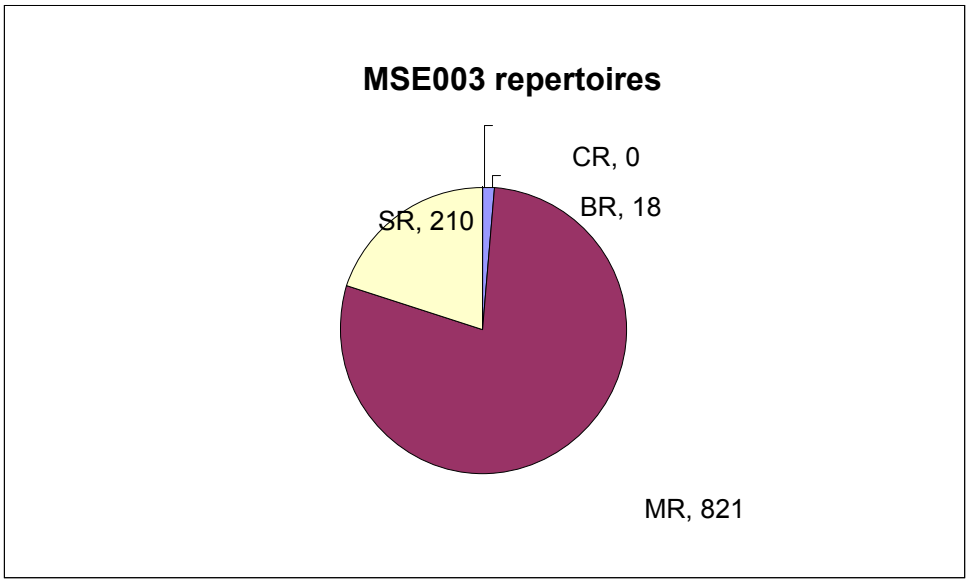


Figure 23 MSE003 repertoires

e. MSE004

The MSE004 site has a simple interface and offers a limited range of choices to the User, drawn from BR and MR. There are no examples of SR presented to the User.

Indeed, there is very little information presented to the User, much of the text boxes being free, with no apparent controlled vocabulary or drop down selections.

The summary of the MSE004 search engine follows:

MSE004		
Keyword		
Album	BR	
Category	BR	3
Controlled territory	BR	48
Label	BR	
Length	BR	0'0'0' - 99'59'59
One stop choice	BR	2
Originating territory	BR	41
Release year	BR	1900-2010
Version	BR	
Writer	BR	
Artist	MR	
Genre	MR	20
Song title	MR	
Tempo	MR	4

Table 18 MSE004 search engine summary

MR is represented by '*Artist', 'Song title', 'Tempo'* (*'Uptempo', 'Midtempo', 'Downtempo', 'Ballad'*) and *'Genre'* (20):

> *'Alternative / Indie, Blues, Classical, Country, Dance, Electronica, Festive/Religious, Film/TV, Flamenco, Folk, Hip Hop/Rap, Holiday, Jazz, Latin, Pop, R&B / Soul, Reggae, Rock, Trad National, World'*

This 'formal' arrangement of categories is less colloquial than some others, and by employing only over-arching categories has a feel of tradition and formality. There are some categories that seem to be mis-placed: '*Flamenco'* is not in the expected '*World'* section, '*Holiday'* is not in '*Festive/Religious'* and '*Trad National*'' is not in either '*Folk*' or '*World*'. The use of '*Uptempo / Midtempo / Downtempo / Ballad'* as tempo descriptors is also unusual, for the fact that it has a more technical source than

'fast/slow' but also because '*Ballad'* is offered as a fourth choice when a Ballad is more usually a style of song rather than a speed.

The BR elements also feature some unusual aspects. The length of piece is offered as an option, running from 0 seconds to an extremely lengthy 99 hours, 59 minutes and 59 seconds. With the average pop song lasting around 3 minutes, and the average length of a commercial being 30 seconds it seems unlikely this range of timing would be required in this type of search. 48 controlled territories are also offered as choices, alongside 41 originating territories. This type of BR detail seems to be rarely used in briefs and it is likely that these fields are not often accessed in synchronisation search.

The only opportunity for the User to access this catalogue using SR is in the free text '*Keywords'* box. Although it is possible some of the SR vocabulary is employed as metadata attached to the files in this collection there is no way for the User to be able to tell whether their language matches that of the MSE004 cataloguer without entering it into the box and listening to the results, if any are generated.

MSE004's ranking of repertoires may therefore be summarized as MBSC:

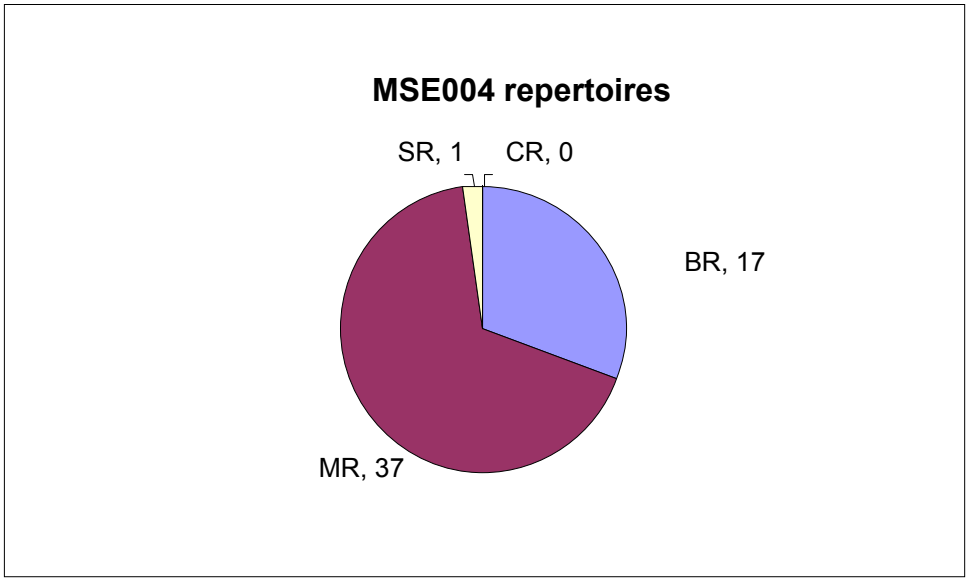


Figure 24 MSE004 repertoires

f. MSE005

The summary of the MSE005 search engine follows:

MSE005			
Simple search	Artist	MR	
Simple search	Writer	BR	
Simple search	Song title	MR	
Simple search	Subject of lyrics	SR	
Simple search	Genre	MR	32
Simple search	Date range	BR	
Simple search	Chart position	BR	9
Simple search	Chart type	BR	17
Simple search	Year	BR	
Simple search	Easy clear	BR	
Advanced search	Artist	MR	
Advanced search	Writer	BR	
Advanced search	Song title	MR	
Advanced search	Subject of lyrics	SR	
Advanced search	Date range	BR	
Advanced search	Chart position	BR	9
Advanced search	Chart type	BR	17
Advanced search	Year	BR	
Advanced search	Easy clear	BR	
Advanced search	Genre	MR	32
Advanced search	Sub-genre	MR	1295
Advanced search	Mood group	SR	41
Advanced search	Mood	SR	612
Advanced search	Language	MR	6
Advanced search	Tempo	MR	5
Advanced search	Instruments	MR	93
Advanced search	Vocals	MR	10

Table 19 MSE005 search engine summary

MSE005's Simple search shows a reliance on BR (Writer, date, chart type and position, year, easy clear) and MR (Artist, song title, 32 genres), with an SR free text option for subject of lyrics. This is designed to serve a User searching for a rock chart hit from the 1980s about love, for example. If this type of search does not satisfy, the Advanced search includes these options but adds more MR in the form of sub-genre (1295), Language (6), Tempo (5), Instruments (93) and Vocals (10). An example from the highly detailed sub-genre list follows:

> *Pop: Acid House, Adult Alternative, Adult Contemporary, Adult Contemporary, Adult Contemporary, Adult Contemporary, Album Rock, Alternative Folk, Alternative Pop/Rock, Alternative Rock, Ambient, Ambient Pop, American, American Trad Rock, Americana, Ballad, Ballad, Ballad, Beat, Blue Eyed Soul,*

Blue Eyed Soul, Blues Rock, Brill Building Pop, British Invasion, Britpop, Britrock, Bubblegum, Christmas, Christmas – Exotica, Christmas – Pop, Classic Rock, Classical Pop, Classical Pop, Club, Contemporary, Contemporary, Contemporary, Contemporary, Contemporary Gospel, Country Pop, Country Pop Male, Country Rock, Countrypolitan, Dance, Dance, Dance, Dance, Dance Pop, Dance Pop, Dance Pop, Disco, Disco, Doo Wop, Downtempo, Dream Pop, Early Brit. Pop/Rock, Early R&B, Electro-Pop, Electronica, Euro Dance, Euro Dance, Euro Pop, Euro Pop, Exotica, Film Dramatic Dark, Folk Pop, Folk Pop, Folk Rock, France: Ye-Ye, Funk, Gangsta, Garage Punk, Girl Group, Girl Group, Girl Group, Glam, Gospel Soul, Hi-NRG, House, House, House, Indie, Indie Pop, Indie Rock, Instrumental Pop, Instrumental Rock, Jazz Pop, Latin Jazz, Latin Pop, Lounge, Lyric Hook, Madchester, Memphis Soul, Merseybeat, Mod, Modern Rock, Modern Rock Female, Modern Rock Male, Neo New Wave, Neo Soul, New Wave, New Wave, Novelty, Pop, Pop, Pop, Pop, Pop, Pop, Pop, Pop Ballad Female, Pop Ballad Male, Pop Funk, Pop Rap, Pop Rock, Pop Rock Female, Pop Rock Instrumentals, Pop Rock Male, Pop Soul, Pop/RockPsychedelic Pop, Punk Pop, Punk Revival, Pure Pop, R&B Female, Reflective, Retro Lounge, Retro Rockabilly, Retro Space Age Pop, Rock, Rock, Rock & Roll, Rock Female, Rockabilly, Singer/Songwriter, Ska Revival, Smooth, Soft Rock, Soft Rock, Soft Rock, Soul, Soul Pop, Sunshine Pop, Sunshine Pop, Surf, Surf Pop, Swing, Swinging 60's, Symphonic Rock, Synth Pop, Synth Pop, Techno, Teen Idol, Teen Pop, Teen Pop Female, Traditional pop, Traditional Pop, Trip Hop, Upbeat, Urban, Vegas Pop, Vocal, Vocal Pop, Vocal Pop, Vocal Pop, World- groove

This amounts to 165 types of Pop (including their duplications) and is highly specialized, appearing to be designed for musicological experts. It is not intuitive, as the inclusion of other categories such as dates and other genres, would force the User to review extensive lists of alternative before making their choice. Again this list has a very American flavour, identifiable by genres such as ‘British Invasion’ (60s British beat bands following The Beatles), ‘Countrypolitan’ (60s/70s Nashville country) and ‘World-groove’. Although it may initially appear that the use of such a large number of highly refined sub-genres would be useful, offering these in a drop-down menu is unlikely to meet the information needs of the time-poor music searchers in this study.

The tempo (‘*Any, Fast, Medium, Medium-Fast, Medium-Slow, Slow’*) employ the general tempo vocabulary used in these search engines, as does language (‘*Any, English, French, German, Italian, Japanese, Spanish*’). There are 93 instruments to choose from, some highly specialized (‘*Cymbalon, Dulcimer, Sarangi’*) and vocal choices from the store of MR: (‘*Any, Both, Chorus, Duet, Female, Female Chorus, Male, Male Chorus, None/Instrumental, Sparse*’).

The SR focuses on Mood and song theme collections.

Mood examples:

> *Happy/Fun: Blissful, Boisterous, Breezy, Bubbly, Buoyant, Carefree, Celebratory, Contented, Euphoric, Excited, Excitement, Exuberant, Feelgood, Frisky, Fun, Funny, Good Time, Happy, High Spirited, Joyful, Joyous, Jubilant, Light Hearted, Party Time, Playful, Raucous, Rousing, Silly, Sunny, Swinging, Upbeat, Whimsical*
>
> *Partying/Celebratory: Boisterous, Bouncy, Bubbly, Celebratory, Clubish, Danceable, Energetic, Euphoric, Exuberant, Festive, Fun, Funky, Good Time, Groovy, Happy, Hedonistic, High Spirited, Joyful, Joyous, Jubilant, Party Time, Swinging, Upbeat, Zany*
>
> *Sexual: Sexual Desire, Erotic, Frisky, Hedonistic, Longing, Lust, Naughty, Passionate, Seductive, Sensual, Sexual, Sexy, Suggestive, Sultry, Wanting, Yearning.*

Although the index for Mood groups (41) and (sub-groups) of Moods (612) appears to be comprehensive it can be seen from the examples above that many of the alternatives within a Mood are synonymous with the main Mood category. These detailed categories would be extremely difficult to classify consistently (Is a song ‘*Joyful’* or ‘*Joyous”*? Is a song ‘*Sensual*’ or ‘*Sexual*’). Mass duplication of categories (eg ‘*Boisterous*’ appears 3 times, ‘*High Spirited*’, ‘*Joyful*’, ‘*Joyous*’ appear in ‘*Happy/Fun*’ and in ‘*Partying/Celebrating’*, ‘*High Spirited*’ appearing seven times in all). This duplication indicates that the collection is being spammed with classifications, meaning a piece marked as ‘*High Spirited*’ will turn up in a large number of searches for different Mood categories (‘*Anthemic’, ‘Dramatic’, ‘Happy/Fun’,*

'Partying/Celebratory', 'Passionate', 'Positive/Uplifting', 'Sassy'). It is likely from this observation that these categories are also the keywords relating to free text song subject search, indicating that the catalogue may not be as highly refined as it first may appear, with multiple songs being classified using the same or very similar classifications.

MSE005 also offer a choice of 'theme based collections' including:

> *Transportation Songs, Travel / Road Songs, Truth Songs, Urgency Songs, Waltz Whistle Songs, Wild Songs, Wish Songs, Wonderful Songs, World Songs, You Can Do It Songs*

These collections are designed as short-cuts for inexperienced time-pressed searchers ('*Looking for song ideas? Check out our song lists. You can find keyword and theme based collections that feature UMPG's most treasured gems. Please select a song list below*'). The activities in question appear to relate to themes that may appear in film clips or advertising. Combining and activity or subject with the word 'songs' to identify each list reminds the User that this is a resource owned by a music publisher, rather than a record company. Music publishers' interests are in songs rather than recordings (or tracks) and despite the lack of the use of the word 'song' in the briefs where 'track' is much preferred.

MSE005's ranking of repertoires may therefore be summarized as MBSC:

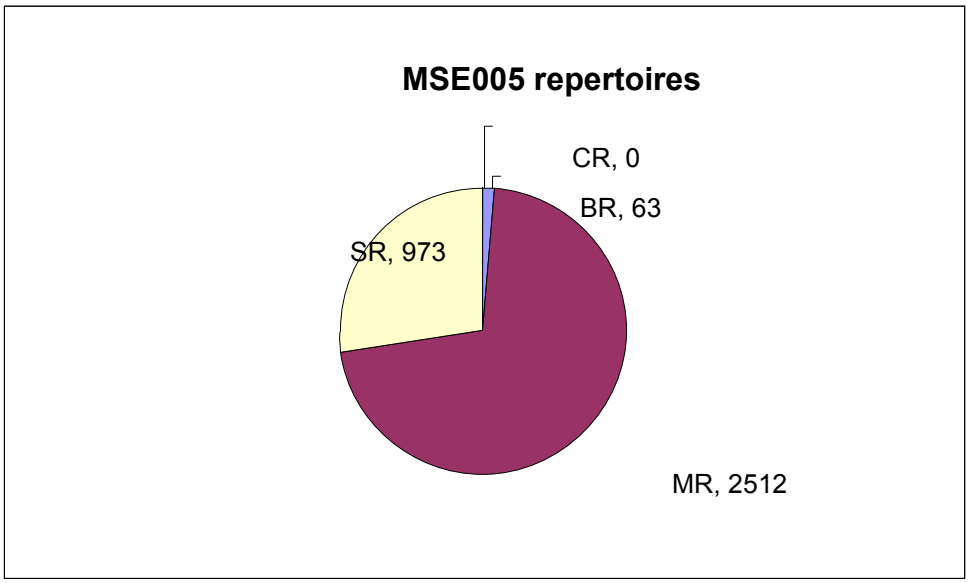


Figure 25 MSE005 repertoires

g. Summary – Repertoires in search engines

To summarise, three of the search engines prioritise SR and MR in their interface, while three prioritise MR and BR or SR (Table 20):

MSE001	SMBC
MSE002	SMBC
MSE006	SMBC
MSE004	MBSC
MSE003	MSBC
MSE005	MSBC

Table 20 Search engines' repertoire rankings

It is possible that these patterns may have some bearing on the communications process, particularly the encoding/decoding element of the model. This will be discussed in Chapter 12.

iii. Repertoires in briefs

The codes for briefs in the previous analysis were this:

Artist, Audience, Brand, Budget, Chart, Clear, Date, Exclude, Exploitation, Extra-musical, Feel, Film Title, Format, Genre, Instrument, Instrumental, Left field, Length, Lyrics, Mood, Music Function, Music Structure, Music Style, Other intertextual references, Project Title, Similar, Song Subject, Song Title, Tempo, Territory, Version, Visuals, Visuals Function, Visuals Subject, Vocal

These facets can be organized according to the repertoires thus:

Musical Repertoire	Artist, Genre, Instrument, Instrumental, Length, Lyrics, Music Structure, Music Style, Similar, Song Title, Tempo, Vocal
Business Repertoire	Budget, Chart, Clear, Date, Exploitation, Format, Territory, Version,
Soundtrack Repertoire	Brand, Extra-musical, Feel, Film Title, Left Field, Mood, Music Function, Other intertextual References, Project Title, Song Subject, Visuals, Visuals Function, Visuals Subject
Cultural Repertoire	Audience

Table 21 Briefs facets as repertoires

a. Brief 009

Many of the briefs show a range of repertoires. The example below is Brief 009, for music for a credit card commercial, coded using XML-type mark-up:

> *'We are looking for a <SR>cool, fun, jaunty</SR> and <MR>upbeat track</MR> with a <SR>happy vibe</SR> and a <SR>certain feel good factor</SR> - <SR>it shouldn't take itself too seriously</SR>. Ideally it should be from a
new</BR> and <MR>up-and-coming artist</MR>; <SR>[client] would like to be associated with a fresh
new</BR> sound, and not with something
old or dated</BR> </SR>. The <SR>music should guide us through the story and mirror the positive journey the main character is taking. He is in his own little world of fun, which contrasts with the busy urban surroundings</SR>. The music should be <SR>positive, easy going and make the listener smile.</SR>*
>
> *Although the overall <MR>tempo of the song should be upbeat</MR> <SR>to reflect the gliding motion of the journey</SR>, <MR>the pace should be varied</MR>, and <MR>the track should have some quieter moments</MR> and <MR>enough space</MR> to <SR>accommodate sound effects – the character will be going down the slide at different speeds at different points, occasionally slowing down or even stopping</SR>. Please avoid anything too <MR>folky</MR> or <SR>dreamy</SR>.*
>
> *Any <MR>lyrics should relate loosely to the story of the ad</MR>, which <SR>conveys a positive journey</SR>. Please avoid any songs with specific <MR>lyrics, e.g. to do with driving a car.</MR>'*

Examining the MR in this brief enables one approach to the music being sought:

> *Upbeat track, up-and-coming artist, tempo of the song should be upbeat, the pace should be varied, the track should have some quieter moments, enough space, not folky, lyrics relate to positive journey.*

Extracting the SR in a similar fashion leads to this request:

Cool, fun, jaunty, happy vibe, certain feel-good factor, it shouldn't take itself too seriously, a fresh new sound, and not something old or dated, music should guide us through the story and mirror the positive journey the main character is taking. He is in his own little world of fun, which contrasts with the busy urban surroundings, positive, easy going and make the listener smile, reflect the gliding motion of the journey, accommodate sound effects – the character will be going down the slide at different speeds at different points, occasionally slowing down or even stopping, not dreamy, conveys a positive journey.

The BR emphasises the need for a *new* piece of music, reinforcing this by saying '*not old or dated*'.

Each repertoire requires that the piece of music be by a new artist (*up-and-coming artist, fresh new sound, not old or dated*). This unifies the repertoires and reinforcing what appears to be a very important part of the request. Both the SR and MR also seem to indicate that the main tempo of the music should be uptempo, although it should also vary. It should also convey a message lyrically (in MR) and musically (in SR) of a positive journey. While the MR focuses on the elements of music, the SR alternates between a discussion of the feel or effect required of the music (*Cool, fun, jaunty, happy vibe, certain feel-good factor, it shouldn't take itself too seriously, a fresh new sound, and not something old or dated, music should guide us through the story and mirror the positive journey the main character is taking)* and a discussion of the film clip (*He is in his own little world of fun, which contrasts with the busy urban surroundings… the character will be going down the slide at different speeds at different points, occasionally slowing down or even stopping… conveys a positive journey*). These interwoven ideas reinforce the role of the music within the film clip.

b. Brief 003:

3. [Brand] – [PRODUCT washing powder] Music Brief

<SR>The music needs to complement the visuals without being too cold (visuals are quite interesting camera techniques in a cool white infinity cove setting)</SR>

*Probably looking at a fresh
contemporary</BR> composition which maybe combines a <MR>simple acoustic guitar or piano line</MR> <SR>punctuated with fragments of 'found' sounds from the laundry world – things like lids popping, water filling, buttons being pushed, dials being turned, doors being closed, zips etc</SR>*

<MR>Not a song.</MR>

<MR>Not Vivaldi.</MR>

Should ideally be <SR>distinctive and memorable but also natural and emotionally engaging </SR>– so <MR>not a 'science computer world' piece</MR> basically.

*
Would be really good to have it as a mobile ring-tone download</BR>*

Again, separating the repertoires provides clearer insight into the parameters of the request. Firstly, with MR:

simple acoustic guitar or piano line, Not a song, Not Vivaldi, not a 'science computer world' piece

Although this request is not detailed the 'not' criteria do help to narrow down the search. The User requires a simple piece of music that is possibly instrumental (*not a song*) and possibly not electronic (*not a 'science computer world' piece*) and was not composed by Vivaldi (possibly because a competitor used a Vivaldi piece). This indicates that a simple piece of classical music may suit their purpose.

Moving on to SR:

The music needs to complement the visuals without being too cold (visuals are quite interesting camera techniques in a cool white infinity cove setting), punctuated with fragments of 'found' sounds from the laundry world – things like lids popping, water filling, buttons being pushed, dials being turned, doors being closed, zips etc, distinctive and memorable but also natural and emotionally engaging

These comments seem to indicate the need for a piece of music that complements the (cool) visuals but is not too cold and includes (or allows the inclusion of) sound effects. The piece should be *distinctive and memorable but also natural and emotionally engaging* – again this reinforces the 'non-scientific' nature of the music required (natural, emotional) and brings in new facets of distinctive and memorable. These facets of SR are extremely difficult to interpret, although again a well-known instrumental classical piece may be appropriate.

The BR mention of having the track as a *mobile ring-tone download* reminds the reader of the commercial purpose of this synchronisation and may inform the searcher that the piece needs to work as an effective ring-tone, again being distinctive and memorable.

c. Brief 004:

4 <SR>[BRAND] – [TITLE]

Product – The new [BRAND] phone, with 5 mega pixels, it's more camera than phone.

The idea of the spot a based around our hero who one day finds a little toy, called [TITLE], in his pocket. Instead of discarding it, he has a spontaneous day of taking photographs of it, playing with perspective and cropping it, so it looks like it's climbing a building like King Kong, or riding a fire engine like a surf board. At home that night, instead of reading his young son a goodnight story from a book, he tells him a story using the photographs he has taken on his [BRAND] phone.

Endline – I ([BRAND]) Sharing Stories</SR>

Therefore the music needs to <SR>reflect the charm and playful nature of the spot.</SR> Our hero, Pablo, and his performance is key to this <SR>charm</SR>. The music track we use wants to <SR>bring his performance alive</SR>. He's <SR>slightly quirky, totally spontaneous and sees a playful moment in the mundane</SR>. As ultimately, <SR>this spot is all about a story</SR> that Pablo, our dad, tells his son, <SR>it would be

*wonderful if the music reflected this story-telling nature. If the music was child like and wondrous, it may tell a story all by itself.</SR> Or perhaps <MR>the music changes to this when we cut to see father and son on the couch together</MR>. We need to avoid the spot from going too <SR>'mushy' or 'schmaltzy'</SR>, and therefore wants to be <MR>upbeat</MR> whilst <SR>charming</SR>. It doesn't want to be <SR>melancholic</SR>, <MR>down beat</MR>, <SR>over the top, over powering or dark, but optimistic, light hearted,</SR>
contemporary
 and <SR>charming.</SR>*

Finally this brief describes a need for a piece of music to accompany a mobile phone commercial. MR is succinct here:

the music changes to this [child like and wondrous] when we cut to see father and son on the couch together; upbeat; not down beat

and BR similarly so:

contemporary

The brief relying on SR for its exposition, which is packed with significant keywords, marked below in **bold**:

4 <SR>[BRAND] – [TITLE]

Product – The new [BRAND] phone, with 5 mega pixels, it's more camera than phone.

The idea of the spot a based around our hero who one day finds a little toy, called [TITLE], in his pocket. Instead of discarding it, he has a ***spontaneous*** *day of taking photographs of it,* ***playing*** *with perspective and cropping it, so it looks like it's climbing a building like King Kong, or riding a fire engine like a surf board. At home that night, instead of reading his young son a goodnight story from a book,* ***he tells him a story*** *using the photographs he has taken on his [BRAND] phone.*

Endline – I ([BRAND]) Sharing Stories</SR>

*Therefore the music needs to <SR>reflect the **charm** and **playful nature** of the spot.</SR> Our hero, Pablo, and his performance is key to this <SR>charm</SR>. The music track we use wants to <SR>**bring his performance alive**</SR>. He's <SR>**slightly quirky, totally spontaneous and sees a playful moment in the mundane**</SR>. As ultimately, <SR>this spot is all about a story</SR> that Pablo, our dad, tells his son, <SR>it would be wonderful if the **music reflected this story-telling nature**. If the music was **child like** and **wondrous**, it may tell a story all by itself.</SR> Or perhaps <MR>the music changes to this when we cut to see father and son on the couch together</MR>. We need to **avoid** the spot from going too <SR>'**mushy'** or '**schmaltzy'**</SR>, and therefore wants to be <MR>upbeat</MR> whilst <SR>**charming**</SR>. It **doesn't** want to be <SR>**melancholic**</SR>, <MR>down beat</MR>, <SR>**over the top, over powering** or **dark**, but **optimistic**, **light hearted**,</SR>
contemporary
 and <SR>**charming**.</SR>*

Examining this vocabulary in isolation we find the table below:

Want	**Avoid**
Spontaneous	*Mushy*
Playing	*Schmaltzy*
Story	*Melancholic*
Charm	*Over the top*
Playful	*Over powering*
Bring performance alive	*Dark*
Slightly quirky	
Totally spontaneous	
Playful moment in mundane	
Story-telling	
Childlike	
Wondrous	
Charming	
Optimistic	
Light hearted	
Charming	

Table 22 Brief 004 - Want / Avoid

This vocabulary is not derived from technical musical vocabulary or film-making vocabulary. It is, however, a very clear example of the difficulty Users have in encoding their musical needs. These highly subjective contextual criteria, especially the

frequently used *'playful'*, *'charming'* and '*spontaneous'* are extremely difficult to match to specific pieces of music. They are emotions evoked in the listener rather than musical devices.

In all three of these examples, the SMBC repertoire ranking use means the query is barely encoded in a way that relates to the music Owners stores of codes and competences. This indicates that it is likely that there will be difficulty in matching these briefs to the search engines.

d. Summary - repertoires in briefs

Examining the vocabulary used in the briefs coded by repertoire may offer some insights into the ways the Users are encoding their queries. To summarise, the repertoires used in the briefs can be ranked as SMBC and represented thus (Figure 26):

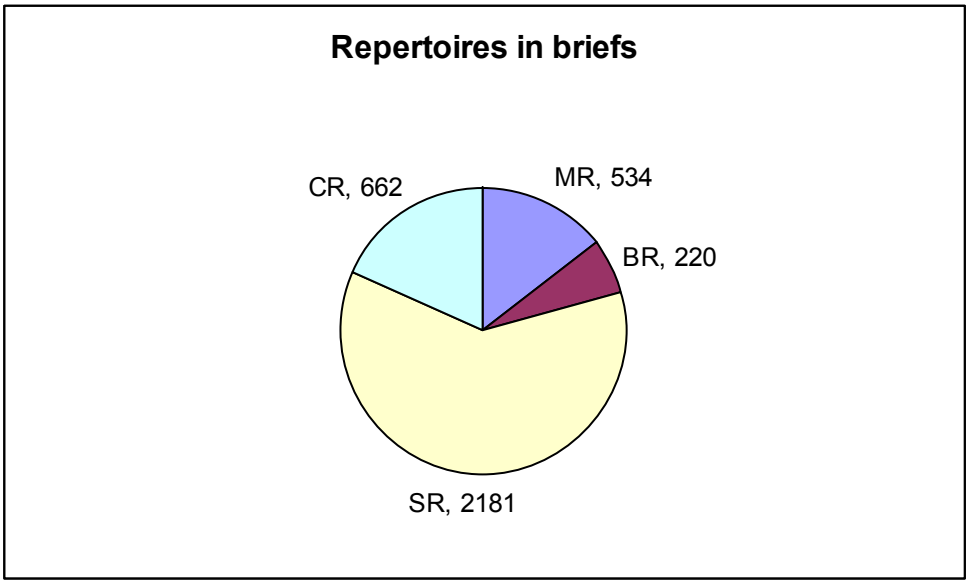


Figure 26 Repertoires in briefs

iv. Conclusion

This chapter has investigated the use of the four repertoires in 6 synchronisation search engines and the collection of 27 briefs, showing three examples of analysis. While all the texts under analysis feature most or all of the repertoires, it appears that three search engines comprise mainly SMBC while the other three rely more on MR and either BR or SR. CR appears only rarely, if at all, in the search engines but appears

more frequently in the briefs, which predominantly rely on SR to encode their query (Table 20). The briefs also feature all of the repertoires in a ranking of SCMB. They emphasise SR, BR rarely appearing (Figure 26). Again, referring to Table 11, the Repertoires (Codes and Competences) have been shown to be shared amongst the Users and Owners, although with some of the Owner texts there appears to be an emphasis on User repertoires in an attempt to ease the communication process.

v. Next steps

It may be possible that analyzing the ranking of repertoires in the Owner and User texts could be used to predict whether or not communication will successfully take place. The next chapter examines data from the relevance judgments ('the Spotify tests') and discusses the ability of the search engines to offer a choice of music that is relevant to the written queries, which will indicate whether or not successful communication is taking place.

12. THE SPOTIFY TESTS

i. Introduction

This chapter examines data from the relevance judgments ('the Spotify tests') and discusses the ability of the search engines to offer a choice of music that is relevant to the written queries. The relevance judgements have been discussed (Chapter 7) in relation to Saracevic's framework. It was shown that both content and contextual criteria are used in these observations to determine relevance of songs to a brief. The repertoires employed in the briefs were discussed in Chapter 11, indicating that the briefs are encoded mainly from an SR perspective, while the search engines are encoded mainly using MR, although both types of texts employ other repertoires.

Here the relevance judgments themselves are discussed and an attempt is made to evaluate the search engines based on these user observations in order to fulfil Objectives 5 ("To identify, investigate, analyse and evaluate various retrieval systems used in music industry MIR") and 6 ("To test the model against findings").

ii. Methodology

All of the briefs were organized according to the coding used in Chapter 6, with a view to extracting facets that could be applied to the search engines. The coding used is listed below:

> *Artist, Audience, Brand, Budget, Chart, Clear, Date, Exclude, Exploitation, Extra-musical, Feel, Film Title, Format, Genre, Instrument, Instrumental, Keyword, Left field, Length, Lyrics, Mood, Music Function, Music Structure, Music Style, Name, Other intertextual references, Project Title, Similar, Song Subject, Song Title, Tempo, Territory, Version, Visuals, Visuals , Function, Visuals Subject, Vocal*

Although most of the 27 briefs could be coded in this way, a small number of briefs (5) did not include any information that matched these codes. These came from one source, a TV trailer-maker. The briefs in question are used by the TV company's

marketing department to inform the trailer maker about the requirements for the trailer. An example follows:

2. On Air Creative Brief

Programme: [REMOVED] TX Date:

No of Episodes: Generic Promo Date:

Context:

Our aim for [REMOVED] is to broaden its appeal by providing our audience with a wider array of programming. We'd like to disassociate [REMOVED] from "naughty" late night programming by introducing a real life crime series that will appeal to viewers.

Target Audience : Primary

Segment 5 (MAIN)

This segment loves a range of genres when it comes to their TV viewing. They love television and especially "non pc" programming. They also enjoy watching light entertainment programmes that don't require much thinking. Seg. 5 men enjoy going to football matches and a good few pints of beer.

Secondary

Segment 2

These viewers are fun loving males who are more fashion and health conscious. They may be fickle but can become loyal viewers of programmes they enjoy, which include series such as Lost and Little Britain. Publications they like to read include, Maxim, Heat and Time Out.

Cross Promo: No

Off Air: No

Planned TVR's & Media Cost: Producer: [REMOVED]

Briefed By: [REMOVED] Briefed On: [REMOVED]

Task:

Shift perceptions of [REMOVED] (as T&A) by showcasing programming that's not necessarily associated to the channel.

Proposition: Real Life Law & Disorder

Support:

At 9pm [REMOVED] will be starting a special strand that focuses on real life crimefighters and emergency units.
Our target audience enjoys watching their old time favourites and reality shows as a form of entertainment. These crime reality shows are not too intellectual and will allow our audience a form of escapism after a hard day's work.
Tone: Blokey, Fun, Tough
Mandatories: SAT
Sponsorship
Cast Billing Order
URL
Interactive
Logos
Graphic/VO
Programme Graphics
ECP's
Other
Timings: Timings to be advised by producer
Script
Ist Avid
On Promoweb
Other:
Budget:
Primary Content: [REMOVED]

All five TV trailer briefs followed the style and format of the example above (Brief 002). The text discusses the content of the programme, details the targeted audience's demographic profile and defines the task to 'broaden appeal' and 'shift perceptions' of the strand. Much of the criteria are technical and fields are not completed. It was decided that these briefs served a different function than the others in the collection. These are designed to communicate between User stakeholders, and while they are specifically to inform the participant what the aim of the trailer is, are not designed specifically to discuss the music used as the trailer backing track. The participant's (010SUP) role is to use her expertise to search for music that will help the trailer meet these requirements. Her brief to the Owners is therefore an interpretation of

this brief and is discussed in the previous chapter. These briefs could not be applied to the six search engines and were therefore discarded.

One additional brief was discarded because it was a script for a commercial (below) and could not be coded:

8. TELEVISION SCRIPT FOR RESEARCH

CLIENT [REMOVED] PRODUCT [REMOVED] TITLE Cones LENGTH 30

Scene 1

Open on a [REMOVED] driving through a huge expanse of open tarmac.

Scene 2

It enters a corridor of red traffic cones.

Scene 3

The corridor narrows and becomes an 's' bend with the cones really close to the tyres. Without slowing down, and without knocking over a single cone, the [REMOVED] steers through the bends perfectly.

Scene 4

It then drives around a large circle of cones, sticking expertly to the curve.

Scene 5

It drives between a series of squares, split into intersections, turning left and right at every corner it comes to.

Scene 6

The [REMOVED] then moves into an area of cones, dotted around randomly. It skillfully finds its way through, deftly manoeuvring between the cones.

Scene 7

It then drives down a straight line of cones, positioned a few metres apart. It weaves between them, jinking this way and that in a sure-footed manner.

Scene 8

It exits the line and stops.

Scene 9

A family come from out of frame and begin to pile into the [REMOVED].

Scene 10

Cut to inside the car to see 2 kids getting into the back seats and the 3rd in the boot. A dog hops onto the seat next to the kid on the boot. (This will feel very natural with little human touches as they all pile into the [REMOVED])

Scene 11

Cut back outside as mum closes boot and gets into the front passenger seat.

Scene 12

The camera starts moving up into the air.

Scene

Scene 13

The [REMOVED] drives off.

Scene 12

The camera continues moving up into the air.

Scene 14

[REMOVED]

A super appears over the picture.

Super: [REMOVED]

Cut to end graphic.

End line / Logo: [REMOVED]

This highly specific film script features no information on the type of music required to accompany the images, the decision being left to the interpretation by the music searcher. One brief was also supplied with the same wording by two participants. The duplicate was not included. This left 19 briefs which were coded, an example below:

Brief 001

<BRAND>brand</BRAND> is [REMOVED] and the <FORMAT> ad is called </FORMAT> <PROJECT TITLE> "Torture them crusts".</PROJECT TITLE>The<VISUALS> visuals are about</VISUALS><VISUALS SUBJECT> children not eating their crusts and presenting different ways of torturing them (i.e smashing them into their plates, drowning them in their orange juice). </VISUALS SUBJECT>I am looking for music that will <MUSIC FUNCTION> juxtapose against this theme.</MUSIC FUNCTION> I.E a <CHART> classic </CHART><SIMILAR> piece of music like </SIMILAR><ARTIST> Pink Floyd

– </ARTIST><SONG TITLE> We don't need no education</SONG TITLE> - a track which is about <SONG SUBJECT> rebellion.</SONG SUBJECT> Potentially this track maybe used just as the <INSTRUMENTAL> instrumentals</INSTRUMENTAL> or <VERSION> re-scored</VERSION> to perhaps just <INSTRUMENT> piano</INSTRUMENT> etc... to give a <MOOD> very charming sound.<MOOD> OR - a <MOOD> beautiful </MOOD><GENRE> nursery rhyme</GENRE> which could be <VERSION> re-scored </VERSION>to a <GENRE> heavy metal </GENRE><INSTRUMENT> guitar </INSTRUMENT><GENRE> rock sound </GENRE><SIMILAR> (like <SIMILAR><TITLE> twinkle twinkle little star)</TITLE> - not sure if you have anything like this <VERSION> re-written?</VERSION>

Ideally the track will be <CHART> well-known</CHART> and the <BUDGET>budget</BUDGET> can be stretched.

Each coded brief was then applied to each search engine. Only the words or terms in the query were inputted into each search engine and synonyms and alternatives were not tried, although it is likely that a User would revise their query using alternative concepts. This removed the researcher's opinions from the evaluation and generated lists of results that matched the query as closely as possible. It was the vocabulary of the briefs that was being examined, not the imagination of the researcher.

Continuing with Brief 001 as the example, the terms used in the brief were then applied to the search engine. The table below shows which terms were appropriate for the MSE001 search engine:

BRAND brand is [REMOVED] and the	n/a
FORMAT ad is called	n/a
PROJECT TITLE "Torture them crusts".	n/a
The VISUALS visuals are about	n/a
VISUALS SUBJECT children not eating their crusts and presenting different ways of torturing them (i.e smashing them into their plates, drowning them in their orange juice). I am looking for music that will	n/a
MUSIC FUNCTION juxtapose against this theme.	n/a

I.E a	
CHART classic	n/a
SIMILAR piece of music like	n/a
ARTIST Pink Floyd –	n/a
SONG TITLE We don't need no education - a track which is about	Yes (Word search – we don't need no education)
SONG SUBJECT rebellion. Potentially this track maybe used just as the	Yes (Topics & Keywords – Rebellion)
INSTRUMENTAL instrumentals or	Yes (Genre – Instrumentals)
VERSION re-scored to perhaps just	n/a
INSTRUMENT piano etc... to give a	n/a
MOOD very charming sound.	n/a
OR - a	
MOOD beautiful	n/a
GENRE nursery rhyme which could be	Yes (Genre – Nursery)
VERSION re-scored to a	n/a
GENRE heavy metal	n/a
INSTRUMENT guitar	n/a
GENRE rock sound	Yes (Genre – Rock)
SIMILAR (like	n/a
TITLE twinkle twinkle little star) - not sure if you have anything like this	Yes (Word Search – twinkle twinkle little star)
VERSION re-written?	n/a
Ideally the track will be	
CHART well-known and the	n/a
BUDGET budget can be stretched.	n/a

Table 23 Brief 001 search engine terms

It can be seen from this table that there are only a few possibilities to match elements of this query to this search engine. The query is reduced by this process to only a few terms:

Word search – we don't need no education (MR)

Topics & Keywords – Rebellion (SR)

Genre – Instrumentals (MR)

Genre – Nursery (MR)

Genre – Rock (MR)

Word Search – twinkle twinkle little star (MR)

This query is also formed by the combination of two separate queries. Firstly the User is asking for 'a classic piece of music like Pink Floyd we don't need no education'. (It should be noted that there is no Pink Floyd song with this title, which is a lyric from

the track ‘Another Brick in the Wall Pt 2’ – this would cause a problem with a ‘title’ search). The second query is for a rock version of a nursery rhyme. Because of these two distinct queries the brief was split into two.

The query was then applied as detailed in the notes below, taken directly from the memos taken during the inputting of the briefs into the search engines:

Part One
Query is
Word search – we don’t need no education
Topics & Keywords – Rebellion
Genre – Instrumentals
210 songs found, highest relevance is 33.33% ie one out of 3 criteria

Revise query to increase relevance
Topics & Keywords – Rebellion
Genre – Instrumentals
210 songs found, highest relevance is 50% ie one out of 2 criteria. In other words, word search did not have any effect.

Revise query to increase relevance
Topics & Keywords – Rebellion
24 songs, all 100%
Top 10
Ain't Ya Coming Home, Babe - Blodwyn Pig 100.00%
Authority Confrontation - Selfish [Expletive deleted] 100.00%
Because We Want To - Billie 100.00%
Burnin' Bridges - Slaughter 100.00%
*C'Est La Vie - B*witched 100.00%*
Date With The Night - Yeah Yeah Yeahs 100.00%
Easy Morning Rebel - My Morning Jacket 100.00%
I'd Love To Change The World - Ten Years After 100.00%
Just Couldn't Tie Me Down - The Black Keys 100.00%
Mao Tse Tung Said - Alabama 3 100.00%

Part two

Query is

Genre – Nursery

Genre – Rock

Word Search – twinkle twinkle little star (exact phrase, title)

595 songs found, top relevance 66.67% (1), remainder 33.33%

Revise query

Genre – Nursery

9 songs

Bananas! – Tweenies 100.00%

Blonde Haired Gal In A Hard Hat - Bob The Builder 100.00%

Do The Lollipop - Tweenies 100.00%

Friend - Stephen Jones 100.00%

Pass Me By - Peggy Lee 100.00%

Puppy Dog Snails - The Eighties Matchbox B-Line Disaster 100.00%

Rawheads And Bloody Bones - Siouxsie & The Banshees 100.00%

The Smurfs Are Coming Home - The Smurfs 100.00%

What Can I Be (Spud's Song) - Bob The Builder 100.00%

The two sets of songs were then combined to make a list of ten songs. It had been decided at the outset that queries should be revised where possible to give a shortlist of around 10 songs but that if this was not possible then the first ten of a longer list would be used in the observations. This would ensure a consistent approach which would present a manageable set of results for the participants in the observations.

After each brief had been applied to each search engine a list was made of the songs generated by this process:

1	Pink Floyd	Yet Another Movie
2	Swing Out Sister	Breakout
3	David Bowie	Changes
4	Avril Lavigne	Don’t Tell Me
5	Sum 41	Fat Lip
6	Delaney and Bonnie	Free The People

7	Jody Miller	Home of the Brave
8	Three Days Grace	I Hate Everything About You
9	Queen	I Want It All
10	Queen	I Want To Break Free

Table 24 MSE002 Brief 001 results

1	Pink Floyd	If
2	Pink Floyd	Stop
3	Pink Floyd	Time
4	Pink Floyd	Vera
5	Pink Floyd	Money
6	Pink Floyd	Sheep
7	Pink Floyd	Mother
8	Pink Floyd	Breathe
9	Pink Floyd	Eclipse
10	Pink Floyd	Hey You

Table 25 MSE006 Brief 001 search results

1	Joe Satriani	Revelation
2	John Powell	A Very Special Reception
3	Bree Sharp	Guttermouth
4	DJ Clue	What The Beat
5	Def Squad	Checkin' Me Out
6	Manic Street Preachers	Pretension / Repulsion
7	Joe Tex	Living In The Last Days
8	A-Ha	You Are The One
9	Doug and Rusty Kershaw	Your Crazy Crazy Heart
10	Joni Mitchell	Raised On Robbery

Table 26 MSE004 Brief 001 search results

1	Loggins and Messina	Your Mama Don't Dance
2	Poison	Your Mama Don't Dance
3	Heart	Kick It Out
4		
5		
6		
7		
8		
9		
10		

Table 27 MSE005 Brief 001 search results

1	Blodwyn Pig	Ain't Ya Comin Home Babe
2	Selfish [Expletive deleted]	Authority Confrontation
3	Billie	Because We Want To
4	Slaughter	Burnin' Bridges
5	B*Witched	C'Est La Vie
6	Tweenies	Bananas!
7	Bob The Builder	Blonde Haired Girl In A Hard Hat

8	Tweenies	Do The Lollipop
9	Stephen Jones	Friend
10	Peggy Lee	Pass Me By

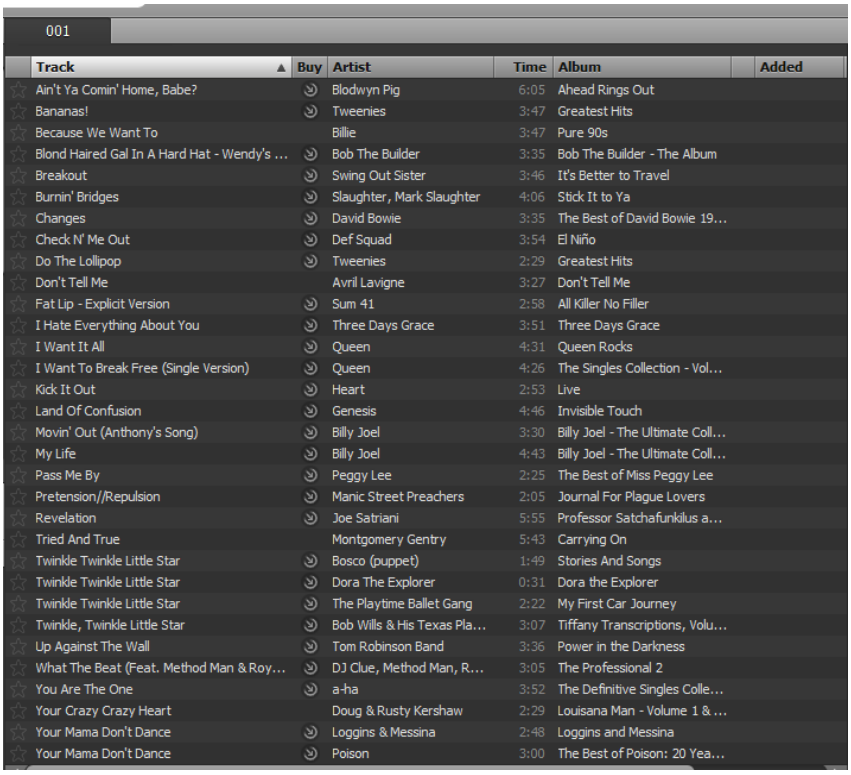
Table 28 MSE001 Brief 001 search results

1	Billy Joel	My Life
2	Tom Robinson Band	Up Against The Wall
3	Montgomery Gentry	Tried and True
4	Genesis	Land of Confusion
5	Billy Joel	Movin' Out (Anthony's Song)
6	Bob Wills	Twinkle Twinkle Little Star
7	Bosco	Twinkle Twinkle Little Star
8	Dora The Explorer	Twinkle Twinkle Little Star
9	The Playtime Ballet Gang	Twinkle Twinkle Little Star
10	Towa Tei ft Mitsuko Koike	Twinkle Twinkle Little Star

Table 29 MSE003 Brief 001 search results

These were then made into Spotify playlists identifiable by the Brief code. Some of the songs did not feature in Spotify at the time of the observations. It was decided that because the aim of the tests was to derive rich and detailed comments, rather than for detailed quantitative analysis, a representative number of tracks would suffice. It was more important to give time to the participants to discuss their thoughts about why and whether or not the music met a brief than to hurry through to comment on a large data set.

The Spotify playlist for Brief 001 is illustrated below in a screenshot:



001

Track	Buy	Artist	Time	Album	Added
Ain't Ya Comin' Home, Babe?		Blodwyn Pig	6:05	Ahead Rings Out	
Bananas!		Tweenies	3:47	Greatest Hits	
Because We Want To		Billie	3:47	Pure 90s	
Blond Haired Gal In A Hard Hat - Wendy's ...		Bob The Builder	3:35	Bob The Builder - The Album	
Breakout		Swing Out Sister	3:46	It's Better to Travel	
Burnin' Bridges		Slaughter, Mark Slaughter	4:06	Stick It to Ya	
Changes		David Bowie	3:35	The Best of David Bowie 19...	
Check N' Me Out		Def Squad	3:54	El Niño	
Do The Lollipop		Tweenies	2:29	Greatest Hits	
Don't Tell Me		Avril Lavigne	3:27	Don't Tell Me	
Fat Lip - Explicit Version		Sum 41	2:58	All Killer No Filler	
I Hate Everything About You		Three Days Grace	3:51	Three Days Grace	
I Want It All		Queen	4:31	Queen Rocks	
I Want To Break Free (Single Version)		Queen	4:26	The Singles Collection - Vol...	
Kick It Out		Heart	2:53	Live	
Land Of Confusion		Genesis	4:46	Invisible Touch	
Movin' Out (Anthony's Song)		Billy Joel	3:30	Billy Joel - The Ultimate Coll...	
My Life		Billy Joel	4:43	Billy Joel - The Ultimate Coll...	
Pass Me By		Peggy Lee	2:25	The Best of Miss Peggy Lee	
Pretension//Repulsion		Manic Street Preachers	2:05	Journal For Plague Lovers	
Revelation		Joe Satriani	5:55	Professor Satchafunkilus a...	
Tried And True		Montgomery Gentry	5:43	Carrying On	
Twinkle Twinkle Little Star		Bosco (puppet)	1:49	Stories And Songs	
Twinkle Twinkle Little Star		Dora The Explorer	0:31	Dora the Explorer	
Twinkle Twinkle Little Star		The Playtime Ballet Gang	2:22	My First Car Journey	
Twinkle, Twinkle Little Star		Bob Wills & His Texas Pla...	3:07	Tiffany Transcriptions, Volu...	
Up Against The Wall		Tom Robinson Band	3:36	Power in the Darkness	
What The Beat (Feat. Method Man & Roy...		DJ Clue, Method Man, R...	3:05	The Professional 2	
You Are The One		a-ha	3:52	The Definitive Singles Colle...	
Your Crazy Crazy Heart		Doug & Rusty Kershaw	2:29	Louisana Man - Volume 1 & ...	
Your Mama Don't Dance		Loggins & Messina	2:48	Loggins and Messina	
Your Mama Don't Dance		Poison	3:00	The Best of Poison: 20 Yea...	

Figure 27 Spotify screenshot Brief 001

The proportion of generated tracks to those found in Spotify were then mapped on a spreadsheet in order to find the playlists that most closely represented the briefs. Those playlists with a higher proportion were then prioritised for the observations.

Brief code	Results	Spotify	%
009	**49**	**41**	**84**
012	**60**	**49**	**82**
026	**47**	**36**	**77**
018	**60**	**45**	**75**
003	**44**	**32**	**73**
019	**51**	**36**	**71**
024	60	42	70
016	59	39	66
023	51	33	65
017	60	38	63
022	55	34	62
001	53	32	60
004	**58**	**32**	**55**
020	60	33	55
025	44	24	55
007	49	26	53
011	44	21	48

010	60	24	40
027	0	0	00

Table 30 Spotify results/playlist ratios

The top six briefs (marked in bold in the table) were chosen for the observations, along with an outlier (004) for comparison. A selection of people who had previously been interviewed or had supplied examples of briefs were approached with a request for their time. Seven people agreed to take part. The briefs were then allocated to the seven participants, who were coded for anonymisation (024SPOT – 030SPOT). If the participant had supplied a brief they were not given that brief for the observation. A selection of 4 briefs was brought to each observation session. They were asked if they had seen the first brief. If they had, the next was chosen, until a brief was reached that was new to the participant:

024SPOT	Brief 009
025SPOT	Brief 003
026SPOT	Brief 004
027SPOT	Brief 018
028SPOT	Brief 019
029SPOT	Brief 012
030SPOT	Brief 026

Table 31 Spotify observations - briefs

The participants were then asked to read the brief, listen to the tracks associated with the brief, and comment on whether they met the brief. The judgements are analysed and discussed in Chapter 7.

iii. **Relevant / not relevant**

Once the judgements had been transcribed and analysed they were examined for detail on which tracks had been considered to be Relevant (R), Not Relevant (NR) or undecided (U). it was anticipated that this would reveal patterns within and between the search engines relating to their precision and recall. The R/NR/U decisions were interpreted by the researcher from the participants' comments. They were not asked specifically for a 'relevance judgment'. Rather they were asked to comment on whether or not the tracks matched the brief. The reason for this was that it was felt that 'relevance' more would come more easily – and perhaps more 'realistically' - from the participants' talk itself than from forcing them into making a binary relevance decision. Indeed many of them commented freely on whether they would include a track in a list

they may submit to a client, and these comments were used as a basis for the R/NR/U decisions as they reflected the real world issues of the participants, rather than the artificial world of the 'would you/wouldn't you' question.

The R/NR/U decisions for 024SPOT, Brief 009 are presented in Table 32 below:

ARTIST	TITLE	R/NR/U	MSE
Jackson 5	Blame it on the Boogie	NR	MSE001
Brendan Benson	Eventually	NR	MSE001
Al Jarreau	L Is For Lover	NR	MSE001
Brendan Benson	Life in the D	NR	MSE001
Alabama 3	Ain't Goin To Goa	R	MSE001
Jethro Tull	Bouree	R	MSE001
Sgt Rock	Dada Struttin	R	MSE001
Athlete	El Salvador	R	MSE001
Dandy Warhols	Get Off	R	MSE001
Brendan Benson	Good to me	R	MSE001
Mariah Carey	Always Be My Baby	NR	MSE002
Phil Collins	Another Day In Paradise	NR	MSE002
Aswad	Best of my Love	NR	MSE002
Swing Out Sister	Break Out	NR	MSE002
Puff Daddy	Journey through the life	NR	MSE002
Enya	Long Long Journey	R	MSE002
The Police	Secret Journey	R	MSE002
The Byrds	The Ballad of Easy Rider	R	MSE002
John Denver	Back Home Again	NR	MSE003
Hot Tuna	Easy Now	NR	MSE003
M People	Fantasy Island	NR	MSE003
Swervedriver	For Seeking Heat	NR	MSE003
Beach Boys	Kokomo	NR	MSE003
John Denver	Rocky Mountain High	NR	MSE003
Tom Petty	Runnin' Down a Dream	NR	MSE003
La Bouche	Sweet Dreams	NR	MSE003
Faith Hill	Wish For You	NR	MSE003
Tony Bennett	Wrap Your Troubles in Dreams	NR	MSE003
Asa	360	NR	MSE004
Asa	Awe	NR	MSE004
Joe Jackson	Invisible Man	NR	MSE004
Manic Street Preachers	Journal for Plague Lovers	NR	MSE004
The Shell	Journeys of a thousand miles	NR	MSE004
Asa	No One Knows	NR	MSE004
Asa	Peace	NR	MSE004
Asa	So Beautiful	NR	MSE004
Neyo	Because of You	NR	MSE005
Mobile	Montreal Calling	NR	MSE005

Busta Rhymes	Touch It	NR	MSE005
Il Divo	All By Myself	R	MSE005

Table 32 Relevance / Non-relevance - 024SPOT, Brief 009

When presented to the participants the data was re-ordered alphabetically by song title to remove ordering by Music Owner with the objective of removing possible bias on the part of the listener. Data from all of the observations was summarised in this way, allowing quantitative analysis of the results. The observations results are presented below:

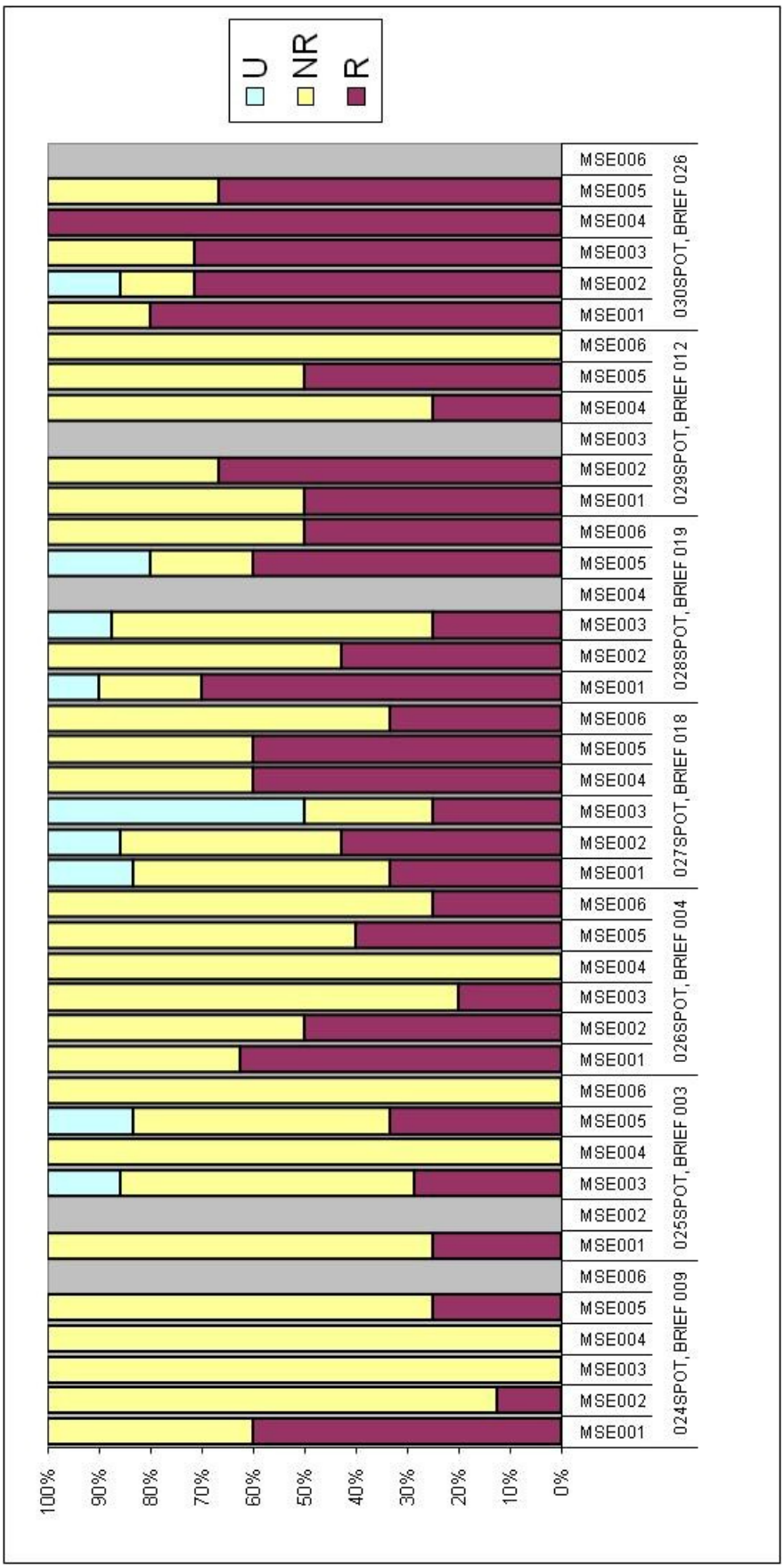


Figure 28 Relevance / non-relevance - all search engines, all briefs

It can be seen from these representations that there appears to be some variation

between participants in their relevance decisions, namely that one participant in particular (030SPOT) agrees with the playlist more than the others. Although it is possible that some participants skewed their results in order to satisfy the researcher, it is equally possible some skewed them in order to 'prove the search engines wrong'. This difference, therefore, is accepted on face value. Indeed, it is likely that this participant always acts in this way and presents a wider choice of what s/he feels matches a brief than, say 024SPOT, whose observation text reads in a more cynical fashion, repeatedly affirming that although the search engine may have presented a result, and although this result may match the brief, he would not put that track forward because it is not to his taste, or for other contextual reasons. The contextual impact was certainly considered by a number of participants and is discussed in the text analysis in Chapter 4.

Personal taste notwithstanding, the user-evaluated R/NR/U results were considered in relation to all of the briefs, and for all of the search engines:

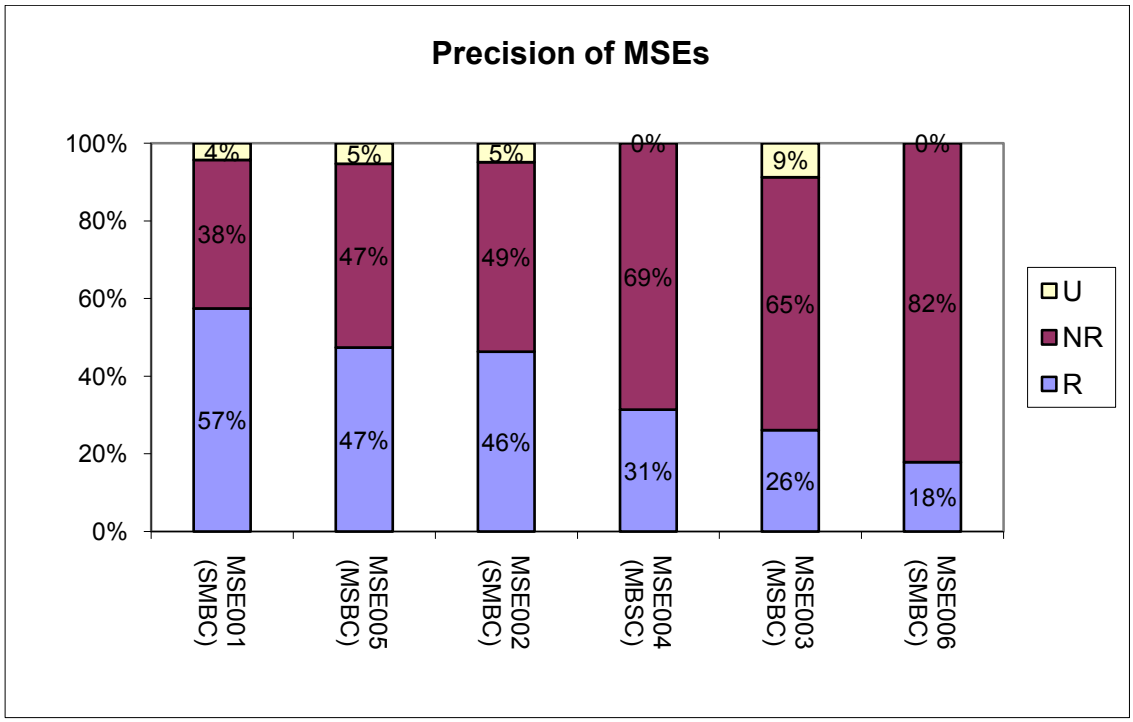


Figure 30 Precision of MSEs

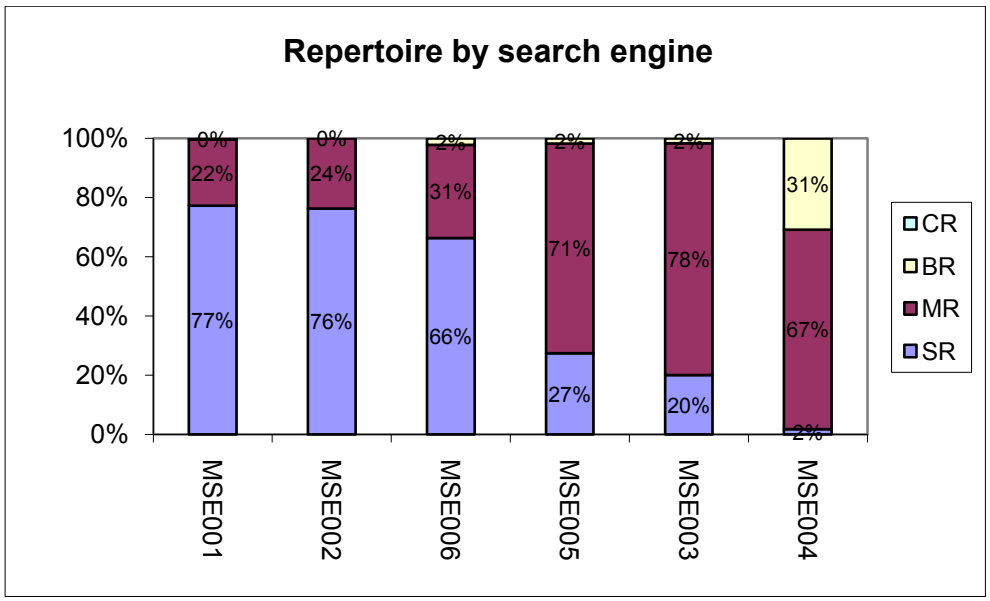


Figure 31 Repertoire by search engine

Based on these figures, we can calculate the Precision of each search engine. This is substantiated by the individual evaluations (Figure 29) where it also appears that MSE001 is consistently a high-scorer in these tests. The ranking of search engine by repertoire can therefore be compared to the ranking of search engine by precision (Figure 30). It can be seen that there appears to be a trend of decreasing Precision according to decreasing use of SR, although the results for MSE006 do not support this.

Although it may be expected that MSE001, with its emphasis on SR, would offer more relevant results sets, so MSE002 and MSE006 should also present more relevant results than the MR emphasis search engines (MSE004, MSE003, MSE005). This is not the case, particularly as MSE005's precision measures 0.47 while it features more MR and SR, and MSE006 have only a 0.18 precision measure, with higher SR than MR.

iv. **The reduction of complex queries into key terms**

Upon re-examination of the MSE006 evaluation memos it was found that there was a consistent problem when generating the results sets during the tests of the briefs against the search engine caused by the difficulty in constructing complex queries. The 'Subject' query box consistently generated a blank results page during the period of the tests. Queries therefore had to be constructed without this offering, sometimes forcing 'subjects' into 'lyrics' boxes in order to generate any results at all. It is likely that this approach would have distorted the results offered by this search engine. This brings to

light a consistent problem facing the creative music user, magnified by the approach taken in these tests where the researcher did not make an attempt to interpret the query further if terms did not match those of the interface.

Referring again to Brief 009:

> *9. We are looking for a cool, fun, jaunty and upbeat track with a happy vibe and a certain feel good factor - it shouldn't take itself too seriously. Ideally it should be from a new and up-and-coming artist; [client] would like to be associated with a fresh new sound, and not with something old or dated. The music should guide us through the story and mirror the positive journey the main character is taking. He is in his own little world of fun, which contrasts with the busy urban surroundings. The music should be positive, easy going and make the listener smile.*
>
> *Although the overall tempo of the song should be upbeat to reflect the gliding motion of the journey, the pace should be varied, and the track should have some quieter moments and enough space to accommodate sound effects – the character will be going down the slide at different speeds at different points, occasionally slowing down or even stopping. Please avoid anything too folky or dreamy.*
>
> *Any lyrics should relate loosely to the story of the ad, which conveys a positive journey. Please avoid any songs with specific lyrics, e.g. to do with driving a car.*

The complex ideas encoded in this query were forced by some of the search engines to be reduced to very simple concepts. When Users encode their ideas into a query which is designed to represent their information need in a way to inform Owners they are already suffering from the problems of translating musical and film-making ideas into language. If they do not have high musical competences they are likely to use either lay terms (CR) or film terms (SR) in expressing these ideas in written form. The written brief, therefore, is a compromise forced onto the User by their codes and competences and the vocabulary and language used will be informed by their ideas about the end result and how to achieve this in a filmic fashion as much as by their

expertise in talking about music. In deriving the lists of tracks for the observations the process where the Owner decodes the brief takes place at the moment it is matched to the vocabulary of the search engine. If the language in the brief matches the language in the user interface then this decoding process is relatively simple. If it does not match, then an interpretation has to be made, further compromising the message within the brief and possibly moving its meaning away from the original intention of the User. During the application of the briefs to the search engines the process was memoed. These memos show how frequently the terms applicable to the search engines had to be removed and revised, within the concepts carried in the original texts, to generate manageable sets of results to put forward to the participants. An example of one set of queries is shown below. This illustrates how the original lengthy textual query (Brief 009) was reduced by the act of inputting it into each of the six search engines to almost meaningless criteria generating large (2000+) lists of songs.

The brief applied to MSE001 was:

Styles & Moods – upbeat, happy
Date Range - 2009
Topics & Keywords journey
Topics & Keywords roads, cities
Genres all except folk
Styles & Moods dreamy not clicked
Word Search exact phrase 'positive journey'
Topics & Keywords car not clicked

This gave 3024 results ranked by 'relevancy'. The top 'relevancy' in the list was 8.54%.

The brief applied to MSE002 was:

Hit from 2005-2009
Mood – Upbeat
Mood – Happy
Genre, select all, deselect Folk

27 matches were offered, the top ten being chosen for the observations.

The brief applied to MSE003 was

Feelings – General Happiness
Year of release 2009
Activities – Travelling
Activities – Dreaming
Genres – click on all except Folk
Lyrics box – 'positive journey'

This gave no matches. The query was then revised until a manageable set of results were generated:

Feelings – General Happiness
Year of release 2005-2009
Activities – Travelling
Activities – Dreaming
Genres – click on all except Folk

This gave 27 matches, the top ten being chosen for the observations.

The brief applied to MSE004 was:

Release year 2009-2009
Genre, select all, deselect Folk
Keywords 'positive journey'

This gave no matches. The query was revised to read:

Release year 2008-2009
Genre, select all, deselect Folk
Keywords 'journey'

This gave 17 matches ordered by artist. The top ten were used for the observations.

The initial brief applied to MSE005 was:

Mood group – Happy/Fun

Mood – Feelgood
Year - 2009
Mood group – positive/uplifting
Genre – select all, deselect Folk
Lyrics – positive journey

However this gave no results. Various revisions were attempted, still offering no results, until the query was revised to read:

Mood group – Happy/Fun
Mood – Feelgood
Mood group – positive/uplifting
Genre – select all, deselect Folk

This gave 2767 songs, which were ordered by date, newest first. The top 10 were chosen.

The brief applied to MSE006 was:

Year: 2009
Subject: Travel
Tempo: Multiple tempos

0 matches were offered. This has been discussed above.

Although reducing a lengthy query to a small number of categories may highlight some key factors, these factors may not be as important to the searcher as to the owner. It is only through listening to the material, which may be the first ten of an un-ordered list and not ranked in any way, that the User may determine which tracks will be relevant to their query. In fact each query may even be reduced to its ultimate meaning to the Owner:

MSE001: *an upbeat, happy song from 2009 about positive journey, roads, cities, not cars, not folk music*.

MSE002: *an upbeat, happy song from 2005-2009, not folk music*

MSE003: *a generally happy song from 2009 about travelling or dreaming and a positive journey, not folk music.*

MSE004: *a song about a journey from 2008-2009, not folk music.*
MSE005*: a happy/fun, feelgood, positive/uplifting song, not folk music*.
MSE006: *a song about travel with multiple tempos from 2009.*

This reveals the essential nature of the query as decoded by the Owner. It is not surprising, therefore, that so many interviewees talked about how there are more than one pieces of music that may satisfy a brief and work to a picture. If all queries are reduced to three or four concepts – subject, mood, date, genre – then it is inevitable that many results from catalogues approaching 3 million items will be considered as being suitable. It is likely that allowing a more detailed application of a brief or query to a catalogue will generate more relevant results than those generated by these tests.

v. Limitations

These tests and evaluations were partially restricted in their scope by some practical and methodological constraints. Firstly, although the issue has been raised above of the possibility of evaluator inconsistency in their relevance judgements, this was not investigated. This could have been done by presenting two judges with the same brief and set of results for their comments. Because of the small number of judges and short amount of time available, and because what was being sought were rich and detailed comments on a range of queries and results, this consistency check was not performed.

The second issue is the choice and non-use of outlier brief (004) (Table 30). This brief was chosen for the tests because it was felt at the time of the choosing that it may be appropriate to investigate whether there was a significant difference in the judgments relating to this brief. Although the brief and its associated results were evaluated (Figure 28) by participant 026SPOT no specific comparison has been made between these results and those of other briefs.

This omission relates to the third limitation of these evaluations, which is that a choice was made to limit the quantitative analysis simply to precision calculations and not to attempt a significance analysis of the hypothesized relation between repertoires and precision (Figure 30, Figure 31). The reason for this is that it was felt the quantitative data generated by counting the number of instances of each repertoire was

not suitably robust for in-depth analysis, and that this meant that any results would not be sufficiently reliable. This was compounded by the problem caused by lack of performance of MSE006.

vi. **Summary**

This chapter has presented a detailed methodology for relevance tests on six commercial music search engines. The problems of applying lengthy written queries to controlled vocabulary interfaces has been clearly shown by the way in which the queries are distilled to three or four general concepts generating sets of results which can be extremely large but unranked and therefore difficult for users to evaluate. The encoding / decoding of queries has been discussed, showing how this process is highly reductive and likely to reduce the ability of the query to carry the Users' meanings to the Owner. This may explain why the precision scores of the search engines proved to be generally rather low, mainly being below 0.5.

vii. **Next steps**

The findings of the various analyses of the texts, repertoires and search engine evaluations were then synthesised and applied to the model.

13. REPERTOIRES AND THE MODEL

i. Introduction

It has been shown how the four interpretive repertoires arise in talk about music and talk about communication, and how the emphasis on a repertoire will vary according to where the stakeholder stands in the communication process. In their music talk, the Users tend to emphasise MR and SR, while Owners emphasise MR and BR, while in their communication talk the emphasis is less on MR, each stakeholder concentrating on their own repertoire. Written texts produced by the stakeholders also include the repertoires – the search engines emphasise SR or MR, and BR (CR does not appear), while the briefs emphasise SR, CR and MR, with some mention of BR.

Although analysis of the relevance judgements results indicates the possibility of a link between the repertoire emphases in a search engine and the precision of that search engine, this is inconclusive, most probably due to the incompatibility of the qualitative insights of discourse analysis with the simplistic quantitative word-counting exercise undertaken. However this methodological culture clash did agree that the MSE001 search engine, which had the strongest emphasis on SR, had the highest P rating, closely followed by MSE002 (also high on SR). MSE005, on the other hand, with their high MR, slightly exceeded MSE002's P score. MSE004 and MSE003 achieved less than .33 and MSE006's results are best left ignored owing to technical difficulties with their site which meant that only 28 results were judged compared to MSE001's 47 results.

ii. The repertoires and the model

The repertoires seem to have an impact on the encoding / decoding process. The Users encode their request in the form of a brief, which emphasises SR. The Owners websites are used to decode the brief emphasising either SR or MR. The decoded brief is much reduced from its original lengthy and detailed description into three or four basic concepts, and, depending on whether or not the vocabulary in the Owners' SR matches the Users' SR, either returns a null set or, frequently, a large and unranked set. This set, encoded as 'these are the songs we have that match your query' is then

presented to the User who listens and interprets (or decodes) the list according to the original query but also according to external contextual criteria that have previously been left unstated, such as the likelihood of a particular artist agreeing to the use of their music in a soap powder commercial (BR), whether or not the track appeals to the User (CR), musical elements such as tempo or production (MR) and whether the track suits the product (SR).

The cycle of meaning, from User's original lengthy textual query, to Owner's decoded textual distillation, and then as the Owner's musically encoded response to the User's decoding of the music into an idea of whether the music (both musical content and contextual elements) will either match the brief or, more importantly, work with the piece of film is therefore continually informed by all four of the interpretive repertoires at varying levels of emphasis during the cycle.

This cycle is represented in the model. The model presented in Figure 32 is a revised version of that initially proposed. The analysis leading up to this point has shown that the four repertoires are present throughout, influencing all stages of the encoding and decoding process at varying levels of emphasis. Each repertoire can be described as a code or a competence and is therefore linked to each instant of encoding and decoding. The competences (ways of thinking about the world) are BR and CR. They do not appear to intersect but sit side-by-side and are used concurrently to describe conflicting ideologies. Similarly, the codes (ways of thinking about music) of MR and SR also do not intersect but sit alongside one another. All four codes intertwine at varying levels, contributing towards the participants' ways of interpreting and communicating musical meaning.

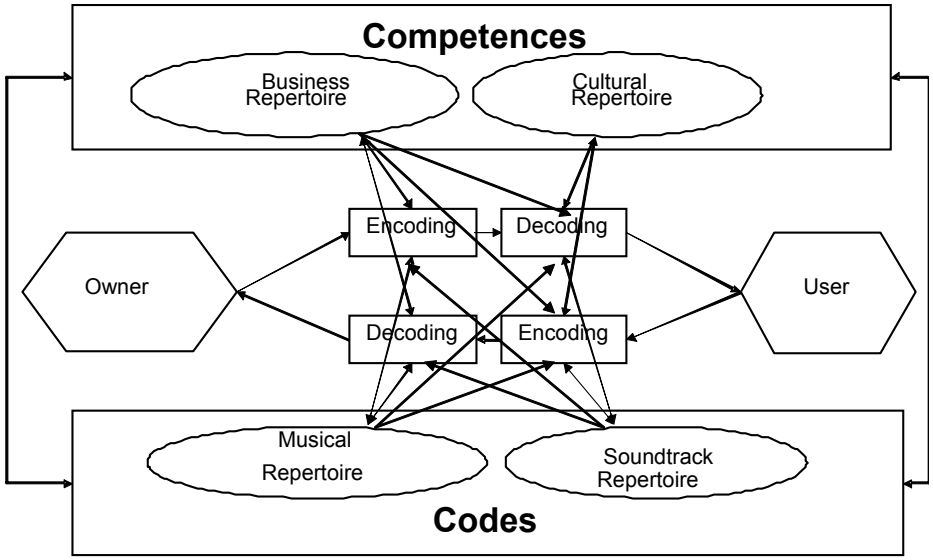


Figure 32 Final revised communications model

iii. **From brief to tune – the cycle of musical meaning**

It may be helpful to illustrate this process using a real life example, Brief 019 read:

19. Music Brief

[PRODUCT (car) REMOVED] Seek And You Will Find

We're after something a bit quirky, different and fresh. We're essentially taking a walk through a shopping centre (albeit a very stylish one), so we want to avoid anything that could be seen as muzak in any way, and we want to avoid anything that makes it feel like a middle class day out at the shops. The slickness of the design and the ad needs to be offset a bit by the music... it shouldn't feel too mainstream… the audience are supposed to be young and self assured.

Music which rides the line between being accessible, but also like nothing you've heard before. Music which has a fun element to it but is not bog standard rock, electro, dance music… it's pop but with an amazing sensibility.

The spot has a good pace to it and is designed to be ordered chaos. We will be looking to mix the music with some atmospheric elements and will be manipulating the sound to a degree as we move from space to space. So this should be taken into account with any music we choose.

This brief has encoded the User request in a detailed manner using a range of SR mood descriptors (eg *quirky, different, fresh, accessible, fun, amazing sensibility*) and function descriptors (‘*the slickness of the design and the ad needs to be offset a bit by the music’, ‘manipulating the sound to a degree as we move from space to space’*) and MR (*mainstream, rock, electro, dance, pop, pace*). This brief was sent to a number of independent music searchers and intermediaries at rights holders who would have performed searches based on their decoding of the query.

When this brief was inputted into the six search engines it was distilled by the researcher into the queries below. This decoding was guided by the functionality and vocabulary options presented by the search engines. The distillation of the query, the search engines interpretation of the query reduces the lengthy and intricate text reproduced above into key features – subject, style, genre, mood. The more detailed query of the six (MSE001) decodes Brief 019 as ‘*seek, quirky, shopping, fun pop*’ while the others offer such summaries as ‘*quirky, pop*’ or ‘*seek, shopping, pop*’:

MSE001:

> *word search, seek – title, lyric, description, any, Styles and moods – quirky, word search, shopping – title, lyric, description, any, topics and keywords – fun, genre – pop*

MSE002:

> *genre, pop (not genre, muzak, rock, electro, dance), lyric theme shopping*

MSE003:

> *Keywords / track / lyric – seek, Keywords / track / lyric – shopping, Genre pop*

MSE004:

> *keyword – seek, keyword – shopping, genre – pop*

MSE005:

Genre – pop, Mood group – quirky

MSE006:

Lyric – seek, shopping, Song title – seek, shopping, Genre – pop

It can be seen how the decoding aspect of the process when using a search engine loses most or all of the SR aspect of the initial brief, a forces the query into becoming an MR text of genre and lyrics / title.

The songs presented to the user by each search engine can be found in Appendix vi with relating query and comments from the participant. These comments illustrate the decoding process by the User of the musical material. They are discussing whether the tracks match the brief by referring to key concepts within the brief and matching them with their interpretations of the meaning of the song but also frequently bring in criteria that are contextual or content-based but have not been stated in the brief. These additional criteria may be based on previous experience and inform the decoding process. Their discussion of a piece helps to define the relevance by a combination of these ideas. They quote keywords from the brief as well as keywords mistakenly assumed to be in the brief, and use criteria not in the brief and others contrary to the brief in their comments and relevance judgements. This decoding primarily draws from their SR and MR but also from CR and BR.

The encoding / decoding process, therefore, is substantially informed by the four repertoires on both sides of the model. However, as all repertoires, except for CR, have an influence on the process throughout, the model needs to be revised to reflect this, as illustrated above.

14. SUMMARY AND CONCLUSION

This work has investigated the information and communications practices and behaviour of a small community of creative professionals who search for and use music to accompany moving images. A review of the literature examined the ways in which music has been organized, suggesting that traditional bibliographic facets may be insufficient in successfully organizing digital popular music. Despite extensive work by musicologists, semioticians and other theorists attempting to determine the meaning of music there is no agreed universal theory of musical communication. This lack of consensus has led to difficulties in developing tools and systems in music information retrieval. In the belief that clarifying the meaning making element of the search process, a tentative reflexive communications model was proposed. This provided a framework for the investigation and satisfies Objectives 1 and 2.

Although it was originally planned (Objective 3) to investigate meaning making within the music industry it quickly became clear that this was too ambitious a task. The research was subsequently focused on one specific area of search, for music to accompany moving images. Data was collected from a sample of 23 face-to-face interviews with record company and music publishing executives (Music Owners) and film, computer game and advertisement creatives (Music Users) and from 7 relevance judgment observations by experts in the field of music synchronisation. The metadata from 6 search engines used by multinational Music Owners (Objective 5) and the texts of 19 lengthy written queries for national and international advertising campaigns were also analysed (Objective 3 & 5). A bricolage of methods were used for the analysis. Interviews were initially analysed for their content, and coded according to themes that arose out of a close reading of the texts. This offered an insight into the process itself and the ways of thinking about key themes amongst the participants (Objective 3). The metadata and the queries were also analysed for their content to determine which facets were being used most widely as access points and as queries (Objective 3 & 5). The relevance judgment observations were considered within the paradigm of established text retrieval theory and it was shown that relevance judgement categories in music appear to relate strongly to earlier findings in those relating to text, despite the many differences between music and text in their actual content, although the concept of

'mood' is of greater importance in musical meaning than in that of text, matching text's 'subject' (Objectives 4 & 5).

All of the texts were then closely examined taking a discourse analytic approach. It was felt that this would reveal insights that had been left undiscovered by the content analysis and that there was more to musical meaning in this context than bibliographic and descriptive facets. Indeed, the use of music as part of a new creative offering, the film, the commercial or the computer game, was often spoken about as being decided by more than these facets. Because of this indication it was felt that a new approach to text analysis would be relevant (Objective 6).

Although discourse analysis has been used in social psychology, historical and some LIS research it has rarely been applied to MIR work, which focuses more on either computer scientific technology development or occasionally on user studies which are based on content analysis and grounded theory. However it is an important method for investigating 'ways of thinking' about a topic and, despite the lack of a specific methodological 'cook book' approach, is respected in the field of qualitative research. Discovering the discourses or 'ways of thinking' about music related closely to the ideas of Codes and Competences within the proposed model, which had been derived from the work of semioticians of popular music (Objective 6).

The interview texts were coded for 'talk about music' and 'talk about communication'. This related the codings to the Codes and Competences and the encoding/decoding elements of the model respectively. Close readings of these coded sections supported the idea that there were inter-twined repertoires within the texts which illustrated the participants used conflicting ideologies when talking about music and their meaning and communication processes. It is central to the discovery of interpretive repertoires that they are used irrespective of interests and are identifiable by their contradictory nature. Four repertoires arose, which were named Musical Repertoire, Soundtrack Repertoire, Business Repertoire and Cultural Repertoire (Objectives 3 & 6).

In MR, music is an asset which is created, and has identifiable characteristics. Keywords in MR texts include the 'traditional' musical facets such as artist, song title, writer, year, album title, chart position, genre, keyword, tempo, lyrics, mood, subject,

vocal mix / instrumental. These facets are widely used when organizing music in shops, libraries, and are comprehensively included in metadata tags in digital documents such as MP3 files. Elements of the Musical Repertoire are well-used as a framework for organizing physical and digital collections alike, and it was unsurprising that this repertoire was found throughout the interview and other texts. It was found at varying levels of competence ranging from expert to simple but this was not specific to either Music Owners or Music Users.

In the Soundtrack Repertoire, on the other hand, music is a mood enhancing ingredient inextricably linked to the User's message being conveyed by moving image to viewer / listener. Keywords in SR texts include abstract adjectives such as effervescent, uplifting, recessive, build, quirky, unexpected, familiar, and ideas and terminology specific to the use of music within a film, such as theme, background, match the music to the picture. The specific artist or song is not so important to this more specialized repertoire, which reflects the Music Users ideology. They are, after all, searching for a piece of music to enhance the film, their central concern. However it has been shown that they do also employ MR in their queries.

The Business Repertoire supports the idea that music is a large collection of recordings which are marketable, contractual and negotiable and have monetary value to the Music Owner. It is identifiable by marketing terms specific to business talk such as brand new, cool, big catalogue, comprehensive, demographic, one stop, originating territory, physical and appearances of this repertoire are often sign-posted by metaphors relating to physical labour, such as "work with it", "at the coalface", "splattering", "wall-to-wall", "throw music up against it", "dig it out", "churn up a ton of songs", "trawl through a catalogue". Again, as it is derived from a business ideology it appears more frequently in the talk of Music Owners but it appears throughout the texts with varying emphasis.

Finally, the Cultural Repertoire defines music as a subjective, appealing distraction which is personal and emotive. Everyone interviewed in the investigation expressed a personal interest in music and may discussed the problems of subjectivity when choosing music on behalf of others. The CR represents this subjective aspect, which causes problems in categorization owing to multiple meanings and variable tastes.

It is through a combination of these four repertoires that not only the participants in this investigation (in the interviews and observations) but also the wider community (through the analysis of the search engines and written briefs) establish the meaning of music for their purposes. It was shown how the repertoires consistently vary in emphasis between Music Owners (drawing from mainly MR and BR) and Music Users (MR, SR). These emphases cause problems in communication between the stakeholders and are magnified by the 'official' texts of the search engines and the briefs (Objective 5).

Applying briefs to the search engines allowed a comparison between the repertoire emphases and the precision of the search engines which, although not conclusive, indicated that it is possible that the more a search engine emphasises SR, the more it is judged to give relevant results. (Objective 5).

These findings were applied to the model, which was revised to reflect the evidence offered by the analyses. These revisions were to incorporate the repertoires into the Codes and Competences but not overlap them, and to link the repertoires more comprehensively to the encoding and decoding process (Figure 31). Finally an final example applied a brief to the 'cycle of meaning' as described by the model for the purposes of clarification (Objective 6 & 7).

During the course of this investigation the participants have frequently asked two questions:

> *"How can we make better search engines?"* and *"Is this research going to put me out of a job?"*

Although the detail within any answer to the first of these questions would vary according to the business and marketing strategies of anyone building a search engine for the purposes of synchronisation there is an over-arching and simplistic answer. Incorporating the discourses of the Music User into the design of the search engine is likely to improve its ability to generate relevant results sets. This not only means that the User should be allowed to frame a query using their preferred repertoire emphases but also that the material accessed by the query mechanism should be organized in this way. It means that music should not only be organized by 'artist, title, instrument',

'territory, budget' but also by 'upbeat and quirky, with a bit of a build' and whether the User and the ultimate viewer/listener responds in the intended way to the music in the results sets. Music needs to be organized by content and by context if it is to be successfully accessed by MIR systems designed for this purpose. Much of the MR and BR information required can be accessed from other sources within rights holders organizations, while a detailed domain analysis based on User behaviour and musical choices would derive valuable information for SR and CR categorization (Objective 7).

In terms of the second question, it is unlikely that this research will put any of the participants or their peers out of a job. While an 'ideal' search engine may ease the process of searching rapidly through extremely large catalogues the importance of the fragile relationships between the multiple stakeholders on both sides and the creative basis of the work of synchronizing music and film suggests that without human involvement there will be no process. The day when it is possible to input a piece of film into a system as a query and that system outputting a 'perfect synch' is unlikely to reach us any time soon.

With regard to the three initial aims of the research, throughout this thesis theoretical and practical issues from the disciplines of IR and MIR have been used to derive insights into these music industry professionals' information needs. A model has been developed and tested in order to reflect the communications process leading to meaning making, and insight has been offered into how incorporating the four repertoires may improve this process somewhat.

In terms of contributions to knowledge this work has developed and tested a model describing the communications processes of creative music search, identified and analysed information needs within this process, and made links between the relevance judgements relating to music search and of search for text-based items. Four interpretive repertoires have been identified, offering insight into the communications process and allowing for testing of the model, and it has been suggested that the relative emphasis of these repertoires by Users and Owners may be applied to systems evaluation.

15. APPENDICES

i. Tagg's (1999) checklist

General aspects of communication

1. Who is transmitter and who is receiver?

2. What is the physical nature of the channel and where does reception of the music take place?

3. What social relationship exists between transmitter(s) and receiver(s) of a particular piece of music (a) in general (b) at the particular occasion of musical communication?

4. What interest and motivation do(es) the receiver(s) have in listening to or otherwise using the music and what interest and motivation do(es) the transmitter(s) have in creating and transmitting the music?

5. Is it one- or two-way communication? (Munication or communication?)

6. What technical or sociocultural aspects of coding practice influence the transmitter(s) in constructing the musical message?

7. What interference (technical, cultural) is the intended message subject to in its passage in the channel? Do transmitter(s) and receiver(s) have the same store of symbols and the same sociocultural norms/motivations? What bits of the music (and its 'message') do(es) the receiver(s) hear, use, respond to?

8. What is/are the intended and actual situation(s) of musical communication for the music both as a piece and as part of a genre (e.g. dance, home, work, ritual, concert, meeting, film).

9. What is the attitude of transmitter(s) and receiver(s) in the situation of musical communication (e.g. attitude of artist or composer to audience, audience's listening levels, attitudes, activities, behaviour).

10. How is the formation of musical structures affected by 1-9, above?

Simultaneous paramusical forms of cultural expression

1. Paramusical sound, e.g. church bells, background chatter, rattling crockery,

applause, engine hum, birdsong, sound effects.

2. Oral language, e.g. monologue, dialogue, commentary, voice-over, lyrics, etc.

3. Written language, e.g. programme or liner notes, advertising material, title credits, subtitles, written devices on stage, expression marks and other performance instructions.

4. Graphics, e.g. typeface, design, layout (cf. 3), computer graphics (TV), etc.

5. Visuals, e.g. photos, moving picture, type of action, scenario, props, lighting, camera angle and distance, cutting speed and techniques, superimpositions, fades, zooms, pans, gestures, facial expressions, clothing.

6. Movement, e.g. dance, walk, run, drive, fall, lie, sit, stand, jump, rise, dive, swerve, sway, slide, glide, hit, stroke, kick, stumble.

7. Venue, e.g. (type of) home, (type of) concert, disco, football match, in front of TV, cinema, church.

8. Paralinguistics, e.g. vocal type, timbre and intonation of people talking, type and speed of conversation/dialogue, accent/dialect.

9. Acoustics, i.e. acoustic properties of the place of performance, type and quality of technical equipment, amount and type of reverb, extraneous noise.

10. The relationship between points 1-9 and the music.

Parameters of musical expression

1. Instrumentational parameters

1.1. Number and type (s) of instruments and/or voices.

1.2. Timbre of instrument and/or voices, e.g. range and ambitus (see 3, below), attack,

envelope, decay, sound spectrum.

1.3. Mechanical devices, e.g. mute, sostenuto pedal, stops, drawbars, plectrum, string

types, reed types, mouthpieces, bows, mallets, sticks, brushes.

1.4. Electroacoustic devices, e.g. microphone types & techniques, loudspeakers, echo,

reverb, delay, panning, filtering, PA systems, mixers, amplifiers, equalizers, phasers,

flangers, chorus, compression, distortion, vocoding, dubs.

1.5. Performance techniques, e.g. vibrato, tremolo, tremolando, glissando, portamento, col

legno, pizzicato, sul ponte, picking, laisser vibrer, strum,

1.6. Phrasing idioms and idiosyncrasies, e.g. attack, legato, staccato.

2. Compositional technique

2.1. Monophonic « polyphonic.

2.2. Monorhythmic « polyrhythmic.

2.3. Homophonic, heterophonic, contrapuntal.

2.4. Melody-accompaniment or other.

2.5. Overall texture, e.g. thick, thin, busy, sparse.

3. Temporal parameters

3.1. Duration of piece and relationship of this duration to other connected aspects of communication

(e.g. film, church service, sports event, dancing).

3.2. Duration of sections within the piece and their interrelation.

3.3. Order and treatment of thematic events, e.g. starts, ends, continuations, interruptions,

recurrences (reiterations, repeats, recaps), sequences, inversions, retrogrades, augmentations,

diminutions.

3.4. Pulse, tempo, incl. base rate, surface rate.

3.5. Rhythmic texture, e.g. polyrhythm, birhythm, monorhythm.

3.6. Metre (rhythmic grouping of pulse, time signature, etc.), e.g. simple, compound, symmetric,

asymmetric.

3.7. Accentuation, e.g. onbeat, offbeat, downbeat, upbeat, syncopation, agogics, syllabics,

melismatics.

3.8. Periodicity and phrase length, e.g. long, short, regular, irregular.

4. Tonal parameters

4.1. Tuning system and tonal vocabulary, incl. retuning, detuning, etc.

4.2. Overall and mean pitch range (all parts).

4.3. Pitch range (ambitus) and mean pitch for individual instruments/voices.

4.4. Motivic parameters (incl. melody and bass).

4.4.1. Ambitus, compass.

4.4.2. Contour (e.g. ascending, descending, terraced).

4.4.3. Tonal vocabulary (i.e. scale, mode, etc.).

4.5. Harmonic parameters.

4.5.1. Tonal centre (if any).

4.5.2. Type of tonality (if any), e.g. modal, diatonic, quartal, drone, bebop, impressionist,late romantic, twelve-tone, etc. Also alterations, inversions, suspensions,resolutions, etc.

4.5.3. Harmonic change as long and short term phenomenon, incl. harmonic

rhythm (see 3.8) and thematic order (see 3.3).

5. Dynamics parameters

5.1. Loud « soft.

5.2. Sudden « gradual.

5.3. Constant « variable.

ii. Ethics documentation

a. Letter Of Invitation

Dear xxxxxxxx

I have been given your name by xxxxxxx who recommended I contact you.

I worked in artist management and music PR for a number of years, and recently switched to academia where I have been studying information management. I am now doing a PhD which investigates how people in the music industry search large collections for music. I am particularly interested in the relationship between music publishers or record companies and businesses involved in exploiting works, such as film companies, ad agencies, broadcasters etc.. My research is focussing on how the request for an unknown piece of music is made to a rights holder, how the rights holder interprets and satisfies that request, and how the user evaluates and uses the tracks they

are offered. The point of this is to derive rich data drawn from interviews and documentation (eg emails) so academics working on systems can have more insight into how people look for music.

xxxx told me you would be a good person to approach for an interview.

If you are interested in being involved in this project please let me know and I will send you some detail and arrange a time for interview. If you have any questions please do not hesitate to contact me via email or by phone on 020 7272 3835 (h) / 0794 052 7934 (m).

I would like to interview you sometime before the end of the year. It will be for about one hour. I would also like to have the opportunity to observe you searching for music. All reported results will be anonymous.

If you are unable to take part for any reason but can recommend someone else that you may feel would be appropriate please feel free to forward them this email. If you do this I would be grateful if you could copy me in.

Kind regards

Charlie Inskip
Centre for Interactive Systems Research
Department Of Information Science
City University London
Northampton Square
LONDON
EC1V 0HB

b. Explanatory Statement

Communicating Meaning And Meeting Information Need Within The Music Industry

1. Principal Investigators
   Charles Inskip
   Dr Andy MacFarlane

Pauline Rafferty

2. Purpose of the study

The purpose of this project is to investigate how professionals within the music industry look for music in large collections when the music is for exploitation purposes such as synchronisation or broadcast. There has been little research done in this area and the results of this project will help contribute towards a better understanding of the issues and problems that arise in this process, particularly when building systems to search for digital music.

3. Participants in the study

We are recruiting people within the music industry and from media organisations in order to get information on how they search for music and how it is used. One of our industry contacts has recommended we contact you for interview and provided us with your contact details.

4. Benefit of the project

Our aim is to recommend ways in which people using music for work purposes such as synchronisation or broadcast may improve their search results so that when retrieval systems are developed they take these factors into account and can retrieve more useful material.

5. The research

You will be interviewed for a maximum of one hour in a place and at a time convenient to you. The interview will be recorded digitally. At the end of the interview you will be asked if you will give the researcher the opportunity to observe you searching for music. If you agree to do this it will take place at another time, again in a place chosen by you, will last for a maximum of two hours and will also be recorded digitally.

6. Confidentiality

The correspondence, transcriptions and other personal information will be kept in a locked cabinet accessible only to the researchers. You will be given a

code number when you agree to take part and your name will not be used to identify you in any part of this study. The recording of the interview and observation will only be accessible to the researchers. After the interview and observation you will be given a summary of what was discussed. If you disagree with this summary you can ask for a full transcription and copy of the interview/observation recording.

7. Participation

Participation in this study is voluntary. Participants may withdraw at any stage, or avoid answering questions which are felt too personal or intrusive.

8. Results of the study

The results of this study will be published as part of a PhD thesis. Papers based on the results will be submitted to academic journals, conferences and trade press for publication. Verbatim quotes will be used and anonymity will be maintained in all stages of the publication process.

9. Further use of results

The information provided by you may be used in further research projects, by this researcher, which have ethics approval.

10. Contact

Charlie Inskip
Department of Information Science
City University London
LONDON EC1V 0HB
Telephone: 020 7272 3835 (h)
Email: c.inskip@city.ac.uk

11. Complaints

If there is an aspect of the study which concerns you, you may make a complaint. City University has established a complaints procedure via the Secretary to the Research Ethics Committee. To complain about the study, you need to phone 020 7040 8106. You can then ask to speak to the Secretary of the

Ethics Committee and inform them that the name of the project is: Communicating Meaning And Meeting Information Need Within The Music Industry.

You may also write to the Secretary:

Dr Naomi Hammond
Secretary to Senate Ethical Committee
Academic Development and Services
City University
Northampton Square
London
EC1V 0HB
Email: naomi.hammond.1@city.ac.uk

c. Informed Consent Form for Project Participants

Project Title: Communicating meaning and meeting information need within the music industry

I agree to take part in the above City University research project. I have had the project explained to me, and I have read the Explanatory Statement, which I may keep for my records. I understand that agreeing to take part means that I am willing to:

be interviewed by the researcher,
allow the interview to be audiotaped,
be observed by the researcher,
allow the observation to be videotaped,
make myself available for a further interview should that be required.

This information will be held and processed for the following purpose(s):
analysis for written PhD thesis,
academic journal articles,
academic conferences,
trade conferences and publications,

other media publication of results (including, but not limited to internet, radio and TV broadcast, books).

I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party. No identifiable personal data will be published. The identifiable data will not be shared with any other organisation.

I agree to City University recording and processing this information about me. I understand that this information will be used only for the purpose(s) set out in this statement and my consent is conditional on the University complying with its duties and obligations under the Data Protection Act 1998.

I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalised or disadvantaged in any way.

The information provided can be used in further research projects which have ethics approval by this researcher.

Name (please print):
Signature:
Date:
Address:
Participant code:

d. Questions for User

1. What is your job (title), please talk about what you do day-to-day.
2. how much does this involve actually working with music itself
3. what do you use the music for
4. do you have to look for music as part of your work? How much time do you spend doing this every day/week
5. do you choose it yourself or do you offer a selection to someone else who chooses from that selection
6. do you look for it in large physical collections – discuss
7. do you look for it in large digital collections – discuss

8. where are these collections situated
9. who are you providing the music for – is it someone you know socially/professionally
10. how do you communicate with them
11. is there a dialogue – do they give you a request and you send them music, or do you discuss with them
12. do you always understand what they mean
13. I'm interested in finding out in detail how you respond to these requests, perhaps you could use an example beginning with them coming to you saying 'I need a piece of music' and ending with them saying 'that's the one I'm going to use' and tell me step-by-step how you get from the beginning to the end of the search
14. do they ask for stuff they know or music they haven't heard
15. when you start looking for something do your ideas about what kind of track affect what you look for and offer
16. do you stop looking when you've found one track or do you carry on until you have a selection
17. how do you choose between the tracks – is there something special you listen for, is that special thing part of your request or just in your head, is it the thing you will use or just the thing you use to help choose it
18. describe the situation when you listen to the music
19. do other people get involved in the search – who, how
20. do you interpret the request for a system, or do they interact with the system and you help/guide if the need arises
21. does the system make recommendations, are these any use
22. do you offer a one-off list of material or does the searcher come back to you and say 'more of this, less of the other' and refine their query. What do you do when they do this
23. when they describe what they are looking for is this the same way as the way you/the system describes it, or do they have to change their description to match the system. Does the system 'understand' what they are looking for.
24. do you use special ways of describing the music
25. anything else you want to talk about
26. anyone you can recommend I can interview

27. can I do an observation
28. have you got some examples of queries I can take away

e. Questions for Producer

1. What is your job (title), please talk about what you do day-to-day.
2. how much does this involve actually working with music itself
3. what do you use the music for
4. do you have to look for music as part of your work? How much time do you spend doing this every day/week
5. do you choose it yourself or do you offer a selection to someone else who chooses from that selection
6. do you look for it in large physical collections – discuss
7. do you look for it in large digital collections – discuss
8. where are these collections situated
9. who do you get the music from – is it someone you know socially/professionally
10. how do you communicate with them
11. is there a dialogue – can they ask you questions or give you feedback about your request, or do you just make a request and get some results
12. I'm interested in finding out in detail how you describe what you are looking for, perhaps you could use an example beginning with you thinking 'I need a piece of music' and ending with 'that's the one I'm going to use' and tell me step-by-step how you get from the beginning to the end of the search
13. when you start looking for something what kind of idea do you have about the track – is it something you've heard before or something new
14. do you stop looking when you've found one track or do you carry on until you have a selection
15. how do you choose between the tracks – is there something special you listen for, is that special thing part of your request or just in your head, is it the thing you will use or just the thing you use to help choose it
16. describe the situation when you listen to the music
17. do other people get involved in the search – who, how
18. does the system make recommendations, are these any use

19. does the system give you choices which are useful, or do you need to tweak these in any way or get other input
20. when you describe what you are looking for is this the same way as the way the system describes it, or do you have to change your description to match the system. Does the system 'understand' what you are looking for. Do you 'understand' what it is offering to you and why (does that matter?)
21. do you use a special way of describing the music
22. anything else you want to talk about
23. anyone you can recommend I can interview
24. can I do an observation
25. have you got some examples of queries I can take away

iii. **Interview transcript example extract**

Anonymised music supervisor, film and TV, coded 004SUP

C – ok. So .. perhaps you could go into a bit of detail about the process when when you when someone's asked you find a bit of music for some footage, how do they tell you what you're looking for?

004SUP – e:m I think again just depends on individual producers and directors, you know. There's not sort of two people that work the same. Often you're, you know, if you're lucky enough to ge- I guess it depends where you are on the process. If you're in post-production and you get involved in post-production and there's footage to see then that's fine. Sometimes I'm involved in pre-production and I'm working on a script and I'm just working on basic ideas. For an example e: I've just done two really recent big two TV shows, one for Channel Four, which is a teen drama, and one for ITV, which is a k- I guess a soap drama but it's more- it's more involved than that. They were a- respectively a s- s- six one hour episodes for the teen drama and twelve half hour episodes for the soap drama. So I spent most of the summer having to get a load of music together, most of the- ninety percent of the stuff that ended up one the show came from my ideas. The odd director had a few suggestions, and the producer had a few but predominantly they relied upon me. Now .. to be able to .. sit and watch that amount of television and look at every slot and go 'right that needs to go there and that needs to go there' doesn't really kind of work like that. So for television, because most of the time,

you know, a lot of the stuff, predominantly it's featured, a lot of it's background, and because of the sort of process in which the production works and the deadlines are which you work to and that, you know, by the ti- you know TV's turned around quite quickly so no sooner have they finished shooting one block then they're immediately editing it and the next block's shooting and therefore, you know, the whole post-production thing is a lot shorter than it would be on a movie. So you've got to be ahead of the game on music. so what I did with those two episo- those two shows was basically to get a general sense of what the overall feel of the music would be, the teen drama was made up of .. initially the writer, who wrote the first two episodes, wanted to include a lot of indie American bands – the Eels, Bright Eyes, Postal Service, other suchlike .. the decision on that was that those tracks were all a bit dated and also .. American and had been, you know, those kind of bands had seen exposure on on the likes of the OC and Dawson's Creek. And this was as a new British show kind of highlighting British talent in terms of actors and actresses and it would be a good idea to try and match the music and tempo and style but actually take it from predominantly British acts. And a lot of new British acts. That have not necessarily getting high exposure but nevertheless are are very good. So my first pitch on that was literally to put a compilation together of sort of, you know, stuff that I liked and that I thought would fit. I did that, they gave me the gig, and then we spent, my assistant and I spent, you know, kind of months just the stuff came in from general mailouts to specifically going to people and saying 'these are the kind of acts that we're looking at, you know, what else have you got?' And just gradually kind of compiling cds that I would then send through kind of week by week. Until really what they had was a big pool of music to play from. You know, probably 250 tracks. And then kind of for the day to day kind of background scenes and the sort of the emotional stuff I mean .. I'd obviously read the script very briefly .. but the essential thing is, you know, it's about kids, it's about growing up, it's about turmoil, it's about wanting to become famous, you just take all those little concepts into your head and as you listen to stuff you just know things that are going to work and when they're not going to work. And .. then you rely upon really good editors and good directors to kind of hear what you've given them is right for their project, and let them do their stuff, in that instance. And luckily we had three very good editors and three very good- two very good editors and one in particular who did one block who was great, and .. it just filled in. And then there were scenes where

specifically, you know, they wanted particular ideas .. so then I would go in, once we were in post-production, and sit down and watch the particular scenes and go 'well try that track there' and if there was nothing got from the existing tracks I would then suggest sort of more ideas, more specifically. And that worked, you know, that works really well. And similarly with the e:m with the other tv show that I've just finished, [section deleted for anonymisation], initially it was, the idea was that we'd have, like, up and coming surf bands, you know, and then it- .. then we discovered that it was going to be on prime time ITV, not nine o'clock, and the producer sort of quickly said well 'we're going to need hits and we're going to need familiarity, that's what ITV are going to expect'. The core audience, I guess, is going to be kind of, you know, twenty-ish to sort of right up to about sort of forties. But the cha- we looked at the characters and there was two sets of characters, the kind of, you know, there's the parents, who are in their forties, and the kids, and so we went for a kind of fairly MOR route in kind of in many ways, but it was, again, just trying to find a pattern and a style that we stuck to. So, you know, we did obviously put the Red Hot Chilli Peppers in there because bear in mind they're California and surf, but a lot of it was kind of .. stuff like Corinne Bailey Rae, and Joss Stone, and, you know, a bit of James Morrison, sort of, you know, kind of very pleasant inoffensive, but not too bland .. pop. That, you know, the younger audience will not kind of turn their nose up to, and the older audience will go, 'oh, you know, I really like this song', you know. It's that kind of thing. It's the Lighthouse Family syndrome. But nevertheless, you know, you're still trying to find tunes that .. good tunes are not just, you know, picking off, sort of, you know, James Blunt tracks, just trying to find .. and again delving a little bit outside of the norm, you know. There were a lot of familiar stuff in there, but also I had the opportunity to plant stuff in there that wouldn't ver get hear on tv unless somebody like myself was employed to do it. And generally speaking, with a lot of those TV shows, in the main, if they fall under the TV blanket licenses, what you find is that they don't really want to be paying the likes of me to do a job like that, they'll rather just go and give it to the editors and the directors who would just bring in their old cds and put their same old crap on, you know. So you'll get James Morrison on everything, and you'll get The Verve and you'll get- it's just, you know, it's quiet obvious. So, I would, you know, but in this instance there was a a job for me to be doing, secondary role, which was transferring the music into international versions. Most often stripping out the commercial tracks because UK

companies can't afford to keep them in, so you'll replace them all with library tracks. So that's my current- what I'm currently doing on those two jobs. So .. but yes, the opportunity to do, you know, make a statement on those shows, a little bit more than they would normally do if just editors. And the production companies are very excited and very happy about what they've got on there and they I mean they have done something kind of a little bit different. I don't think it's that different but, you know, I suppose if I was watching it and thought 'oh, somebody's used that, where did they get that from?', you know, and a lot of new material that's just about to break including a new theme title song as well, which we used, a brand new breaking artist as well. So … so yes .. it it it really yes long wind long winded answer, but it just varies from project to project. You know, on feature films you're looking at a lot more specific scenes and a lot less, so you're maybe looking at maybe ten or fifteen cues, so quite often you will look at particular cues and you'll try half a dozen things that work and if they don't work you'll try another half a dozen things. With TV if you're trying to work on big broad landscape like that there isn't time to kind of, you know, being give a big palate to work from.

iv. **Interview extracts coded by repertoire**

a. Extract 1

In this interview extract (001SYN) it can be seen how the participant, who works for a rights holder, uses a range of repertoires to make a decision on the relevant piece of music. Each repertoire example is marked in <>:

Question: How do you then match those to the briefs that you are sent and how do you promote them to to your potential clients?

*Answer:
I have all our music on a dedicated music server</BR><SR> so I will get a brief in and quite often I'll actually get the visual in as well so if I have the visual up on screen</SR>
 I'll bring up my music database </BR><SR>[the visual?]. The visual of the ad, for instance, they'll send me the visual of the ad, so I've got the 60 second or the 30 second ad in front of me which really helps, because it's very different reading a brief and actually seeing how they shoot it. So I'll see it </SR>
then I'll bring up my music*

*database and the</BR><MR> songs</MR> that <CR>I think work</CR>
I'll pick up</BR> and <MR>I'll play the sections of the song</MR> that <CR>I think are going to fit</CR>. <SR>I'll match the music to the picture. I'll marry it up and see if it works or not.</SR>
 That's the most optimum way of doing it </BR><SR>if you get the actual visual in. if I get the script then I'll look at the script, </SR><MR>I'll see if sometimes they'll have a keyword search sometimes they want words say sunshine in it, so I'll look at
all our songs</BR> you know which songs have the word sunshine in </MR>and then <SR>match see </SR>
if pitch those </BR><CR>see if those work</CR>. <MR>Or there'll be a genre, what kind of style, you know they'll say 'no rock, no pop, we just want purely acoustic instrumentals' anything like that, so I'll go through the all the instrumentals that I have in that genre and listen to those</MR>
 and pitch </BR><CR>what I think's appropriate.</CR>
Nowadays I have to say, I used to make up cds and send them out but because of the fast turnaround I email mp3s, or I put them onto an ftp site and I say 'here [indistinct] here's [indistinct] package you know download these,</BR><CR> these are the songs that I think are going to work for you</CR>.
 And that's how I get them out there. Because it's much quicker now to do that, much.</BR>*

b. Extract 2

In this coded interview extract the same participant answers the question:

Question: What are you listening for ... in the music?

*Answer: <CR>I'm listening for, well it's really difficult because you can never predict what someone's going to go for </CR>
but certain music I can listen to and I can say 'there's no way you're going to get an ad for that, you know, that will be fantastic in say you know the major US TV programmes', which are a great form of licensing and we have artists that you know do really well in those programmes, but they'll never get an ad on tv. </BR><CR>Or I'm listen you know I'll listen [indistinct] say where I think licensing-wise where it's going to fit, </CR>
and there are certain artists you listen to and you can say 'well look frankly they're you know you're signing them because they're*

going to sell tons of records [indistinct] realise that, that's the primary focus, and</BR><CR> if we get licensing on this it's going to be a bonus'.</CR>

c. Extract 3

In this example, with participant 019SYN who is a freelance creative music searcher employed by ad agencies to find music for TV and cinema commercials:

Question: ok. Last one. What makes a great sync?

*Answer: Good question, what makes a great sync?
I think the most important thing for me is not to compromise.
<CR> It has to be the best piece of music for that film.</CR>
.And away from all the other factors around it, ie cost, politics, all those things that come into it,<CR> it has to have that feeling</CR> that no matter where this piece of music has come from, no matter how much it costs, no matter who owns it, and who's getting the money,</BR> <CR>it is the right piece for this film. That's the essence, I feel.</CR>
Beyond that, I think, other things on top of the sync, beyond the sync, can make it a great thing, I mean the PR and the story. If it's a band that have been launched off the back of an amazing spot I think that can also be really exciting, but that's just an added extra. </BR><CR>I think it's just how that piece of music works perfectly with that film. .. yes.</CR>*

v. Briefs – facets by frequency

Music Facets	References	Type
Mood	130	Subjective
Genre	39	Subjective
Music Structure	21	Subjective
Date / Period	20	Objective
Audience	16	Objective
Lyrics	14	Objective
Artist	11	Objective
Tempo	10	Objective
Instrument	9	Objective
Extra-musical	9	Objective
Song Title	7	Objective
Chart position	5	Objective
Budget	4	Objective
Version	3	Objective

Music Style	3	Subjective
Length	3	Objective
Instrumental	3	Objective
Clearable	3	Objective
Vocal	1	Objective
Territory	1	Objective
Song Subject	1	Subjective
Other intertextual refs	1	Subjective
Exploitation	1	Subjective

Visuals Facets	**References**	**Type**
Format (ad, film, tv)	25	Objective
Project Title	18	Objective
Visuals Subject	16	Objective
Brand	13	Objective
Visuals Function	6	Objective
Visuals Available	6	Objective

Query clarification	**References**	**Type**
Music Function	47	Subjective
Exclude	22	Subjective
Film title	9	Objective
Similarity	6	Subjective
Left Field	4	Subjective

vi. **Uncoded relevance judgements text example ordered by track**

MSE001

(word search, seek – title, lyric, description, any, Styles and moods – quirky, word search, shopping – title, lyric, description, any, topics and keywords – fun, genre – pop)

1	Moloko, Fun For Me	That's yes, ad music, quirky, has a fun element, it's been used to death – I guess if there's a sync history element on the computer that they know what tracks have been used. whereas a human a would know not to put that in because that's been used by different categories. [ok] and and a brand wouldn't	R

		want to use a track that's been used by another car category. Car brand in that category. So	
2	Brendan Benson, Pleasure Seeker	I'd say that you'd definitely include that. I think an interesting point to consider when I'm interpreting a brief I'm interpreting it from what the creatives want, because obviously this brief has come from them, but I'm also . looking through the process of how it works, that's got to go to a client, at some point, and I'd say that's a client track. That's a track you'd include – that's a clients interpretation – obviously that's a sweeping generalisation – of what a fun left of centre kind of pop track is.	R
3	The All Seeing I, 1st Man In Space	Ok I think it's got a definitely got a pace element, it's definitely quirky, fresh, the lyrics are kind of non-descript, so they're not talking about particular things, love, for example, also you could fit them with the car category but they're not necessarily talking about cars as well, so they're not obvious. There's something really different.	R
4	Field Music, A Gap Has Appeared	I think that track's maybe a bit too serious and earnest from what I would perceive from the brief the creatives are trying to achieve. I think in terms of genre it could work well, it's quite fresh but I wouldn't necessarily say it's quirky and different. It could fall into standard ad music category.	NR
5	Frank & Walters, After All	I think musically, as in the instrumental, it could work quite well, I like the way that the sort of initial bars kind of draw you in. it's very catchy, it's very upbeat. I don't think the	R

		lyrics are really going to work. they're too descript. Anything about love is always a bit of a nono.	
6	Gorillaz, All Alone	I think, in terms of genre that's a really good fit, it's got the atmospheric elements, that you could maybe do some interesting kind of sound design things, if they're moving around the space. In terms of lyrics, not really sure, hip hop's always a tricky one. If you're appealing to a car brand, which is pretty cross-generational, but, yes, I like the feel of it,	R
7	Jacknife Lee, Aloha Satellite Special		U
8	David Bowie, Andy Warhol	I think that's a good good choice, obviously iconic track, artist, regardless of whether they'd want to do an advert in this category, let's leave that out. I think it is something that a young audience could – could appeal to a young audience, the iconic classic sixties sound, I think in terms of the musicality it works quite well.	R
9	Dogs Die In Hot Cars, Apples And Oranges	I actually worked on that record, funnily enough. I think it's it's it's quirky, it's accessible, you could interpret that as the modern Squeeze, might be a bit too dull, in terms of what the creatives are looking for, doesn't really have the atmospheric elements, I'd say it was a bit straight.	
10	Laika, Badtimes	I think musically that's great, I really like the time signature, you could see that kind of appearing in a group of commercials and being the one that you kind of look up from your cup of tea and your, you know, Daily Mail, to read,	R

		no because it's got that interesting time signature. I think her voice is a bit dreary, I don't really think that sort of poetic pronunciation would really work in this commercial . I mean unless maybe like like, write some lyrics, get her to write something that was quite cool, could be an antithesis of the day out at the shops. It could be like her kind of giving a rant about, you know, what you're trying to get away from, to make it a bit more clear. But yes, I quite like that track.	

MSE005

(*Genre – pop, Mood group – quirky)*

1	Bertrand Burgalat, Ma Rencontre	Could work, depending on the territory, of the commercial, obviously any language, any lyrics you've got to think about the language that the territory's, sorry the territories the commercial is going to – I like, musically I think it's a good track.	R
2	Dissociatives, The, Horror With Eyeballs		
3	Dissociatives, The, Lifting The Veil From The Braille		
4	Sarah Hudson, Strange		
5	Jane's Addiction, Been Caught Stealing	Probably the best so far, spot on, accessibly but, yes, it's quite leftfield as well. It rides that line really well. Between something that's I think what I would perceive that they're trying to achieve here.	R
6	Jane's Addiction, Been		

	Caught Stealing		
7	Grace Jones, Nipple To The Bottle	Grace Jones for a car ad? Amazing idea. In a parallel universe that would probably be [haha] the track that's on every single advert out there.	U
8	Men Without Hats, Pop Goes The World		
9	Bobby Rydell, Kissin' Time	I like it musically, I think it's definitely got the fun element, lyrically I don't think it's spot on, but I like I like where they're coming from, in terms of the genre, and the era, but	R
10	Squeeze, Annie Get Your Gun	I think that's too MOR, too dad rock, plodding, wrong kind of audience, I wouldn't, I wouldn't pitch that. C – how would you, in the brief, how would you interpret 'middle class day out at the shops'? D - .. yes. true, I guess I'm more kind of riding a line between having to find an element nothing you've heard before [ok] and I, you know, I think just because – I'd say the middle class day out in the shop is the actual script, and that the nothing like you've heard before is the music which rides the line. I think that – oh sorry, you want to, yes, well that's what I'm kind of saying, you want to avoid anything that makes it feel like a middle class day out at the shops. How would I interpret that? Two point four kids, Ford Mondeo, driving to the shopping centre, they do every single Saturday, they maybe go to Primark, bit more middle class, maybe John Lewis, dad on the way home, is pretty much going to listen to the Best of Squeeze. [haha]	NR

MSE003

(*Keywords / track / lyric – seek, Keywords / track / lyric – shopping, Genre pop)*

1	The New Seekers, Beg, Steal or Borrow	That's just dad driving his Mondeo again. [haha] in terms of what I mean is it's just too MOR, it's it's too it's you know it's bog standard MOR rock, basically.	NR
2	The New Seekers, What Have They Done To My Song Ma	I like the idea of, I mean it's so off brief that it could be a curveball and could maybe work. I don't think lyrically it's necessarily right,	R
3	Judith Durham / The Seekers, Speak To The Sky		
4	Nikka Costa, Everybody Got Their Something		
5	Wu-Tang Clan, C.R.E.A.M.	Same with the Wu. Not – next track, sorry, Wu Tang Clan. It's not going to work for that client. … And again, just going back to the Wu Tang Clan, if there was a human element to that search, that – you just wouldn't put that forward . to a client . for a car brand. Because, you know, a bunch of guys made their money selling 12s and crack out of the back of a car, in Brooklyn, on a a car ad, this is going to	NR

		be on a family brand, it's just- you know, you you'd kind of pick that out – scrap that completely.	
6	Wu-Tang Clan, Wu-Tang Clan Ain't Nuthing Ta F' Wit	As with the second Wu Tang Clan track in the search, just completely inappropriate type of music for this commercial. That's it.	NR
7	Pet Shop Boys, Shopping		
8	Pet Shop Boys, Left To My Own Devices	It's neither here, neither here nor there to me really. I wouldn't include it in a search, I don't think it's particularly strong lyrically, musically I guess you could say it's on brief, but I don't think that's really going to excite anybody again, perceiving what I think they're trying to achieve with the script I wouldn't necessarily pitch that forward.	NR
9	Destiny's Child, Bills, Bills, Bills	I just think that's the wrong – wrong genre. Off brief. It's not going to work for that client.	NR
10	Sleeper, In-Betweener	I'd definitely include that, I think it's on the fine line of being something you'd expect, but shopping for kicks, I think lyrically it works quite well, the whole song is about that kind of . suburban middle class kind of lifestyle, so that	R

		could work.	

MSE004

(*keyword – seek, keyword – shopping, genre – pop)*

1	Djumbo, Hide and Seek (Catch Us If You Can)
2	Djumbo, Hide and Seek (Catch Us If You Can)
3	Alcazar, I Go Shopping
NB none of these songs were available on Spotify at the time of the observations.	

MSE002

(genre, pop (not genre, muzak, rock, electro, dance), lyric theme shopping)

1	Madonna, Hung Up	I think that's actually quite an interesting shout. I'd say the use of the sample actually . gives that track to a certain degree two sets of appeal and you can appeal, you can make it sound like a middle class day out at the shops – as in an Abba kind of listening middle class day out at the shops but you can give it more an element – well also there could be a kind of play on that – I'd definitely think that's an interesting idea, and would look into maybe exploring that angle further, getting an older kind of track which would be a muzak muzak-y day out thing, and maybe halfway through the script you just flip that track and use it in a sample, or modernise it to give it that kind of new element you're looking for.	NR
2	Madonna, Hung Up (Live)	I don't think that track would work… I pr- I – in my experience I've never used a	NR

		live version of anything, I don't know any clients that have used a live version of anything, unless, it's an on camera and you're trying to achieve .. the essence of a gig. You'd obviously use a live version. If there was a live version that had a particular musical element, say half way through, that you wanted to replicate, but to be honest, what I'd do then is just clear the publishing and re-record that musical element in a new master because the recording quality would be better – unless it's very good live recording that's literally come off the desk, I wouldn't see the point of using a live recording.	
3	The Pointer Sisters, I'm So Excited	I think that's too mainstream. Mainstream pop slash seventies, sounds like something I've heard before, whereas they're looking for nothing I've heard before.	NR
4	The Pointer Sisters, I'm So Excited (re EQd version)	Ok that's the same as the track – the one before last. So the same comments would apply.	NR
5	Le Tigre, I'm So Excited	I think that's very suitable going on the brief. I think that's, you know, it's not one of my favourites but I'd definitely pitch it.	R
6	The Pointer Sisters, I'm So Excited		
7	The Pointer Sisters, I'm So Excited		
8	The Pointer Sisters, I'm So Excited		

9	Madonna, Material Girl	It's material world, shopping centre, shopping – bit obvious – definitely, you know, is something I've heard before, has a kind of bog standard pop element to it.	NR
10	Black Eyed Peas, Pump It	Could work, maybe a bit in your face, could work with the ordered chaos, again, I like this idea of having a kind of old sample in there, as well, I don't know whether that's been done deliberately, I'd guess not, but to appeal to the kind of the middle class older generation and also the younger demographic as well. Which they're trying to get.	R

MSE006

(*Lyric – seek, shopping, Song title – seek, shopping, Genre – pop)*

1	Diana Krall 's Wonderful		
2	Bette Midler All of a Sudden	That's what I'd call a curveball, definitely throw it in there, it's not specifically on brief, but it's got a definite fun element to it. it's quirky, it's different, it's going to stand out in the music search, creatives I think are going to respond to it to a certain degree, could be a big guilty pleasures, it's cheesy, it depends on, again, what they're trying to achieve, and how the thing's shot. But I definitely think it's on brief.	R
3	Unknown I'm A Fool To Want You		

4	Morton Gould His Piano and Orchestra Someone To Watch Over Me	Gershwin – lovely, too old, too mainstream, not on brief in terms of the audience.	NR
5	Bare Naked Ladies Shopping	Bit literal, bit cheesy, I'd probably put it in, but I'd caveat very heavily that I'd want to do a new recording, could we get a new young band to re-record that in a kind of left-of-centre crazy way, bring in all the atmospheric elements, but with that shopping refrain I think it's quite interesting, and it it could be quite good if you get the execution right on that one.	R
6	Bare Naked Ladies Shopping		
7	Bare Naked Ladies Light Up My Room	I don't think that's got the pace they need to move it around the	NR
8	Don Henley If Dirt Were Dollars		

vii. 003SYN coded repertoires from interview text

003SYN BUSINESS REPERTOIRE
involved in, over and above the use of music in commercial, let's how we can
s .. shocking, really, very impressive. So, yes, it's basically sourcing music contacts from the advertising industry, so when they're at
know, and I'll just .. find out what it is they're looking for, or what role they need
the visuals. And, you know, the target market, who it's aimed at. It has to fit a
two adjectives that, you know, get fired our way. so if you if you

will have, will want to consider music way up front, before the script is actually
ad agencies, are guilty of leaving the music the consideration of music, until the week before the air date, when the thing's been
week, we've got to clear a track within a week, we need something that works
fifty grand, a hundred grand, 'how much is the track', 'a hundred grand, fifty grand'. So there's a lot
what might work or a particular area or style, something like that
at two, maybe three tracks. Clear two of them, maybe, present one to the
Clear two of them, maybe, present one to the client. If the client didn't
you know, brands like Levis, they look at thousands of tracks. iPod, Apple, they look at
thousands of tracks. iPod, Apple, they look at thousands of tracks, months before the air date
into thirty seconds' you know. It's a powerful tool .. so you see a lot
well they usually start with a phone call or an email, saying, you know, 'we've got a project on the go, it's for such and such a client, they might send the scripts
do .. do something different, and their approach to music is a little bit different to the other brands in that they'll try
ve got good budgets, so they can license tracks, so they can often persuade
they're a reputable brand, people are prepared to .. license songs which they wouldn't for other brands. And they've got high
situation. And it's also they can rack up the albums in stores as well, so they can
in stores as well, so they can sell vast quantities of the chosen album at the

checkout. [right] So that's .. a

ll do it that way, rather than leave it till a week before the ad airs and then panic and try and clear a a song which has ten writers and based in different countries

which has ten writers and based in different countries, and you're never going

based in different countries, and you're never going to hear back from them within a week. So they do consider music

them within a week. So they do consider music a lot more upfront. And that's [REMOVED]

or films or reference tapes .. and they'll play it to .. target market in a research group and say 'if we produced

think, how would you react?' So a lot of it's tried and tested beforehand and certainly on the music front, for [REMOVED], they do test a lot of .. do a lot of testing when it comes to the music tracks. They started off with 'Albatross

sumptuous and .. kind of recognisable, it's all the brand values that [REMOVED] have. Within the music. After that they licensed 'Samba

Within the music. After that they licensed 'Samba Party' by Santana, and what came out of

the seventies and kind of weren't hitting the younger end of the market. So the third track they

end of the market. So the third track they used on the food campaign was Groove Armada, 'By The River'. Which is a bit more

a bit more contemporary. And they're now looking to replace Groove Armada. So that's what's

you know back going 'no we used that one back in the past', you know. 'We can't

in the past', you know. 'We can't possibly use that one, it's been used before'. There are only so many
it's been used before'. There are only so many tracks in the world and only so many published
tracks in the world and only so many published by [REMOVED] so there comes a time
whole process, you'll send three or four cds of ideas over, you won't hear
it's one of many. But it's part of, you know, part of the working process just to .. help your clients. And also y- it's
to be told, you know, 'this is a new album, it's coming out next
this is a new album, it's coming out next week, it's going to be
s coming out next week, it's going to be number one, license it'. They don't
going to be number one, license it'. They don't fall for
t fall for that, they a lot of record labels are guilty of having a hidden agenda, a release schedule, and flooding the market place with copies of a new, you know, promo copies of a new album. As a publisher we don
find the right song and then worry about the recording'. Maybe there's a cover
or maybe now we can get somebody to re-record it, or remix it, or rework
it, or remix it, or rework it, you know, to meet your
not record company, you know, 'this is a hit artist, it's going to be
this is a hit artist, it's going to be a hit record in x months time or whatever as your ad
view. As I say, you do kind of have to sell it in very gently and let them think that

examples where it's been track one on the first cd that they'll come back
back to, you know, one track one, two or three on the first cd. When they're months, they
cd. When they're months, they've spent months listening to music and they've had the
months listening to music and they've had the tracks come back to the first two or three .. because they work. If you
send me a rough cut, I'll go through the catalogue, I'll have a rough
cheesy number from yesteryear but it's certainly getting a lot of press at the moment.
C – so that's getting
s an interesting area because we never ever grant downloadability rights in our sync licenses. And the reason for that
one year UK campaign, and it becomes in perpetuity and global. Because if you grant downloadability
in perpetuity and global. Because if you grant downloadability to one person you've got no control over where it'll end up, how many times it can
where it'll end up, how many times it can be forwarded and how it can be
lot of writers of the big hit songs a sort of very nervous
of very nervous about that, licensing those kind of rights because once a brand is
those kind of rights because once a brand is associated with a hit song and I go back, you
the Quality Street campaign. So once a big song is associated with one brands it dissuades other advertisers from licensing the same song. So downloadability is a real

licensing the same song. So downloadability is a real issue. But funnily enough, I was
People upload them to .. Youtube, it's all copyright material, they don't have the rights, but it's it's
s 'Get The Party Started' I pitched that song to them .. and .. you get so much
you know 'this is great, it should be released as a single .. I mean she didn't
only sing sing the chorus, but because of all the hype and the chatter and radio djs were saying, you know 'this will be the Christmas number one', not knowing that she hadn't recorded the whole song. I then tried to persuade her to go into the studio to record the whole song, which she eventually did, but not in time for Christmas, so it wasn't the Christmas number one. But, you know, .. that was
that was a difficult one. She didn't really want to be associated with a cover version at that point in time
that point in time, because she had an album's worth of new material, she didn't have a
have a label deal, so there's no way of getting that material released, .. and off the back of
of the M&S campaign, she did go in an record, you know, full version of
in an record, you know, full version of Pink's – she also did an album
full version of Pink's – she also did an album's worth of covers, which was released with, you
was released with, you know, one or two original songs on there, I think. So
But but at the time she was adamant she didn't want to be associated with a cover which … But I don

any harm, I was at Glastonbury this year when she opened

huhuh. Yes, and I think it's done her career no harm at all. I think she's .. riding

it very rarely gets changed. It's very expensive to do. Having paid for a piece of music, the last thing you're going to get your money back if you decide to take it off air. And kind of done a track. And there's certain logistical costs involved as well. In terms of changing music and getting it out to tv stations again. So it's quite an expensive thing to do. It does happen, but usually they'll let, you know, they'll run one track for, say, six weeks and then maybe when it's off air they'll change it and put it back on air with another track. But then everybody of course

track' .. then, you know, yes you have to go back and start looking all over- you know get some direction basically.

C – Right. So when they

to do another search?

D – yes, I mean, you won'- you won't get the quotes verbatim from the research group, but you'll get overall findings. And, to be honest, some ad agencies are braver than others. they'll say 'yes – but research groups are not a true test', you know, because it's probably 20 housewives aged between 25 and 35 with three kids who live in Sheffield and they shop at Morrisons and they're all put in a room with a a two way mirror, where they're observed, kind of thing, and you'll always get – I mean I've been

says yes or no, and they're the ones paying for the music. so at the back of

best of times. you know, it's not a simple as convincing one person. You know, there's a whole group of people involved. In that. Yes. haha. Some times are more successful than others. I mean you can fall at any of those hurdles. It's a difficult process.

D – I know the tip of the iceberg, when it comes to [REMOVED] catalogue, I have to confess.

confess. As you can see, cds on shelves here, that's always our
to Z, , classical, composers, [REMOVED] samplers, world music, instrumentals, soundtracks, and
back to the cds, but most of the tracks on the albums are loaded into iTunes now, so I tend to
into my iTunes library. But the whole album will go into the hard drive next door. Which is shared between everybody
the marketing department. So [ok] if you want a track, in theory it should be available next door, if not, the librarian, who
when [REMOVED] started. But obviously you sign songs which are older. In theory, we should have
which are older. In theory, we should have a copy of every single track, but I mean I know
mean I know there's probably about a million songs in we don't
a million songs in we don't have a million songs on cd. So there are songs which
songs which .. this .. I mean there are songs been written which have never been released, .. which we don't have
have never been released, .. which we don't have copies of recordings, or I mean the attitude
we are a music publisher, it's all about sheet music. We are not a record
are not a record label. If you want a recording, you go to a record label. It's not a publisher
them. My argument was always, 'well if you're trying to get a tra- get a song in sync to a film or an ad or a game or anything, a different mix can make all the

difference. In whether it was placed
was placed or not. [yes]. You have to have recordings and you know, they
before [REMOVED] started in 1987 there's a whole wealth of material .. we have song titles on
song titles on the system, we know we own it, we know who the writers
we know we own it, we know who the writers were, we .. do we have a
who the writers were, we .. do we have a copy of it? No. [no.] So, yes, this is
iPod at the moment, so I can listen to all these and get to know them
it's probably got about ten thousand tracks on it. So, again, it
the the website was produced. These were the kind of .. the categories that we all agreed were we could slot songs into. But the brief was to
brief was to make it make each song meets as many moods or categories as possible, so it popped up in
or categories as possible, so it popped up in as many search results as possible, and theref- and therein lies
website works as well, is each territory's responsible for uploading songs originating from their country so, if I search for
terms of tempo, gender, record label, release year, lyrics, .. I mean
tempo, gender, record label, release year, lyrics, .. I mean if I
word love in that track, see all the rights here, see the release year, the
see all the rights here, see the release year, the record label, click, play
here, see the release year, the record label, click, play the whole track

year, the record label, click, play the whole track, I can download it, because
click, play the whole track, I can download it, because I'm an internal
I'm an internal employee, I can email it to somebody, say about the project
password to a client, so they can access the tracks [right] their end, but nine
the tracks [right] their end, but nine times out of ten I'm more likely to burn them a cd, go in for a meeting, play it with them – play it to them, gauge their reaction, or maybe email them an mp3 or something like that. My preferred way of working is to go in with a cd, sit down with the creatives
visuals in an edit suite, play it to them, talk about why they think
way you get instant feedback. If you just bike a cd over or email a track, you don't know if
ve cued it up correctly. And it's just a lot more- sometimes you don't get any feedback at all. I mean you can – there was one project where job where I burnt three cds, sent it over and never even had a thank you from the ad agency, I don't even know if they've received the cds. But yes, they've phoned me back a month later and said 'you know that search you did, well, we've moved on. Can you do another search in this style?'. Ah, ok, didn't hear anything, three different people in the same ad agency working on the same job phone you up and get you to do all these searches for free and it amounts to nothing. You don't even get a courtesy call to say 'thanks but no thanks'. So I try and avoid that by not letting go of the music and saying 'well, come on
an independent company called MSE003, they've got one with 200,000 of our songs on it, you know, so
on it, you know, so our own one has only got 10,000 songs on it. You know, I can
the site and you can access twelve songs that I've chosen that I think meet your
use, you know, I'll burn a cd in iTunes nine times out

yes I've got various playlists, anyway, varying from other ad
thought it was, you know, creatively a good vehicle for exposure of the song and as he hadn't
of the song and as he hadn't recorded the song himself I was – you know – I
kind of thought well might – he might relent and agree to license it but no he didn't
then I started looking for alternatives and that's when we
a track on, they say 'we can't license this track', meaning the client won't
can't license this track', meaning the client won't find the money to agree to license it 'we're looking for something
re looking for something similar, what have you got?' Everybody in the music industry
similar, what have you got?' Everybody in the music industry will pitch 10 – 12 – 20 – 30 tracks and then they'll go with the track that was on there, they'll just find the
Europe at the moment and Iron Maiden have got a 1980s theme world tour kicking off next year so it tied in quite well with our plans and .. everybody's happy.
C
yes] .. Not initially – I mean I pitched the song, they were kind of interested
themed tour. And was – again that was used for ammunition, I could go back to
ad agency and say well 'Iron Maiden have got a massive fanbase, you know the kids that
range there. They're still touring, they're still selling shit
still touring, they're still selling shit-loads of albums – there number one albums

across

shit-loads of albums – there number one albums across Europe this year. Huge fanbase, and

albums across Europe this year. Huge fanbase, and, you know, perfect market

Huge fanbase, and, you know, perfect market for [REMOVED], really. So they

don't know I mean I tried various tracks and 'a whole sense of

director, at [REMOVED] hardware, that any music in a [REMOVED] ad has to be either published by [REMOVED] or on [REMOVED] Records. That's- they have to

off with those criteria and if they can't find a song then they'll be allowed to go and license one from somebody else. But because at the time

it was, like, 'no, but here are some songs anyway' and kept very quiet and

copyright and between the two, Iron Maiden won out. So that was a case

two, Iron Maiden won out. So that was a case where – there was physically a punch up between the creative director at the ad agency and the marketing director at [REMOVED] over whether they should use a [REMOVED] track for the commercial, the creative director, the guy that wrote the gorilla thing for Cadburys was adamant that it should be the best

should be the best track, which was in the ad, and not one that just happened to be owned by [REMOVED]. The marketing director of [REMOVED], however, was adamant that it should be a [REMOVED] controlled track and it did come to fisticuffs in the meeting room at the ad agency. [haha] The marketing director of [REMOEVD] is now a- working for an ad agency called [REMOEVD]. He's gone over to the other side. .. But yes, it's .. I

talked the client round and sold it in the right way, you know, to him, and

you know, to him, and he could see the benefit from, you know, the Iron Maiden

fanbase, and how that would work
have to go to the CD shelves, I have to go to
I have to go to the new stuff see if I haven't
you know, I've got the [REMOVED] catalogue there, which is soundtracks to
[REMOVED] catalogue there, which is soundtracks to all the [REMOVED] pictures, releases, so that's a
that's a lot of old black and white movies and things, there's some really good
stuff in there, that's just arrived so I go through that
you know, it's not 'oh here's three songs we like, let's see if we can clear two of them, if we can we'll present those two to the client, if they don't go with one they'll go with the other one' I mean it just doesn
you know, because we've we can email tracks it's so quick to
it's so quick to send something over and get feedback, you suggest
we won't hear anything, you fire tracks over, you won't hear anything
at all, and suddenly maybe 'yes we like this one, is it clearable, can you get it on air by Friday?' or whatever.
have to sit there with a cd player and hit play on the
the old VHS recorder and play on the cd and try and cue it
ve even done deals where songs that we don't publish but I know it would work and if they're not currently administered I'm not averse to phoning them up and saying 'do you want to do a deal' and we've signed, you
first place I look is songs published by [REMOVED] but, you know, sometimes I
thing and if .. (53:20) this is where I think the difference between publishers and

labels comes in as well, if you were just pitching of a you know an upcoming release schedule, then you're not really
really listening to the brief, and people won't come back a second time if you, you know, burn a pitch cd and half the tracks don
brief. Or don't work. Then they won't call a second time. You won't be top of the list. So I try to ensure
So yes I prefer to send cds really. … Though sometimes I'll
the moment. But who knows – maybe that'll be the next thing, you know? Wall to wall
a sync point of view. Because what works for sync, you know, doesn't necessarily sell singles or albums. It's a different ball
a different ball game altogether. Thirty seconds of a track can sell a product or an ad but might not be strong enough to sell a single.

003SYN CULTURAL REPERTOIRE
lot of different criteria. And it's a very subjective matter, anyway. But they won't
have a few ideas, of what might work or a particular area or
back to that quote about 'if a picture paints a thousand words, a piece of music, you know, can get across millions of words and fit them all into thirty seconds' you know. It's a
the other brands in that they'll try and find bloody good songs from the 1970s, but ones that people know
songs from the 1970s, but ones that people know but haven't heard for a few years. It's that old 'guilty

a few years. It's that old 'guilty pleasures' type of type of approach. Things like 'Mr Blue Sky
values, good budgets, good directors, and there's a lot of word of mouth interest about the songs that they use when they go on air. So it's a kind
kind of had these values, would you – what would you think, how would you react?' So a lot of it
music was very sumptuous and .. kind of recognisable, it's all the brand
moment. They kind of feel they've exhausted that one, it's been going on
the same old tracks, going 'well, this would work', you know back going
later and they'll say 'that first track on the first cd, that's quite a good one, isn't it?. And, you know, they'll
a step back and say 'well this is the right track, we've found the perfect track'. But they'll always push
make sure that, you know, they have got the best track. So it's quite frustrating
have to work with them to find the right track and you know damn well
well that there's probably hundreds of tracks that they're keen on, and it's one of
they're keen on, and it's one of many. But it's part of
You kind of have to let them think that they discovered it. They hate to be told
to take the tack that 'let's find the right song and then worry about the
it in very gently and let them think that they've found it, because they all like to
they've found it, because they all like to think they've discovered the next big thing. So it's in the
feed them ideas without saying 'this is this is the perfect track, listen to me guys,

I
better than you, you know, this is the one'. Yes, I can think of
the first two or three .. because they work. If you've got a
ll go through the catalogue, I'll have a rough idea of the conversations we've had. I mean maybe they'll
the new [REMOVED] ad, because they were sick of all that – having found Jose Gonsalez for
Iron Maiden, perfect, you know, so wrong it's right. Which was the title of
heavy metal. Which is, again, it's so wrong it's right. And the reason Fallon, the
Fallon, the [REMOVED] ad agency, liked the Iron Maiden track, was because when we put
to take that information away, it's more 'have you seen that great gorilla ad', it's a chocolate ad, maybe, but very rarely Cadbury's'. Yes, people are certainly talking about it.
C – so do you do
recently, as you do, and all the ads that I was most proud of, and wanted to compile a showreel of, were available on YouTube, you know. People upload them to .. Youtube, it's all copyright material
ads I'm talking about. Now that .. and .. it's also interesting the comments you get on there, as well. You know, social networking sites and people talking about an ad. the M&S Christmas
that song to them .. and .. you get so much chatter about, you know 'this is great, it should be released as
Pink's impressed, as well. So, yes, it's kind of interesting hearing, you know, comments from viewers and consumers, really, what they think works and what

doesn't. You kind of feel vindicated when you you've got a good result kind of thing. … yes.
on air with another track. But then everybody of course realises that the music's changed and 'why has the music changed' so you kind of opening up a whole set of questions there, which you don't really want to be raising. But certainly, in research groups
know, the research group consumers say, you know, 'we don't like the music track' .. then, you know, yes you have to go back
and you'll always get – I mean I've been there – you'll always get one who'll pipe up, who'll be the leader'll say I think – you'll play them an ad and they'll laugh at it and they'll say at the end 'no, I didn't find that funny' and you think – but you were laughing thirty seconds earlier. And they'll all agree, say 'yes, that wasn't funny' because there's one that's, you know, louder and the leader of the pack. And you do get to kind of talk about what you see and discuss whether you'd buy the product if that ad was made. And .. it's not real, it's not how you view an ad at home, you know, with the radio on in the background, the dog barking, the kids around you, you know, it's not the same environment. So .. although you can take certain information out of research findings, it's not .. it shouldn't be, you know, held up a hundred percent. And a lot of ad
will want something that's tried and tested. And is kind of quite
tested. And is kind of quite mainstream and with mass appeal. So it doesn't alienate
with mass appeal. So it doesn't alienate anybody. But .. by default, it's
default, it's kind of lowest common denominator. So .. it's probably a
fast and brutal' I think, 'well, you might want that but I know for a
the Saga generation or something, they're not going to be into that', you know. No matter what

film looks like, you know, it's going to put people off. So, yes, there's kind
an album and I think 'oh, that track would be great for something in the future, not quite sure what, but it would be good for something, I'll load into my
listen to all these and get to know them, on the tube, or at
is a search website where multiple people were involved in categorising the tracks, but for me that kind
t work because, you know, how I would describe a track is not how somebody in the next office would describe a track. And .. this is is my
suite, play it to them, talk about why they think it works or why it doesn't work, because that way you get instant feedback. If you just bike a
letting go of the music and saying 'well, come on, I've got these ideas, let's see how they work, let's all sit down together and discuss what works and what doesn't. And if there's a
Maiden track and they wanted a track that was 'so wrong it was right' and Alan Parsons Project
not amused. [haha] but .. yes, the first track that they liked on the [REMOVED] ad was .. it was a Bruce
to agree to license it 'we're looking for something similar, what have you got?' Everybody
a massive fanbase, you know the kids that are into My Chemical Romance are also into Iron Maiden, the older fuddy duddies like
are also into Iron Maiden, the older fuddy duddies like us who are more likely to buy a [REMOVED] Bravia tv or a plasma screen or something probably were into Iron Maiden, in our youth, so there's a broad
the brief to me was they wanted something that was so wrong, kind of thing, it's

loosely .. loosely fit the visuals .. but it's just a question of playing different tracks and seeing how they work and then cueing the song
get there. [right] But it could've been any one of a number of songs, it was just getting the
Cadburys was adamant that it should be the best track, which was in the ad
movies and things, there's some really good stuff in there, that's just
the creatives are looking for something different then it's kind of
think outside the box and suggest things they wouldn't have thought of. So though it takes a
off the back of it. So they're happy, we're happy, the ad agency are happy, they've got the song they wanted. Obviously the first place I
can't find anything say 'have you thought of this one' … because it's all about
don't meet the brief. Or don't work. Then they won't call
ve kind of got to hook them in pretty early on. So yes I prefer to
to an edit suite and I don't know which track would work the best but I say that might
the best but I say that might work or a bit of
with it. It's all in yer face wall to wall, you know, where is it

003SYN MUSICAL REPERTOIRE
when they need to start looking for music, they'll contact me, you

who it's aimed at. It has to fit a lot of different criteria. And it's a very
a very subjective matter, anyway. But they won't say, you know, 'we want breakbeats' or 'we want something .. operatic'. What they'll say is
work or a particular area or style, something like that, they won
type of type of approach. Things like 'Mr Blue Sky' ELO, things like that. They've got good budgets
we've licensed things with Fleetwood Mac, Santana, but because they're
licensed things with Fleetwood Mac, Santana, but because they're a
comes to the music tracks. They started off with 'Albatross' by Fleetwood Mac, a very gentle, languid instrumental
with 'Albatross' by Fleetwood Mac, a very gentle, languid instrumental, which allowed the wordy voiceover
of research findings was that those two tracks were very much rooted in the seventies and kind of weren't
going on for months and I keep going back to the same old tracks, going 'well, this would work
the recording'. Maybe there's a cover version or an alternative recording that
a cover version or an alternative recording that exists which is, you
exists which is, you know, more right than th- the well known original recording .. or maybe now we can
to re-record it, or remix it, or rework it, you know
needs kind of thing. So we approach it we very much from a song basis and not record company, you

ve had. I mean maybe they'll know it's an instrumental or maybe they want lyrics
it's an instrumental or maybe they want lyrics with a particular reference point, so I'll search either
a particular reference point, so I'll search either by title or by lyrical content, see
ll search either by title or by lyrical content, see if that's the
that's the case, otherwise instrumentally, they might need a .. there
trends as well, you get the whole acoustic thing, and .. electronica, you know, there
the whole acoustic thing, and .. electronica, you know, there are .. it
electronica, you know, there are .. it's Devandra Banhardt at the moment, I guess, and .. you know
I guess, and .. you know .. Joanna Newsom and .. who else [TMobile] yes
and .. who else [TMobile] yes, Jose Gonzalez, but then you kind of
s why I an Iron Maiden track for the new [REMOVED] ad
of all that – having found Jose Gonsalez for the [REMOVED] bouncy ball
on tv has got some whimsical acoustic folk gubbins on it, and they want
in the ad break. So Iron Maiden, perfect, you know, so wrong
effects, and this one's 80s power ba- 80s power ballads and heavy metal. Which is
ba- 80s power ballads and heavy metal. Which is, again, it's
of the gorilla ad with Phil Collins on there as well.
S Christmas ad, last year, where Dame Shirley Bassey recorded Pink's 'Get The

Party Started' I pitched that song to
be released as a single .. I mean she didn't record the whole song, she she could only sing sing the chorus, but because of all the
she opened the set with 'Get The Party Started' and the crowd went wild
s probably a bit of electronica that's so recessive you
never heard on air before, that's loud, fast and brutal' I think, 'well, you might
to please both of them. But also, with music, it's such a subjective area. You get a creative team
s such a subjective area. You get a creative team, who write the script, who are probably in their twenties, and invariably, whatever music they're into, be it hiphop, electronica, grime, whatever, they'll want that on the ad. You get a creative director
ad break and gets noticed, and then you've got the client, who's probably, you know, into classical or jazz or something like that, and he'll want that on it, and then you've got the target market, you know, Debbie the housewife, who's 35 with three kids and lives in Sheffield who's into Madness. And you've got to
recessive music on that side. A to Z, , classical, composers, [REMOVED] samplers
side. A to Z, , classical, composers, [REMOVED] samplers, world music
A to Z, , classical, composers, [REMOVED] samplers, world music, instrumentals
, classical, composers, [REMOVED] samplers, world music, instrumentals, soundtracks, and kind of
composers, [REMOVED] samplers, world music, instrumentals, soundtracks, and kind of A
[REMOVED] samplers, world music, instrumentals, soundtracks, and kind of A

to
get a few ideas from names and the spines of cds
if we're looking for instrumental pop or rock or standard or
looking for instrumental pop or rock or standard or whatever I
instrumental pop or rock or standard or whatever I'll search
Or if there's a lyrical search, again I'll do
ll do a search by song title .. do you want- shall I
wealth of material .. we have song titles on the system, we know we own it
so .. I tend to go .. genre-based to start off with, [soundtrack, rock, punk, pop] yes
r&b] a lot of pop, Japanese, jazz, instrumental, guitarist
b] a lot of pop, Japanese, jazz, instrumental, guitarist, classical
a lot of pop, Japanese, jazz, instrumental, guitarist, classical instrumental
lot of pop, Japanese, jazz, instrumental, guitarist, classical instrumental, rock
pop, Japanese, jazz, instrumental, guitarist, classical instrumental, rock, quirky instrumental
Japanese, jazz, instrumental, guitarist, classical instrumental, rock, quirky instrumental, italian instrumental
instrumental, guitarist, classical instrumental, rock, quirky instrumental, italian instrumental, Indian
guitarist, classical instrumental, rock, quirky instrumental, italian instrumental, Indian instrumental, electronica
classical instrumental, rock, quirky instrumental, italian instrumental, Indian

instrumental, electronica, dance,
rock, quirky instrumental, italian instrumental, Indian instrumental, electronica, dance, acoustic ..
C
instrumental, italian instrumental, Indian instrumental, electronica, dance, acoustic ..
C – and
italian instrumental, Indian instrumental, electronica, dance, acoustic ..
C – and you
Indian instrumental, electronica, dance, acoustic ..
C – and you've catalogued
how I would l- would categorise tracks. There is, I'll tell
do a simple search by music style, mood, title, artist or lyrics
search by music style, mood, title, artist or lyrics. Or you
by music style, mood, title, artist or lyrics. Or you can
style, mood, title, artist or lyrics. Or you can do an
which breaks it down into different categories, acoustic, ballad, blues, classical, country
it down into different categories, acoustic, ballad, blues, classical, country, .. but
down into different categories, acoustic, ballad, blues, classical, country, .. but these
into different categories, acoustic, ballad, blues, classical, country, .. but these are

different categories, acoustic, ballad, blues, classical, country, .. but these are by
categories, acoustic, ballad, blues, classical, country, .. but these are by no
for, I don't know, new age songs in here, a lot of
in here, a lot of French compositions, in the French language, will
a lot of French compositions, in the French language, will pop up. I'm
French language, will pop up. I'm not looking for French language tracks, but, because they've uploaded
ve clicked, you know, the new age box and scary horror, or
way I can filter out French language tracks, that's another drawback to
you know, in terms of tempo, gender, record label, release
in terms of tempo, gender, record label, release year, lyrics
gender, record label, release year, lyrics, .. I mean if I put
put in let's see .. 'love' lyrics box .. where was I .. pop
lyrics box .. where was I .. pop. Between 1980 and 2000, that
box .. where was I .. pop. Between 1980 and 2000, that's uplifting, .. uplifting .. oh
god can't do that, 1980 2000 .. medium tempo, [200] well spotted
t do that, 1980 2000 .. medium tempo, [200] well spotted, mood uplifting
that they want to take, and hear more tracks in that particular style.
C – do you use this
it if it's a lyrical search or something like that. I

done, where looking through 60s 70s 80s 90s or acoustic or … the are
60s 70s 80s 90s or acoustic or … the are kind of
they ended up with the Iron Maiden track and they wanted a track
it was right' and Alan Parsons Project and Air Supply, Olivia Newton
and Alan Parsons Project and Air Supply, Olivia Newton John, Gilbert
Parsons Project and Air Supply, Olivia Newton John, Gilbert O'Sullivan (haha
Supply, Olivia Newton John, Gilbert O'Sullivan (haha) – I remember buying my
remember buying my sister a Gilbert AND Sullivan album because she was a
because she was a massive Gilbert O'Sullivan fan – I was about eight
ad was .. it was a Bruce Springsteen-written song, it was 'Blinded By The
Springsteen-written song, it was 'Blinded By The Light' Manfred Mann – but Bruce had just got
that's when we found 'Can I Play With Madness' by Iron Maiden – shall I give you a
was going to be a Powerslave, which is a 1987 album
a Powerslave, which is a 1987 album they did – it was going
was going to be a Powerslave-themed tour. And was – again that was
fin- they were looking at 'Yes Sir I Can Boogie' by Baccara [I remember that] which is
Have you seen that one? It's got 'She's a Rainbow' by the Rolling Stones on it. [oh yes, oh
that might work or a bit of contemporary classical and it's not until

you can tell, you know, what kind of tempo works, sometimes it'll be something
be something that's a little repetitive refrain which is repeated and then or whatever
I mean anything that's wall-to-wall lyrics, I mean any rap or
the next thing, you know? Wall to wall grime on your tv. Selling products
Yes, I've got a Lethal Bizzle album but I have to say
is it .. here you go. Lethal Bizzle. Haha. Doesn't really work

003SYN SOUNDTRACK REPERTOIRE
I enjoyed the most was sourcing the music to fit the visuals. And that's kind of
I try and get the get our songs, published by [REMOVED] Music Publishing, or, as it is now, [REMOVED] Music Publishing, used in ad campaigns. And over and above that
they're looking for, or what role they need the music to fill, rather than what it is they're looking for, because a lot of the time they don't know, they just know the effect that they want the music to have. In tandem with the visuals
or 'we want something .. operatic'. What they'll say is 'we want something effervescent' or, you know, one of these wild adjectives that describe the mood they want the music to have on the viewer. And nine times out of
times out of ten is something you've never heard on an ad before, so if the housewive's
notice of the commercial. So you always want something you've never heard on

an ad before. That's a prerequisite. Usually uplifting and quirky are
That's a prerequisite. Usually uplifting and quirky are the other
a prerequisite. Usually uplifting and quirky are the other two adjectives
composers, get them to write uplifting, quirky, instrumentals, with a bit of a build in there, and I'm sure we
within a week, we need something that works with these visuals, it's got to- nine
before the air dates that they would suddenly realise they need music. And having spoken to creatives
them .. the reason why they don't get involved with music track far earlier in the process is because they don't want to limit themselves, they don't want to
don't want to say 'right, we're going with this music track, in the ad and have it not fit the edit, or flow of the edit, or the tempo or something like that. They want to have complete
months before the air date. The music is a lot more important to the ad campaign. I think music's probably
important to the ad campaign. I think music's probably fifty percent of the overall effect of the commercial, nowadays. Whereas in the past, those
day and age, you know, we're so bombarded with advertising that that music works on a a more emotional more subtle level. I always go back to
pop promos, in a way. There's visuals, and there's music, and there's not wordy
such and such a client, they might send the scripts, and, given my background as a producer, that's helpful for me, because I can tend to visualise, I have a good idea what the what the finished commercial will look like from a script. It's not always the case because you can get directors who, you know, move the script on a lot, but I like to think with my experience and my background I can, you know, I am able to visualise the end product when I see a script. But I always try and get in there with a meeting

with the creative team and see what they're trying to achieve, mood boards, reference tapes, that kind of thing .. have a look at the director's showreel, you get a feel for, you know, how the finished commercial might look, if they've shot something obviously have a look at the rough cut. I mean M&S is
of interesting concept, but again they'll look for months before they'll decide on a track, then they'll film to
decide on a track, then they'll film to a, you know, a given track, and they'll do it
music a lot more upfront. And that's [REMOVED] the ad agency, I kind of like the way they work, and you feel like you have more of a role in the process. You know, and the song
the process. You know, and the song can dictate the look of the visuals, you know, which is unheard
of the visuals, you know, which is unheard of, for the music to drive the visuals, it's usually the other
usually the other way around. The visuals are shot and then they think, 'oh well, a bit of music now'. So it's interesting to
something with a camcorder where they edit it together, put a track on, and it gives you, kind of, the feeling of the final commercial. Or what is sometimes called
market in a research group and say 'if we produced a Marks and Spencers commercial for Christmas, and it kind of had these values, would you – what would you
a very gentle, languid instrumental, which allowed the wordy voiceover, you know 'this is not
we call it. You know, it allowed that dialogue to work over music. Also the music was very
to work over music. Also the music was very sumptuous and .. kind of

recognisable, it
By The River'. Which is a bit more contemporary. And they're now looking
or three .. because they work. If you've got a rough cut and you're playing tracks to it, you can tell what works and what doesn't instantly.
C – and you frontloading the
ve had. I mean maybe they'll know it's an instrumental or maybe they want lyrics
it's an instrumental or maybe they want lyrics with a particular reference point, so I'll search either
a particular reference point, so I'll search either by title or by lyrical content, see
ll search either by title or by lyrical content, see if that's the
that's the case, otherwise instrumentally, they might need a .. there
sync points in there, where they might need the track to build up or break down .. very rarely
the track to build up or break down .. very rarely is it a
very rarely is it a constant, monotonous, you know, same level
rarely is it a constant, monotonous, you know, same level, it
a constant, monotonous, you know, same level, it usually has .. product arrives
product arrives and things and lifts at the end, or you know, the
product, the product arrives and there's a big build at the end, or vice versa. So there
vice versa. So there's always a build up or a break down required
always a build up or a break down required in there at some

on it, and they want something that stands out in the ad break. So Iron Maiden, perfect, you
one cd is kind of 70s cheese, which is all the guilty
cheese, which is all the guilty pleasures M&S type effects, and this one's 80s
Iron Maiden track, was because when we put it to the visuals, it didn't feel like an ad, it felt like a an art installation or a bit of student film. So, you know, it just
student film. So, you know, it just stands out in the ad break and it gets the attention
in the ad break and it gets the attention and gets the product noticed
it gets the attention and gets the product noticed. Think of the gorilla ad
on there as well. 'In The Air Tonight's bit of a cheesy number from yesteryear but it's certainly getting
colour of the Cadburys thing. And I think you get the Pint and a Half Productions at the beginning, you get the Cadbury thing at the end, but nobody seems to take that information away, it's more 'have you
I go back, you know, reference points like Magic Moments – Quality Street, I don't
fifteen twenty years ago. Yet nobody wants to license Magic Moments because they all think of the Quality Street campaign. So once a big song
talking about an ad. the M&S Christmas ad, last year, where Dame Shirley Bassey recorded
D – (21:39) Not really, I mean if it's gone on air then it very rarely gets changed. It's very expensive to
really want to be raising. But certainly, in research groups, when ad agencies test a commercial, the music track in research groups and consumers, you know, the

research group consumers say, you know, ‘we don
held up a hundred percent. And a lot of ad agencies will say that to their clients, they’ll say ‘ok, well the research groups didn’t like the music, at least they commented on the music, they noticed the music had an effect you know. And it made them look at the tv’, or whatever, or maybe they say ‘we knew that they weren’t going to like the music and they’re not supposed to like the music’, you know, maybe it’s a juxtaposition between visuals and music. but what tends to happen
always want to do something radical. Something that’s never been
something radical. Something that’s never been done before. Something that stands out from
been done before. Something that stands out from everything else in the ad break. The client will want something
bit of electronica that’s so recessive you don’t really notice that that there’s music in the ad. It’s just there to
s music in the ad. It’s just there to carry the ad along, and it’s a constant
two, and I mean a lot of tracks fall between what the agency would really like to see on an ad and .. because they’re just
in, I kind of aware .. what they’d like on the ad, but also what the client
d like on the ad, but also what the client will buy into. Because ultimately it’s the
ones paying for the music. so at the back of my mind when ad agencies say ‘yes, we want something, you know, that we’ve never heard on air before, that’s loud, fast and
going to put people off. So, yes, there’s kind of two different clients, for me, in a way, there’s the, you know, the advertiser, and there’s the ad agency. And you have to please both of them. But also, with music, it
want that on the ad. You get a creative director their boss, who’s probably a

generation older, who wants something he's never heard on an ad before, so it stands out in the ad break and gets noticed, and then you've got
Sheffield who's into Madness. And you've got to find one track which all those people will buy into and say 'yes', you know, 'we want this track on our ad'. So it is difficult at the best of times. (27:14) you know, it
s split into, kind of 'in your face' music on that side, and more
music on that side, and more recessive, slow, recessive music on that side. A to
instrumentals, soundtracks, and kind of A to Z of quiter, recessive stuff. That used to be the
the [REMOVED] controlled compositions?
D – yes, it's stuff that I (31:51) think is .. sync-friendly, is suitable for ads in
51) think is .. sync-friendly, is suitable for ads in some way, shape or form. [ah ok]. So it's
the mental process of thinking 'well, would it work for sync, if so in what kind
would it work for sync, if so in what kind of aspect would it work?' so this is my first
simple search by music style, mood, title, artist or lyrics. Or
t they?
D – yes. and you've got mood, you've got your uplifting
mood, you've got your uplifting and aggressive, childhood, driving, ethereal
ve got your uplifting and aggressive, childhood, driving, ethereal, fantasy, sexy
got your uplifting and aggressive, childhood, driving, ethereal, fantasy, sexy,
your uplifting and aggressive, childhood, driving, ethereal, fantasy, sexy,

uplifting and aggressive, childhood, driving, ethereal, fantasy, sexy,
and aggressive, childhood, driving, ethereal, fantasy, sexy,
C – and these are
aggressive, childhood, driving, ethereal, fantasy, sexy,
C – and these are based
the new age box and scary horror, or whatever, they'll pop
1980 and 2000, that's uplifting, .. uplifting .. oh god can't
and 2000, that's uplifting, .. uplifting .. oh god can't do
medium tempo, [200] well spotted, mood uplifting, we get 439. 422 … hang
three instances of the word love in that track, see all
go in with a cd, sit down with the creatives, sit down with the visuals in an edit suite, play it to them, talk about why they think
over or email a track, you don't know if they've even played it to picture, or if they've cued it up correctly. And it's just a
works and what doesn't. And if there's a particular direction that they want to take, and hear more tracks in
get asked for (40:52) Summer, anything with sun and shine or .. that kind of thing
Yes, sometimes they're mute, sometimes they've already got a track on there, you'd be amazed
like this one – hold on .. an ad comes over with a track on, they say 'we can't
the money t- you know, they can't beat the track that was already on there and the client will be

[REMOVED] HD commercial with the Iron Maiden track crudely laid to picture. It's not the final
the creative director who did the drumming gorilla thing for Cadburys and the idea
more than an ad. And the Iron Maiden track kind of plays along with that idea. You won't have seen
I tried various tracks and 'a whole sense of wonder' I think the lyrics did
a whole sense of wonder' I think the lyrics did it kind of loosely .. loosely fit the visuals .. but
did it kind of loosely .. loosely fit the visuals .. but it's just a
s just a question of playing different tracks and seeing how they work and then cueing the song
and seeing how they work and then cueing the song up and eventually you get there. [right] But it could've been any one of a number of songs, it was just getting the agency to buy into the idea that I'm .. well .. it
we can do, we can sync up video and audio quite easily on the Mac
you know, if there's a particular bit of a song we can lay it back
know an upcoming release schedule, then you're not really listening to the brief, and people won't come
know, burn a pitch cd and half the tracks don't meet the brief. Or don't work. Then
do send the cd over the first five on the cd are the ones that work the best. And maybe throw in a
that work the best. And maybe throw in a few left field suggestions later on in the cd. But you've kind of

bit of contemporary classical and it's not until you play certain tracks against the visuals and you get in the edit suite that you can tell, you know, what kind of
and then or whatever. You can just tell, when you play music to visuals .. well given my background I
as I say I mean there are certain types of music where you can kind of think 'well that's going to have be more valuable for sync than other types of music' I mean anything that's
to-wall lyrics, I mean any rap or urban stuff very rarely gets used in advertising because there's usually a
because there's usually a voiceover on it and you can
can't have, you know, different voices competing for the attention, you know, the brand message
got to be all important. Any lyrics are kind of secondary to that. You know, they've just
secondary to that. You know, they've just got to reinforce what the ad is selling what it's saying so consequently there's not
it's saying so consequently there's not a lot of kind of rap in ads at the moment. But who knows – maybe that
you go. Lethal Bizzle. Haha. Doesn't really work for advertising.

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