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Content or context? Searching for musical meaning in task-based interactive information retrieval.

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ABSTRACT

Creative professionals search for digital music to accompany moving images using interactive information retrieval systems run by music publishers and record companies. This research investigates the creative professionals and the intermediaries communication processes and information seeking and use behaviour with a view to making recommendations to information retrieval systems builders as to the extent of relative importance of content and contextual factors. A communications model is used to suggest that the meaning of music is determined by its listener and use context, as well as cultural codes and competences. The research is framed by a holistic approach based on Ingwersen and Jarvelin's Interactive Information Seeking, Retrieval and Behavioral processes model.

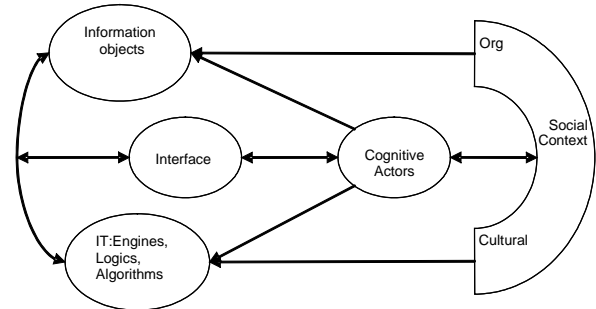


Figure 1 Interactive Information Seeking, Retrieval and Behavioral processes [2]

Categories and Subject Descriptors

H.3.3 [Information Search and Retrieval]: Search Process;
H.3.7 [Digital Libraries]: User issues

General Terms

Human Factors

Keywords

Music information retrieval, users, communication, meaning, relevance.

1. INTRODUCTION

Over the last ten years there has been an ongoing discussion in the Information Retrieval (IR) literature about the meaning of 'context' (initially known as 'situation') and how it may impinge on information seeking behaviour, as part of a turn towards users. This recognises the interactive nature of IR which is affected by the contexts in which it takes place [1]. These interactions and contexts are summed up by Ingwersen and Jarvelin's [2] model (Fig 1), which illustrates how the various elements of an interactive IR system are interdependent, and suggests that research into these systems should take a more holistic approach.

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Closer examination of context – from both the system and the user point of view – will inform research about, particularly, tasks, relevance and queries. Areas of focus include information environment, information seeking, IR interaction and query level [1]. Our research investigates information seeking by creative professionals within the music industry, and focuses on their search for music for work purposes, specifically when music is to be included in films, advertising or television programmes. There are various levels of context in this process which affect the nature of the retrieval: the intended meaning of the music in its role and how this relates to the query formation; how the query matches the IR mechanisms that are used and organization of the collections that are being searched; the user context or work role; the music's contextual relationship with the visuals and wider cultural contexts; and the relevance decisions of the users relating to the eventual use of the music. This paper presents early results of an ongoing study of information behaviour, and concentrates on users and use contexts. It is planned to investigate and evaluate systems as part of this research, which attempts to reflect a holistic approach [2], in order to present an overview of music search behaviour of a currently under-researched community of specialist creative professionals.

2. APPROACH

The music industry is a network which is involved in exploiting existing compositions and recordings by manufacture, distribution, sales and marketing of CDs and, increasingly, downloads to the consumer but also by 'secondary exploitation' which involves encouraging the use of material in films, commercials and on radio and television as well as in clubs, over the internet and live (Figure 2).

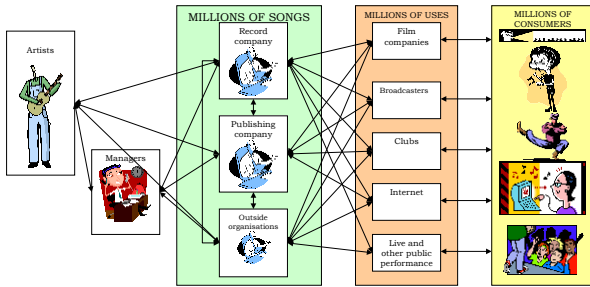


Figure 2 Music Industry Owners, Users and Consumers

There is constant communication between the Music Users and the Music Owners relating to this exploitation and major record companies and publishers employ departments of specialists concentrating on this area, which is known as synchronisation. This communication process is the focus of this research. A snowball sample [6] of experienced Owners and Users took part in face-to-face semi-structured interviews lasting up to one hour. This sampling technique allowed access to a specialist group of professionals by means of peer-recommendation. The interviews were designed to elicit information about the participants' information seeking behaviour and the processes used when they were searching for music, in this case to accompany moving images. Using subject guidelines rather than strict questionnaires allowed the researcher to follow up themes arising during the research process and allowed a flexible and informal approach which reflected the nature of the industry under examination. Interviewees included music supervisors (Music Users), who are employed to source music for films, and employees of record companies and music publishers directly involved in exploitation of music (Music Owners).

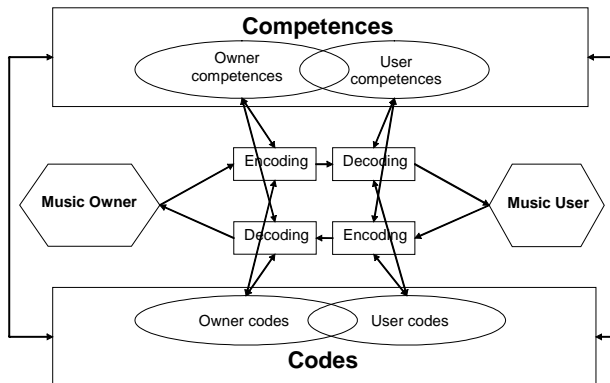


Figure 3 Reflexive communications model [3]

It is proposed in [3] that the meaning-making process between Owner and User is reflexive, depending on their relative codes and competences, which are cultural, organizational and social, and it is likely that this will relate to how successfully the systems used in the process are able to encode and decode these meanings.

For the purposes of this paper a preliminary reading of the texts of the interviews has been used to draw out broad themes relating to the importance of context in music seeking, retrieval and behaviour processes. It is planned to examine these and other related texts using Discourse Analysis, which will reveal

interpretive repertoires [9] used within this special group, which may be used to inform development of systems for retrieval in this area.

3. FINDINGS

3.1 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 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 [3, 4, 7]. 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'

is a typical example of a query that incorporates a range of affective meanings (*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.

3.2 Context

The use context, how the music '*fits*' the picture and its intended audience, is key in the process [5] and although interpretation of musical meaning is subjective, meanings do converge within an audience [8]. 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.'

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.'

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 [4]. 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 [3, 4, 7] rather than the content of the music signal itself.

3.3 Relevance

Once a selection of music has been offered to the User a decision has to be made on the final piece. There can be numerous iterations of queries between Users and a range of Owners. 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.'

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.

4. CONTENT OR CONTEXT?

While it initially appears that it is the content of the music itself that determines its use, we have shown 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. Future research will widen the sample to include broadcasters, computer games designers and those directly

involved in the music composition, recording and performance processes, analysing these and the discourses of accompanying texts such as cd sleeves and user interfaces as well as evaluating existing systems with the aim of presenting a detailed study of the music search process within the music industry.

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