

# Motivation for creating new user experiences while watching online video

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**Abstract:** Sharing and watching video content are more or less two different activities performed separately. However there is potential to bring these two activities together. In this paper, we present ongoing research with the goal of creating a more intuitive media player. The results of a survey are presented, with questions related to media sharing and the sharing of videos in particular. By asking questions about sharing, producing and watching content we try to link the answers together to an overall user experience. Based on these findings, the design of a new metadata-based media player is presented, which would allow users to share and watch videos in new ways.

**Keywords:** Sharing content, video, metadata, annotation.

## 1 Introduction

The use of streaming video on the Web is experiencing a rapid increase, with Youtube being the 3rd most visited website on the internet [2]. Most of the user involvement on video-sharing sites is limited to watching, ranking and sometimes entering comments for videos. Compared to TV guides which provide summaries and descriptions of each program, the user must usually trust the popularity or user-supplied rating of each video to find something relevant [3].

A more usable tool released recently is the “Elections Video Search” plugin by Google [1]. This gadget searches through the speeches of American politicians with the help of transcripts created through speech recognition. This sort of extra metadata may provide more precise results to user queries.

In this paper we present our survey of sharing content which concludes to our findings regarding the use of more intelligent metadata that allows users to watch content that is much more relevant, and to share content with others in a more usable way. These ideas are grounded on questions which depend not only on communities on the internet but also on the general interest of people.

The rest of the paper is organized as follows: Section 2 presents our survey and the discussion of the answers. Taking motivation from these results, Section 3 presents some basic concepts of our media player. Finally, Section 4 concludes the paper.

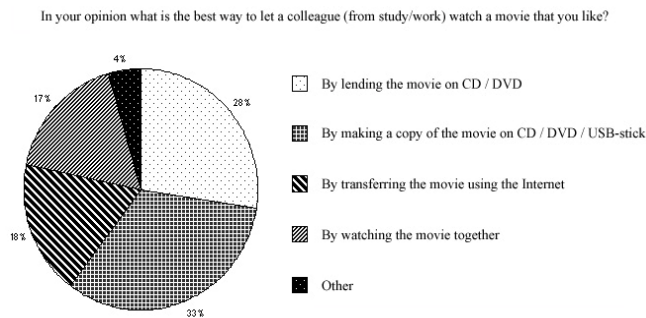
## 2 Survey on media-sharing

Our online questionnaire was open to participants for exactly one week. All questions were related to sharing in some way, with a majority of questions focusing on the sharing of video content. The survey contained 29 multiple-choice questions. It used choice modeling for presenting the answers to the questions rather than a rating scale such as the Likert scale. This forced the participants to make a conscious choice between the given options. Thus they had to make a trade-off between the costs and benefits of each answer which is an advantage that a linear rating does not provide. The survey contain questions with subjects that dealt with why, how, when and with whom people usually share media. With respect to video content the survey asked questions about the participant's prior experience with creating and sharing self-created videos. Some questions also dealt with the acceptability of commenting or annotating video content with others in different situations.

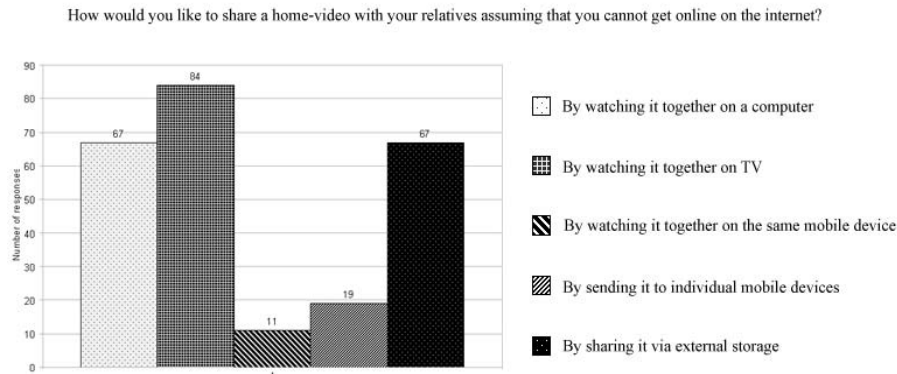
Of course we could handle just a selection of the survey questions in this paper. Some questions relevant to our idea are presented in detail while others are just presented in general in the discussion.

### 2.1 Participant profiles

The online link to the survey was distributed virally by the authors using social networking websites, instant messenger and email. This ensured that the majority of the participants were familiar with online social networking and to some degree, media sharing. The survey received responses from a total of 151 participants, of which 58% were male and 42% were female. The most number of responses came from Germany (50%), followed by India (31%) and Austria (7%). The remaining 12% came from 14 other countries. Most of the participants were in the 20-30 age group, with the youngest participant being 18 years old and the oldest being 55. Most of them were consumers of content; just a few uploaded content to websites, but we see also a lot of potential among the rest to share content on the internet.



**Fig. 1.** Survey question on sharing a favorite movie with a colleague



**Fig. 2.** Survey question on sharing of media in the absence of the internet (multi-choice)

## 2.2 Means and motivation for sharing

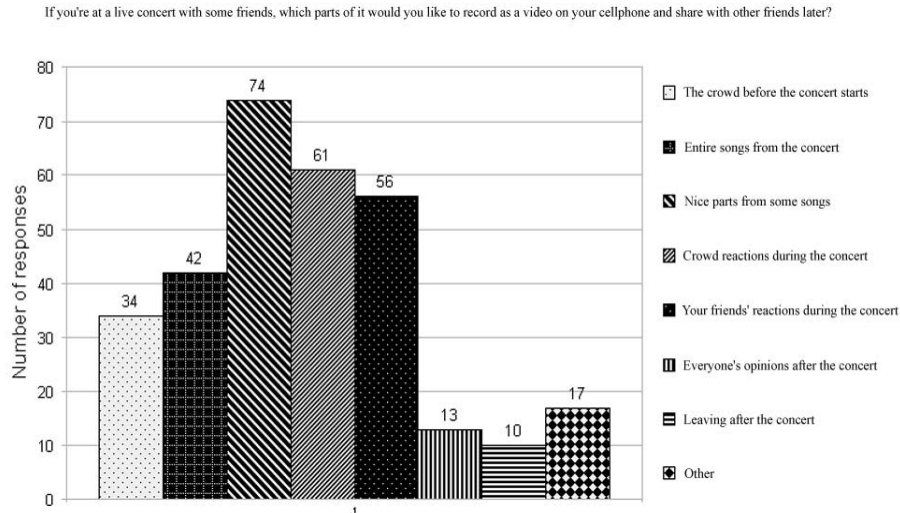
The questions in the survey presented scenarios involving the sharing of video or other types of media, and tried to find out how the participants would share content with others under some given situations. For example, participants were asked how they would share a home video with relatives, friends or colleagues. In addition, some factors were introduced in the questions to see how they shaped the responses. One question, for example, asked how participants would share media with others in the absence of the internet.

When comparing the question asking about the best way to share a movie with a colleague (see figure 1) with the question which deals with watching the video together with their relatives in absence of the internet (see figure 2) a big shift is seen from copying the movie to the experience of watching it together. In the survey we found out that personal relations and convenience play a large role in sharing. On the one hand there is a more personal and social experience and on the other hand there is the comfort of using the internet or storage devices for an easy and time-independent way of sharing.

Based on the answers to other questions, most of the motivation for sharing came from the users' need to inform or entertain relatives and friends with important events in their lives, or to simply preserve some memories or show off some creative skills. Most of the participants were reluctant to share such videos with anyone outside their inner circle of relatives and friends.

With regards to those outside this close circle, respondents were reluctant to share videos that were very personal to them (such as something involving friends/family) or videos that might have legal, ethical or moral issues with respect to sharing (such as copyrighted content). However, media from activities or events (such as vacations or parties) were the most preferred types of videos for sharing with the general public.

### 2.3 Sharing video segments



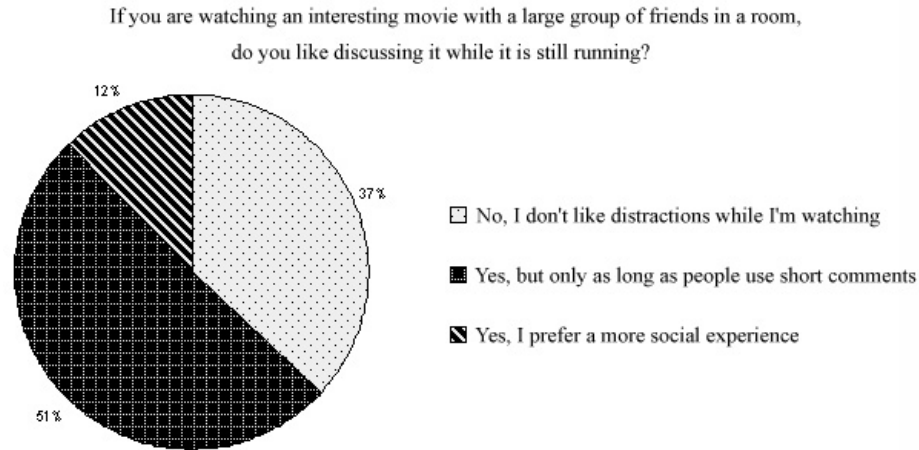
**Fig. 3.** Survey question on what part of a concert participants would like to share (multi-choice)

One of the questions in the survey asked participants which parts of a concert performance they would like to record, with an aim of sharing with their friends later (see figure 3). Most participants favored recording some nice parts from the concert rather than the full songs themselves. Thus in general, sharing small interesting segments of content are an important aspect of sharing when considering videos from social events or excursions. Also of importance were comments and reactions from their friends and from the rest of the crowd. This supports the theory that content annotation is considered to be almost as equally important by users as the content itself. In the words of one of the participants, the primary goal of sharing videos from a concert are not to document the entire concert, but to share the feeling, "Hey look I was there, and it was cool".

### 2.4 Content annotation

Some of the questions deal with communication between users about the shared content. While watching a movie with a group of friends, most users (51%) preferred to have a social experience of discussing it with others as long as everyone used short comments (see figure 4). This shows that users do not mind being disturbed while watching a video, as long as it is relevant, short, and does not interfere with their viewing experience to a large extent.

Besides that users were asked if they would not mind talking with someone else while watching a movie. The largest percentage of users answered that they would prefer to have a discussion, but only during a quiet or uninteresting part. However the second



**Fig. 4.** Survey question on discussing about a movie with friends while it plays

largest answer was that users would like to discuss something about the movie only after it has ended. This contrasts with the previous survey question where users were more open to discussing a movie while it plays. The difference in both questions was that in the first case the user was watching the movie with a large group, while in the second case the user watched the movie only with a single friend. Thus, a social situation with many people can sometimes generate more discussion while a movie is playing than a situation with just a pair of friends.

## 2.5 Survey conclusions

The results of the survey show the main factors that affect sharing. It depends on the content with whom someone shares and how much time someone wants to spend doing it. Besides that privacy was a topic in the survey, even mentioned by multiple participants while giving feedback. In this paper we couldn't discuss it adequate. While most of the participants didn't upload content on public sides, many of them were willing or have experience to share content over the internet. A quarter didn't want to use the internet, but sharing media offline in privacy mostly all do.

Summing up most users prefer not to share personal media with anyone on the internet, but rather choose to do so within their private circle of friends and family. Then convenience plays a major role in sharing of media socially, even when the sharing occurs on a very personal level. Sharing in the sense of an experience together decreases outside someone's private circle.

While sharing content from an event or excursion, most users prefer to make a snapshot of the content by highlighting certain parts of it instead of making a detailed report of it. Such a selection is easier to discuss or annotate. Furthermore in groups discussion is rather short but preferred that way, whereas the acceptability depends mostly on the type of content that is being annotated.

### **3 Metadata-based media player**

For the design of our player we highlight two conclusions which resulted from the survey: It is preferred to share snapshots of content which may be personalized further to enrich them and make them interesting for friends. So the user should be able to select and share segments of content easily, which could then be annotated or commented.

Because people prefer watching content together so that they can share their experiences about it communication while watching should be possible. This communication may either be online and offline. Dealing again with shorter segments users are more willing to take their time to watch together. Offline discussion, where communication is not real-time anymore, is even more flexible and easier to achieve.

Based on the context of most of the questions in the survey, we focus on video or audio content for our player that users like sharing with people they know.

#### **3.1 Sharing segments**

Creating metadata for content by hand is time consuming, so most content is hardly ever annotated by casual users. Youtube already offers some tools for timeline dependent annotation [10] and shows these text comments while playing the video. The selection of the range is done by setting a start and end timer by hand.

Besides that user-created content can also be automatically structured using audio and video analysis processes. For audio, BIC-segmentation [7], speech/non-speech- and audio event detection, speaker clustering [6] or speech recognition may be performed. For video content, shots and objects such as faces may be detected [4]. The resulting metadata can then be saved in an MPEG7 format [5], which is loaded by the player when requesting the media.

Showing the structural analysis data while playing the user could capture a general view of the content. Automatically generated segments boundaries could be used for selection or navigation through the video, but also to easily contribute user-generated metadata such as comments. With the help of metadata, selecting parts of the content personalizes the media and just these segments could be shared or new combined.

#### **3.2 Online and offline communication**

Online communication methods such as live chat and two-way video communication encourage a feeling of jointly viewing content. Users can express their thoughts and feelings in real-time with others while viewing content together. Both the speaker and listener roles for such communication in the video player are designed so as to not distract the users from the actual content [8].

But live communication is not always possible, so we also design offline methods for users to communicate while watching a video. Here, the communication is not realtime, and hence users can access existing comments or add their own asynchronously. Users can choose how complex or involved their communication can be. Thus the form of communication may range from something simple such as a

non-verbal 'emoticon' [9], to text or audio and video clips, or on to more advanced forms of annotation.

## 4 Conclusion

This paper presented a discussion of a survey which analyzes the characteristics of sharing media content. The results show that sharing is still a personal experience. The content must somehow relate to the user and a collective experience is favored over an individual one. Because snapshots are easier to personalize and annotate we concentrate the design of our player to give the user more information and functionality to use segments. To get a collective 'cinema-like' experience, we also design possibilities for communicating with others using online or offline methods. Then the automatic generated and user generated information are saved in one metadata file whereas the player could adjust to show just the desired one.

As the next step we will evaluate the player to see if the user accepts these additional features and how the presentation of the metadata could be designed well.

## Acknowledgments

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