

Mobile Video User Interface visualization for Sharing experience

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ABSTRACT

Mobile TV and video has become pervasive multimedia service and streaming video service has increased followed by the growth of internet speed. Mobile TV and Mobile video service will undergo similar development phase as Web video service enhanced interactivity through rating, comment. But there is no research on interface visualization sharing experience on mobile video.

In this paper it can be deduced that user's comments are level of detail expression from positive to negative irrespective of genre. We proposed efficient interface for mobile video by extracting the keyword using web site comment for more detail expression of video, and it will enhance the experience of sharing and enjoyment.

Categories and Subject Descriptors

H.5.2 [User Interface] : User-centered design

General Terms

Design, Experimentation, Human Factors

Keywords

Mobile video, Mobile TV, User Interface, Multimedia

1. INTRODUCTION

Mobile phone has been used not only for the communication but also for the entertainment purpose these days. People bring their mobile devices anytime anywhere and the demand to access the multimedia service is increasing. Along with the music and camera service, Mobile TV service is widely considered as major future growth driver in mobile multimedia market. By 2009, 69

million people worldwide are expected to subscribe to mobile television services, generating total revenue of \$5.5 billion[1]

Although DMB service, which enables users to access TV programs on mobile handset, is now commercialized in Korea, when it comes to 4G, it is expected that video streaming service will be more popular due to the radical growth of mobile internet speed. By 2010, it is expected that the mobile internet will provide environment which enables data transfer rate to be in the range of 100 Mbit/s to 1 Gbit/s, both indoors and outdoors.

In the web, video service has increased followed by the growth of internet speed. Mobile TV and Mobile video service will undergo similar development phase as Web video service did. Youtube and Daum, UGC services in Korea, allow people to watch user contributed video as well as rate them and leave comments, thus making users communicate more through enhancing the interactivity with contents. This can be viewed as manifestation of a function of social TV, but has transformed to fit in web environment. A function of social TV implies that people would feel more fun by sharing contents with other people. There is no doubt that this kind of interactivity should be applied in mobile environment. Service of Youtube mobile page is possible to read and leave the comment, but user feel very challenging to do it through mobile device because of small size of screen. Researching on mobile interface to make user feel easy to share the experience on video contents is needed considering small screen size.

There are some researches for shared experience while watching the mobile video contents. One of the researches on shared experience on mobile is chatting while watching mobile video[5], and information visualization to simplify the video selection using social network[6]. But none of them has research on interface for opinion visualization while watching the mobile video contents.

In this paper, we discuss the form of interface visualization for users opinion during video consuming on future mobile device to promote user's experience for sharing and participation for rating so that could enhance the enjoyment for watching video on mobile.

2. USER INTERFACE DESIGN

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In this paper, reactions of users have been examined by investigating replies of web video services which are linked from the main page of Youtube. Videos are selected regardless of genre and are less than five minutes in length. Average number of inquiries, replies, and ratings are 1,44,191, 3,417, and 4.5 respectively.

Table 1. videos from youtube and rates

| | views | comment | rate | rating |
|---------|-----------|---------|------|--------|
| M/V | 1,006,566 | 2,853 | 4.5 | 3,122 |
| trailer | 2,048,956 | 6,343 | 4.5 | 6,343 |
| tv show | 1,667,099 | 5,560 | 4.5 | 4,757 |
| UGC(1) | 1,852,674 | 2,089 | 5 | 3,816 |
| UGC(2) | 645,658 | 242 | 4 | 267 |
| average | 1,444,191 | 3,417 | 4.5 | 3,661 |

From five videos which are linked from main page of Youtube, 100 replies, which are thought to be valid, excluding spam are examined to find out what users want to express. As a result, replies can be classified into 5 categories; hate, bad, neutral, good, awesome.

Table2. User expression on the web

| | | hate | bad | neutral | good | awesome | |
|---------|-------------|------|------|---------|------|---------|---|
| M/V | singer | 0.16 | | 0.08 | 0.07 | 0.30 | 1 |
| | song | | | | 0.02 | 0.26 | |
| | video | 0.01 | 0.02 | | | 0.7 | |
| trailr | actor | 0.01 | | 0.32 | 0.03 | 0.13 | 1 |
| | movie | 0.15 | 0.05 | | 0.05 | 0.26 | |
| Tv show | | 0.13 | 0.03 | 0.1 | 0.16 | 0.67 | 1 |
| UGC (1) | participant | 0.04 | 0.01 | 0.14 | 0.03 | 0.59 | 1 |
| | song | | 0.02 | | 0.01 | 0.07 | |
| UGC (2) | participant | | | 0.10 | | 0.30 | 1 |
| | song | 0.23 | 0.01 | | | 0.36 | |

By examining comment from mobile video services, it can be deduced that users' comments are level of expression from positive to negative irrespective of genre. But they can be differentiated from ratings since they express more details about a video while ratings express only positive and negative comments about a video. Examine every comment by morpheme, iteration of the specific subject are shown. Extract the most frequent used subject as key word, we found in a music video, there are comments about artist, music, and pictures. In UGC(User Generated Contents), there are comments about participants and qualities of video contents. Finally, in a movie trailer, there are comments about actors as well as movie itself.

In the 5 categories of expression, neutral represents any comments which describe details about video and other related contents rather than describing positive or negative opinion. In a similar way that enables people leave comments about videos on the web, mobile service providers can deliver user-friendly interface by allowing users to assess 'keywords' related to videos, thus making them easy to express.

The user interface is designed based on the resolution and size requirement for mobile phones, with a 320x240 pixel resolution. Figure(1) is one of example expressing this idea.

The interface which is proposed in this thesis is designed to make users express emotions in a simple way, by listing emoticons which represents positive from negative right after keywords which can be issues within relating video contents. This interface is optimized in touch-interface and has focus on allowing users to express their opinion by single touch.

No more than two Keywords which are extracted from morphological analysis are provided, and levels of emoticon consist of 4 stages; hate, bad, good, awesome. Reasons of using emoticons rather than words are to accept various reactions about keyword which are brought to users' mind without any restraints. Data input from users then differentiate sizes among emoticons, thus making users aware of dominating opinion more quickly, even in a small screen.

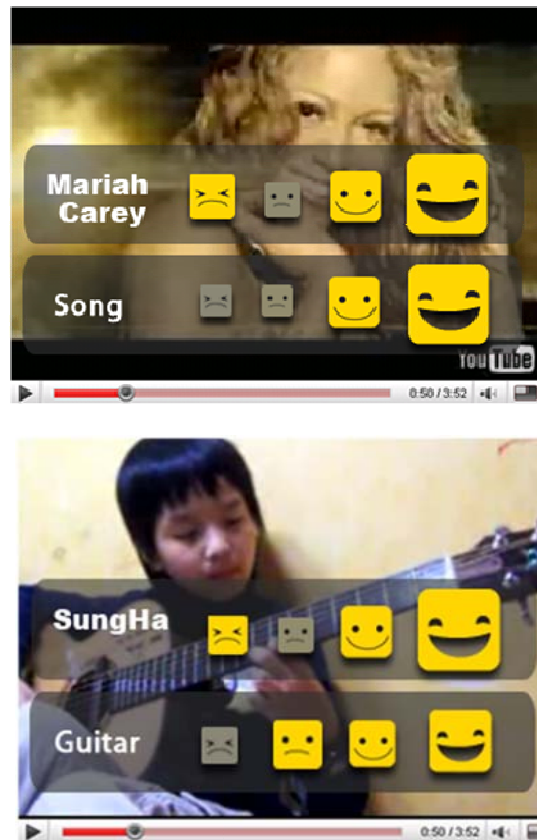


Figure 1. example of interface for video consuming on mobile

This kind of interface, which allows users to express their opinion by single touch in a mobile, is expected to enhance video viewing experience compare to that of web which requires ratings and replies.

In the future, an evaluation and detailed user study will be conducted to verify the benefits of such design.

3. SYSTEM DESCRIPTION

The proposed Mobile video interface will use on web site for mobile. On the web, the server gathered the user comments, and when it accumulates certain amount of comments, they extract the keyword from the comments by morphological analysis. These keyword will apply to the very same video that shows on mobile website which could express the user opinion on the video in a simple and unique way.

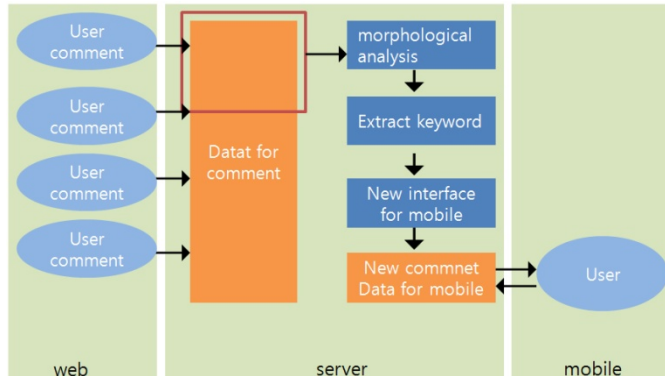


Figure2. system flow chart

4. CHALLENGES & FUTURE WORK

Since evaluations have to be made with respect to keywords from video contents, it is essential to know how morphological analysis can extract meaningful keywords related to video contents. Moreover, researches should be made about how many comments we should use from the web to extract more correct keyword. Thus, the system should extract keywords that don't deviate from true intention of users.

And the users' evaluation about interface should be made. Interface should be evaluated in users' point of view about whether this can increase participants of users and bring more fun. And the rate of users' participants compared to views need to be assessed to confirm that whether this is the effective interaction-based interface in the limited environment. The examination about users also should be conducted to find out whether this interface makes users feel a lot easier to use and participate more compared to sites which provide similar services these days.

If this interface can accept users' opinion more effectively with a simple touch, beyond mobile platform, this research can be used in IPTV providing new way of interaction method between

5. CONCLUSION

This Paper present efficient interface visualization for video consumption on mobile device applied shared experience on the web. We proposed interface which allows user to express their

opinion on mobile video consumption by single touch, and the extracted keyword is from the comment on the web. By fulfilling user's demand for sharing experience on mobile video ,it will enhance video viewing experience and enjoyment in the future.

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