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Mobile Social Interaction TV

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Abstract*— the rapidly increasing power of personal mobile devices (smartphones, tablets, etc.) is providing much richer contents and social interaction to users on the move. But the limited battery life time of mobile devices and unstable wireless connectivity make the highest possible quality of service experienced by mobile users not feasible. The recent cloud computing technology with its rich resource to compensate for the limitation of mobile devices and connections can potentially provide an ideal platform to support the desired mobile services. Tough challenges arise on how to effectively exploit cloud resource to facilitate mobile services, especially those with stringent interaction delay requirements. This paper aims to design a novel mobile social TV system, which can effectively utilize the cloud computing paradigm to offer a living room experience of video watching for desperate mobile users with spontaneous social interaction. It also takes into consideration the battery efficient, portable and transcoding capabilities. Voice chat, use of peer-to-peer technology and video compression are salient features. It makes use of PaaS (Platform-as-a-Service) and IaaS (Information-as-a-Service) cloud.

***Keywords*— cloud computing, social TV, PaaS, IaaS, social interaction**

I. INTRODUCTION

CloudMoV, which can effectively utilize the cloud computing paradigm to offer a living-room experience of video watching to disparate mobile users with spontaneous social interactions. In CloudMoV, mobile users can import a live or on-demand video to watch from any video streaming site, invite their friends to watch the video concurrently, and chat with their friends while enjoying the video. It therefore blends viewing experience and social awareness among friends on the go. As opposed to traditional TV watching, mobile social TV is well suited to today's life style, where family and friends may be separated geographically but hope to share a co-viewing experience.

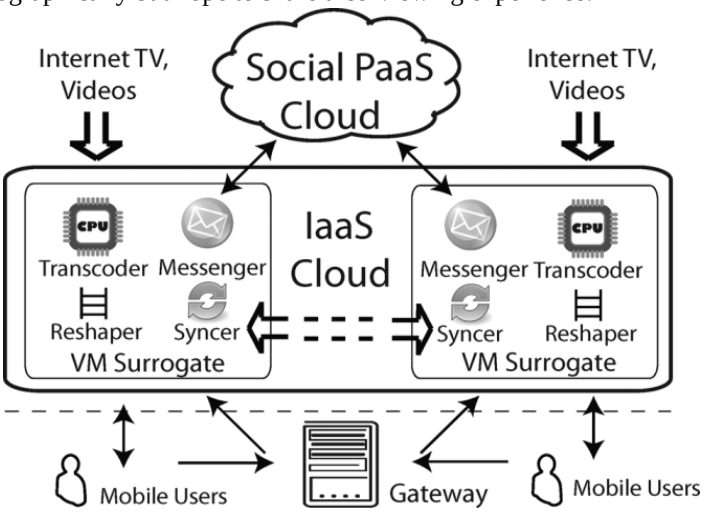

Fig. 1 The architecture of CloudMoV

II. SYSTEM ANALYSIS

A. *Existing System*

CloudMoV is a cloud-based novel Mobile Social TV System. It utilizes both PaaS and IaaS cloud services for the video watching experience. Each user is assigned a surrogate in the IaaS cloud for video downloading and social exchanges on behalf of the user to offer a considerable streaming quality. 3G wireless networking is more widely used than Wi-Fi based transmission. A burst transmission mechanism is used for streaming from the surrogate device to the mobile devices. Mobile users can import a live or video on demand to watch from any video streaming site, invite their friends to watch the video concurrently and chat with their friends while enjoying the video. It therefore blends viewing experience and social awareness among friends on the go. Textual chat messages are adopted rather than voice messages in the system. Data storage is done with Bigtable. This is provided by the PaaS cloud. The client module can run on any mobile devices supporting HTML 5, including Android phones, iOS systems, etc.

1) *Drawbacks of Existing system*: The user interface design is not remarkable. The clutter and other human factor issues need to be addressed. Genre seems to play an important role in the shared video experience. But it does not explain how techniques for reducing distraction interact with the genre. Another limitation in this approach is lack of availability of bandwidth between the content generator and the services in the cloud.

B. Proposed System

To enable a living room experience of video watching considering voice messages and video chat along with textual chat. Peer-to –Peer technology is introduced for sharing videos among users. Compressing videos while transcoding is a new feature. Enables sharing of encoded streams(in the same format or bitrate) among surrogates of different users.

1) *Advantages of Proposed System*: Video compression enables reduction in the encoding time. P2P technology supports high quality streaming video. Battery consumption is reduced to a greater extent. Distractions are handled using simultaneous video watching and chatting. This is bridged by the inclusion of commercial breaks.

III. CONCLUSIONS

Although many mobile social or media applications have emerged, truly killer ones gaining mass acceptance are still impeded by the limitations of the current mobile and wireless technologies, among which battery lifetime and unstable connection bandwidth are the most difficult ones. It is natural to resort to cloud computing, the newly-emerged computing paradigm for low-cost, and agile, scalable resource supply, to support power-efficient mobile data communication. With virtually infinite hardware and software resources, the cloud can offload the computation and other tasks involved in a mobile application and may significantly reduce battery consumption at the mobile devices, if a proper design is in place. The big challenge in front is how to effectively exploit cloud services to facilitate mobile applications. Efficient synchronization mechanisms are proposed to guarantee that friends joining in a video program may watch the same portion (if they choose to), and share immediate reactions and comments. Although synchronized playback is inherently a feature of traditional TV, the current Internet video services (*e.g.*, Web2.0 TV) rarely offer such a service. Efficient message communication mechanisms are designed for social interactions among friends, and different types of messages are prioritized in their retrieval frequencies to avoid unnecessary interruptions of the viewing progress. Textual chat messages are adopted rather than voice in this design believing that the text chats are less distractive to viewers and easier to read/write and manage by any user. A PaaS cloud is used for social interaction support due to its provision of robust underlying platforms (other than simply hardware resources provided by an IaaS cloud).

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REFERENCES

[1] Jason Flinn and M. Satyanarayanan, *Energy-aware adaptation for mobile applications,* in Proceedings of the seventeenth ACM symposium on Operating systems principles, ser. SOSP '99, 1999, pp. 48-63.

[2] Toon Coppens, Lieven Trappeniers, Marc Godon, *AmigoTV: towards a social TV experience,* in Proc. Of EuroITV, 2004.

[3] Lora Oehlberg, Nicolas Ducheneaut, James D. Thornton, Robert J. Moore, Eric Nickell Stanford University, Palo Alto Research Center, *Social TV: Designing for Distributed, Sociable Television Viewing,* 2006.

[4] Justin D. Weisz, Sara Kiesler, Hui Zhang, Yuqing Ren, Robert E. Kraut, Joseph A. Konstan, *Watching Together: Integrating Text Chat with Video,* CHI 2007 Proceedings, April 28-May 3, 2007, San Jose, CA, USA.

[5] Lynne Baillie, Peter Fröhlich, Raimund Schatz, FTW (Telecommunications Research Center Vienna), *Exploring Social TV,* Information Technology Interfaces, 2007.ITI 2007, 29th International conference on June 2007.

[6] Mahadev Satyanarayanan, Paramvir Bahl, Ramon Caceres, Nigel Davies, *The Case for VM-based cloudlets in Mobile Computing,* Pervasive Computing, IEEE(Volume:8; Issue:4), Dec 2009.

[7] Rafael Pereira, Marcello Azambuja, Karin Breitman, Markus Endler, *An Architecture for Distributed High Performance Video Processing in the Cloud,* Cloud Computing (CLOUD), 2010 IEEE 3rd International Conference on July 2010.

[8] Zixia Huang, Chao Mei, Li Erran Li, Thomas Woo, *CloudStream: Delivering High Quality Streaming Videos Through a Cloud-based SVC Proxy,* INFOCOM, 2011 Proceedings IEEE.

[9] Wenwu Zhu, Chong Luo, Jianfeng Wang, Shipeng Li, *Multimedia Cloud Computing,* IEEE Signal Processing Magazine (Volume:28; issue:3), May 2011.

[10] Yu Wu, Zhizhong Zhang, Chuan Wu, Member, IEEE, Zongpeng Li, and FrancisnC.M. Lau, Senior Member IEEE, *CloudMov: Cloud-based Mobile SocialTV*, IEEE Transactions on Multimedia, VOL.15, NO.4, JUNE 2013.

