Proceedings of the
FTRA AIM 2012
The 2012 FTRA International Conference on
Advanced IT, engineering Management
for Industrial Technology

February 6~8, 2012, Hana Square, Korea University, Korea
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Development for 3rd Party based Smart Web TV Service Support Platform using Cloud

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Abstract

Commercialization of real-time IPTV has brought the evolution of IPTV services. As a result, it has been developed to Open IPTV which is required open interface. In Open IPTV, consumer is not only use but also generate the contents. So, prosumer which means consumer and producer’s compound is appeared by Open IPTV. In the existing IPTV service architecture, however, there are disadvantages to provide open interface for Open IPTV. Therefore, we propose 3rd party based smart web TV service platform to support prosumer using cloud and develop prototype to solve that problem.

Keywords: Open IPTV, Prosumer, Smart Web TV service, 3rd Party Support Platform

1 Introduction

After commercialization of real-time IPTV, it has evolved and started Open IPTV. In the Open IPTV, consumer’s concept is changed to prosumer. In other words, user is not only use the contents which are provided by IPTV service provider, but also generate and share their own contents. However, the existing IPTV service has many limitations to provide functions for Open IPTV[1].

In this paper, to overcome above problem and provide prosumer concept, we propose 3rd party based smart web TV service platform using cloud. It is a service to share and broadcast user contents using cloud hosting resources, we define prototype to be interlocked among IPTV service provider and cloud hosting resources for broadcasting.

2 Related Work

2.1 Features of Open IPTV

Open IPTV has 3 features as following. First, it provides Open API and it can make that users participate in content and application production. It can be effect cost cutting for content supply and demand. And user also can make application themselves if they need particular one. Second, Open IPTV provides profit opportunity to developers and producers. Because content which created by users can be sold through open market without constraints. It attracts participation from user to produce development and extends user market for choosing contents. Third, Open IPTV can provide new experience to user through various devices such as PCs, smartphones, internet telephones and etc.

2.2 Disadvantages of Open IPTV

However, there are some problems as following. Contents have different qualities, because it is made by numerous producers include service user. And interface for Open IPTV is complicated than the existing IPTV. Furthermore, it requires enough devices and network performance to operate simultaneously many services. So, it needs to overcome above disadvantages and provide differentiated service in the Open IPTV.

3 3rd Party Support Platform Prototypes

In this section, we propose a prototype definition to support service user that has meaning with prosumer and 3rd party support platform[2].

This system is a model to provide cloud resources on IPTV service provider side. And it is interlocked between IPTV system and cloud resource hosting which needs to broadcast the contents.

3.1 Service Scenarios for 3rd Party Support

The scenarios of 3rd party based support platform for smart web TV is divided into three parts as following. They are management of 3rd party group, content
hosting of 3rd party group and content transmission control on 3rd party support platform.

First, management of 3rd party group includes entire processes for registration and authentication to use cloud resources which is managed by smart web TV service provider through 3rd party support platform.

Second, contents hosting of 3rd party group includes entire processes for user generated content delivery to from users to service provider and broadcasting program organization. This function is used by only authenticated users and groups.

The last one is content transmission control on 3rd party support platform. It includes content transmission and EPG (Electronic Program Guide) based broadcasting program organization and it can be operated after all of content authentication processes are done. Furthermore, most effective transmission path will be provided to service user through network monitoring.

Finally, service users can watch the contents which are uploaded by service users, it cannot broadcast to others without content authentication from service provider. In other words, the contents which are authenticated by service provider can only provide to other users.

3.2 Development of 3rd party support platform

Developed prototype of 3rd party support platform consists of five menus. They are 3rd party group, 3rd party group authentication application, smart web TV manager, EPG, and Watching.

Menu for 3rd party group is used to share the generated contents by service users. Smart web TV provider can do supply and demand through this.

Representative of groups requests hosting services and be authenticated by service provider through 3rd party group authentication menu. After getting permission from service provider, groups can use hosting service.

Smart web TV provider manager menu provide to manage network, cloud resources and etc. Service provider wants to monitor such as network traffics and usage of cloud resources for most optimized service through this.

Service users can check program broadcasting sequences through EPG menu. Although the contents are uploaded by service users, it cannot broadcast to others without content authentication from service provider. In other words, the contents which are authenticated by service provider can only provide to other users.

4 Conclusion

In IPTV architecture which has been evolved to Open IPTV, Open and standardized interface is emphasized to support 3rd party. However, the existing IPTV service architecture is difficult to support open interface.

In this paper, we propose 3rd party based support platform and prototype is defined and developed for participation of service users to generate and share their own contents. This system is expected to give contribution that service users can work by prosumer.

Acknowledgement

The research was one of KOREN projects supported by National Information Society Agency (11-951-1-001) and it also was supported by the MKE(The Ministry of Knowledge Economy), Korea, under the ITRC(Information Technology Research Center) support program supervised by the NIPA(National IT Industry Promotion Agency) (NIPA-2011-(C1090-1111-0001)).

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