Optimizing Streaming Of Web Based Advertisements With Personalized Interest And Content Based Mapping

Mr. T. Siva kumar & Mr. D. Praveen kumar

School of Computing Sciences, Hindustan University, Chennai

ABSTRACT

In the new technological context of interactive digital (IDTV), traditional TV spots are expected to be replaced by interactive applications. The advent of the IDTV supports not only the broadcast of higher quality multimedia content but interactive applications that can be locally executed as well. Interactive applications propose a new TV advertising Architecture inspired by the philosophy and business models of online advertising. Business relationships in the online advertising field involve two main roles: PPC and PPI are two widespread Internet advertising business models. In PPC, advertisers only pay website's owners (publishers) when a user actually clicks on their ad. In PPI, website's owners are paid each time the advert is displayed, whether or not the visitor clicks on it. Personalization and content awareness are the two main stays of our approach that allow advertisers to have more efficient campaigns focused on a targeted audience. Content awareness and personalization are based on semantic inferences that can be obtained over an ontological structure that formalize and model the TV content field. Since managing this kind of structure requires higher computational power (not available in current STBs), in the proposed scheme where both an external server and the subscriber's STB cooperatively works. Subscribers will receive more advertisements while they are watching TV, whenever they change the channel, when the STB is turned on. As a value-added factor, this proposal supports both personalization and content awareness. Grouping of advertisements is called executed. This helps the user to know the recent updates of the field that are interested. Which provide the user to get more information.

Index Terms—Content awareness, interactive digital TV (IDTV), personalization, sponsored advertising, Ontology Structure, Ranking Process.

1. INTRODUCTION

Business relationships in the online advertising field involve two main roles: On the one hand, there are the publishers, who display advertisements on their websites, and on the other hand, there are the advertisers, who pay the publisher to display the ads. Pay per click (PPC) and pay per impression (PPI) are two widespread Internet advertising business models. In PPC, advertisers only pay websites' owners (publishers) when a user actually clicks on their ad. In PPI, websites' owners are paid each time the advert is displayed, whether or not the visitor clicks on it [1]. Advertisers do not usually pay publisher directly but by means of a third party company or advertising agent [2]. Users (publishers) hire space in their websites, and this third party is responsible to fill them up with adverts that are carefully selected according to the website's content. In fact, and because of this contextual awareness, companies like Google, yahoo, and Microsoft are the most popular agents exploiting this schema by means of their search engines. Additionally, new technology has made possible interesting changes in the Web advertising field, where simple banner and sidebar ads have been progressively replaced by more sophisticated pop-up, pop-under, or floating ads. Thus, online advertising success may be ascribed not only to technology improvements but also to the reduction of viewing TV commercials, partnered with the rise of users turning to the Web to watch audio and video segments. This social change has promoted a natural evolution for the shift of advertising from television to the Internet.

However, technology has also transformed the traditional TV receiver into a communication center. The advent of the interactive digital TV (IDTV) supports not only the broadcast of higher quality multimedia content but interactive applications that can be locally executed as well. This interaction covers from low levels, where interaction is wholly local between applications and viewers, to

high levels, where interaction involves communication with program providers by means of a return path. Obviously, these new technological possibilities will change the way we enjoy TV, and it also will have collateral effects, like a great impact on the TV advertising field [4]. In fact, traditional TV spots will probably evolve from audiovisual messages to applications with which viewers will interact. These applications will run on the IDTV receivers and allow viewers to learn more about the products by means of virtual visits, making appointments with sellers, appealing games, etc. Taking advantage of this technological evolution, we propose to enrich TV advertising [5] learning from the lessons given by the online advertising campaigns [13]. Our approach, inspired by the Internet marketing philosophy, proposes an IDTV advertising architecture based on both PPC and PPI business models. There is also an advertising agent who continues playing an intermediate role but now between advertisers and IDTV providers. In this scenario, a new actor comes up to participate in the scheme: The TV viewer who enables TV advertising and interacts with the new TV spots (interactive applications instead of traditional multimedia content).

1.1 Problem Statement

Publishers, who display advertisements on their websites.PPC and PPI are two widespread Internet advertising business models. In PPC, advertisers only pay websites' owners (publishers) when a user actually clicks on their ad. In PPI, websites' owners are paid each time the advert is displayed, whether or not the visitor clicks on it. Advertisers do not usually pay publisher directly but by means of a third party company or advertising agent.

1.2 Objective of the Work

In the proposed system, we collect personal satisfaction of programs during the registration as well as Content based advertising categorization. So that relevant advertisements are broadcasted. Grouping of advertisements is called executed. This helps the user to know the recent updates of the field that are interested. Also by dividing the advertisement like web content and Individual personalization which provide the user to get more information.

2. Related Work

The arrival of digital and interactive television has reinforced the efficiency problems the classical 30-s spot used to have [4]. To have a huge amount of channels entails a great competition in the advertising market to catch the attention of a viewer who tries to avoid commercials by switching channels. IDTV opens the door to advertisers to offer additional information to the audience with the aim to have more effective advertising schemes. These opportunities are analyzed in [6] by the advertising professionals in Belgium, although it can be easily extrapolated to other countries. Personalization is said to play an essential role in the TV advertising market: Being able to offer commercials that are really interesting to the user is the most effective schema that can be imagined. If advertising is tailored to the taste of the audience, 1) viewers will be less inclined to tune away or skip commercials, and 2) advertisers will be ready to pay premium rates to programmers.

2.1 Demerits of Existing System

We're not allowed choose the advertisements that want to be published. Publishers, who display advertisements on their websites. Pay per click (PPC) and pay per impression (PPI) are two widespread Internet advertising business models. In PPC, advertisers only pay websites' owners (publishers) when a user actually clicks on their ad. In PPI, websites' owners are paid each time the advert is displayed, whether or not the visitor clicks on it. Advertisers do not usually pay publisher directly but by means of a third party company or advertising agent. Also the Ranking process is implementing by using number of hits concepts. So that the user want make more search to find the exact video they wanted.

3. Proposed System

We collect personal satisfaction (user interest) of programs during the registration as well as Content (user watching) based advertising categorization. So that relevant advertisements are broadcasted. Grouping of advertisements is called executed. This helps the user to know the recent updates of the field that are interested. Also by dividing the advertisement like web content and Individual personalization which provide the user to get more information.

3.1 Merits of Proposed System

3.3.1Context-Aware Recommender Systems

The importance of contextual information has been recognized by re-searchers and practitioners in many disciplines, including e-commerce personalization, information retrieval, ubiquitous and mobile computing, data mining, marketing, and management. While a substantial amount of research has already been performed in the area of recommender systems, most existing approaches focus on recommending the most relevant items to users without taking into account any additional contextual information, such as time, location, or the company of other people (e.g., for watching movies or dining out)[12]. We discuss the general notion of context and how it can be modeled in recommender systems. Furthermore, we introduce three different algorithmic paradigms – contextual pre-filtering, post-filtering, and modeling for incorporating contextual information into the recommendation process, discuss the possibilities of combining several context-aware recommendation techniques into a single unifying approach, and provide a case study of one such combined approach. Finally, we present additional capabilities for context-aware recommenders and discuss important and promising directions for future research.

3.3.2 Persuasiveness of Online Recommendations: A Comparison Study

As more and more online stores are providing customers with overwhelming information while the companies still faces the problem of turning browsers into actual buyers, the online recommender systems have been adopted to facilitate product search and personalized recommendations. The study will compare the persuasiveness of two different online recommender systems and the influence of product involvement using Reardon's persuasion theory. The result will provide important insight for online store designers and e-commerce participants to improve their products target and advertisement efficiency and effectiveness.

3.3.3 Compensation Models for Interactive Advertising

Due to a shift in the marketing focus from mass to micro markets, the importance of one-to-one communication in advertising has increased. Interactive media provide possible answers to this shift. However, missing standards in payment models for interactive media are a hurdle in the further development. The paper reviews interactive advertising payment models. Furthermore, it adapts the popular FCB grid as a tool for both advertisers and publishers or broadcasters to examine effective interactive payment models.

3.3.4 A Measurement Study of a Large-Scale P2P IPTV System

An emerging Internet application, IPTV, has the potential to flood Internet access and backbone ISPs with massive amounts of new traffic. Although many architectures are possible for IPTV video distribution, several mesh-pull P2P architectures have been successfully deployed on the Internet. In order to gain insights into mesh-pull P2P IPTV systems and the traffic loads they place on ISPs, we have undertaken an in-depth measurement study of one of the most popular IPTV systems, namely, PPLive. We have developed a dedicated PPLive crawler, which enables us to study the global characteristics of the mesh-pull PPLive system[11]. Specifically, our results show that 1.)P2P IPTV users have the similar viewing behaviors as regular TV users; 2) During its session, a peer exchanges video data dynamically with a large number of peers; 3) A small set of super peers act as video proxy and contribute significantly to video data uploading; 4) Users in the measured P2P IPTV system still suffer from long start-up delays and playback lags, ranging from several seconds to a couple of minutes. Insights obtained in this study will be valuable for the development and deployment of future P2P IPTV systems.

3.3.5 Towards a Standard Upper Ontology

The SUMO is an upper level ontology that has been proposed as a starter document for The Standard Upper Ontology Working Group, an IEEE-sanctioned working group of collaborators from the fields of engineering, philosophy, and information science. The SUMO provides definitions for general-purpose terms and acts as a foundation for more specific domain ontology's. In this paper we outline the strategy used to create the current version of the SUMO, discuss some of the challenges that we faced in constructing the ontology, and describe in detail its most general concepts and the relations between them.

4. CONSTRUCTION

Step 1. User Registration

User is a node from which the request is passed to the main video server. User is the client application in which the processed data will be retrieved. Before requesting the data the user wants to enter their username and password. The username and password and other information will be obtained from the user while registration phase. All the user information will be stored in database via server. This information is used for future reference.

Step 2. Server

A server is a computer program running to serve the requests of other programs, the "clients". Thus, the "server" performs some computational task on behalf of "clients". The clients either run on the same computer or connect through the network. Here the Server acts as the main resource for the client. Server is responsible for maintaining all the client information. So the server will process the user's request and get the concerned data from the database.

Step 3. User Interest

In this Phase, the user will request the video file to the server. The server will display the video file to the user. The user will choose one of the file and watch it. Here the server will also ask the user to choose the advertisement that they would like to watch or display it in the bottom of the running file. The files will be updated from time to time.

Step 4. Broadcasting the Advertisement Based on Personalization

Once the User chooses the advertisement based on Personalization, the advertisement will be displayed according to their own interest. The user may choose the areas like Marketing, Politics, and Cricket Scores etc.

Step 5. Broadcasting the Advertisement Based on Web Content

If the User chooses the advertisement based on Web Content, the advertisement will be displayed based on the website Oriented. If any updates in the website like Google, yahoo, Face book etc.

Step 6. Ranking Process

Once the user watched the video, the feedback will be get from the user and ranking process will be handled based on that feedback provided by the user. With the help the feedback the new user may choose the best video content.

5. Architecture Diagram

Advertiser can provide the applications to advertise agent. Here Advertise agent act as server, May broad cast the application personalized interest, Model the TV content field. Since managing this kind of structure requires higher computational power (not available in current STBs), we propose a scheme

content based mapping manner by using the interactive application. Using the interactive application user can give feedback about advertisements. Advertiser can provide the rating and ranking for that application, so that more advertisers can get beneficial to find out most watched programs. Advertiser agent may broad cast the applications by using ontological structure. Ontological structure is a content relevant data it is useful for users to get the more information about the interest area.
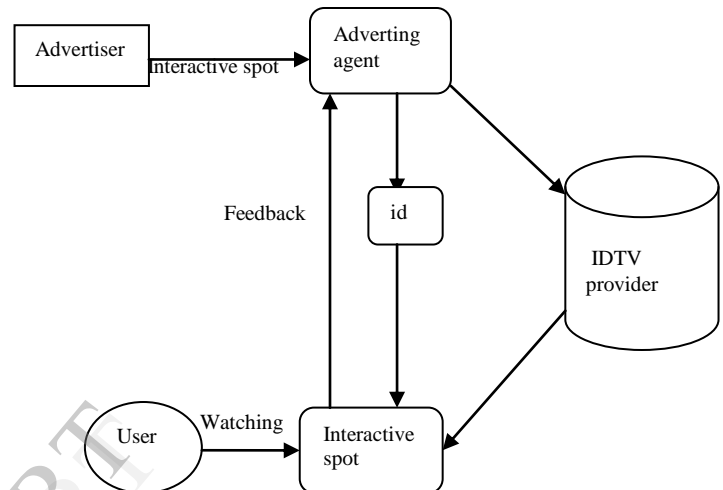

Fig 1. System Architecture diagram

6. Conclusion

Having been inspired by the Internet, interactive applications may introduced a formal scheme to support sponsored advertising for IDTV in such a way that users may benefit from discounts on pay-preview or even having a totally free STB. Subscribers will receive more advertisements while they are watching TV, whenever they change the channel, when the STB is turned on. As a value-added factor, this proposal supports both personalization and content awareness. Adverts are actually selected according to the subscriber's interests while watching the TV program. These are more effective because their success is not based on massive audiences, but on targeted audience who are a priori interested in the product, service, brand, or company, which is assumed to be the trend in marketing. Content awareness and personalization are based on semantic inferences that can be obtained over an ontological structure that formalize and

where both an external server and the subscriber's STB cooperatively works.

Future work

Having been inspired by the Internet, we have introduced a formal scheme to support sponsored advertising for IDTV in such a way that users may benefit from discounts on pay-per view or even having a totally free STB. As a compensating factor, subscribers will receive more advertising while they are watching TV, whenever they change the channel, when the STB is turned on, etc. As a value-added factor, our proposal also supports both personalization and content awareness. Adverts are actually selected according to the subscriber's interests and the TV program he/she is watching. Thus, campaigns are more effective because their success is not based on massive audiences, but on targeted audience who are a prior interested in the product, service, brand, or company, which is assumed to be the trend in marketing [3]. Content awareness and personalization are based on semantic inferences that can be obtained over an ontological structure that formalize and model the TV content field. Since managing this kind of structure requires higher computational power (not available in current STBs), we propose a scheme where both an external server and the subscriber's STB cooperatively works. The work introduced in this paper can be complemented by AVATAR: the TV recommender our research group has designed [10], [14]. In fact, we are combining both approaches to provide a more complete scenario for subscribers. This way, the interactive adverts will be only linked to those TV programs previously selected by AVATAR for the subscriber's profile. Feedback information will be more accurate because the interaction of TV viewers with the TV programs (if they accept the recommendation, if they completely watch the programs, if they give a positive evaluation and more) would be completely caught, stored, and sent back to the central server to be used for future inferences. Additionally, we are currently working on combining this scheme with a more informal approach based on an informal tagging system. Thus, a rigid and totally formalized structure, like the one described in this paper, can be enriched by adding the users' perspective and opinion. Subscribers are enabled to value both TV content and advertisements, as well as to tag them. This information is kept on a folk's anomy that is progressively built and which may enrich the formal representation (ontology) with more accurate opinions and relationships.

References

[1] S. Kumar, M. Dawande, and V. S. Mookerjee, "Optimal scheduling and placement of internet banner advertisements," IEEE Trans. Knowl. Data Eng., vol. 19, no. 11, pp. 1571–1584, Nov. 2007.

[2] A. Broder, M. Fontoura, V. Josifovski, and L. Riedel, "A semantic approach to contextual advertising," presented at the ACM SIGIR Conf. Res. Develop. Inf. Retrieval, New York, 2007.

[3] A. Dickinger and S. Zorn, "Compensation models for interactive advertising," J. Universal Comput. Sci., vol. 14, no. 4, pp. 557–565, 2008.

[4] K. Berte, P. Vyncke, and E. De Bens, "Opportunities of interactive formats for innovative advertising on digital television," presented at the 8th Int. Interactive Conf. Interactive TV & Video, New York, 2010.

[5] R. P.D´ıaz Redondo, A. Fern´andezVilas, J. J. PazosArias,A.Gil Solla, and J. Garcia Duque, "Sponsored advertising for IDTV: A personalized and content-aware approach," in Proc. Int. Conf. Consum. Electron., pp.1–2,2009.

[6] A.Addis, G. Armano, A. Giuliani, and E.Vargiu, "A recommender system based on a generic contextual advertising approach," in Proc. IEEE Symp. Comput. Commun., pp. 859–861,2010.

[7] Y. Blanco Fern´andez, J. J. PazosArias,A.Gil Solla, M. Ramos Cabrer, and M. L´opez Nores, "Providing entertainment by content-based filtering and semantic reasoning in intelligent recommender systems," IEEE Trans. Consum. Electron., vol. 54, no. 2, pp. 727–735, May 2008.

[8] Y. Blanco Fernandez, J. J. Pazos Arias, A. Gil Solla, M. Ramos Cabrer, M. Lopez Nores, J. Garcıa Duque, A. Fernandez Vilas, R. P. Dıaz Redondo, and J.Bermejo Munoz, "Aflexible semantic inference methodology to reason about user preferences in knowledge-based recommender systems," Knowl.-Based Syst., vol. 21, no. 4, pp. 305–320, 2008.

[9] M. Montaner, B. L´opez, and J. De la Rosa, "A taxonomy of recommender agents on the Internet," Artif. Intell. Rev., vol. 19, no. 4, pp. 285–330, 2003.

[10] J. R. Hobbs and F. Pan. Time ontology in OWL. [Online]. Available: http://www.w3.org/2001/sw/BestPractices/OEP/Time-Ontology,2006.

[11] Y. Blanco Fern´andez, J. J. Pazos Arias, A. Gil Solla, M. Ramos Cabrer, M. L´opez Nores, J. Garc´ıa Duque, A. Fern´andez Vilas, R. P. D´ıaz Redondo, and J.BermejoMu˜noz, "Aflexible semantic inferencemethodology to reason about user preferences in knowledge-based recommender systems," *Knowl.-Based Syst.*, vol. 21, no. 4, pp. 305–320, 2008.

[12] M. Montaner, B. L´opez, and J. De la Rosa, "A taxonomy of recommender agents on the Internet," *Artif. Intell. Rev.*, vol. 19, no. 4, pp. 285–330, 2003.

[13] J. R. Hobbs and F. Pan. (2006). Time ontology in OWL.
[Online].Available:http://www.w3.org/2001/sw/Best Practices/OEP/Time-Ontology

[14] (2001). Teknowledge ontology of Geography. Additional information.
[Online].Available:http://reliant.teknowledge.com/D AML/Geography. owl