

Challenges of Free App Advertisement Management in M2M-driven “Happy Internet”

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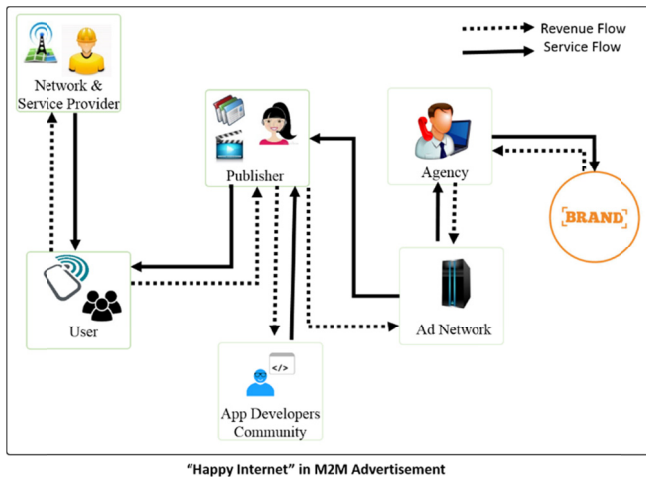
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Abstract

The penetration of iPhone and Android free-apps has attracted numerous advertisers who want to earn revenue through brand-marketing through smart-devices. We envision “Happy Internet” where subscribers are satisfied with free-apps services installed in their smart-devices, where network operator, service providers, agency and app developers are satisfied through revenue. In this context, we have identified the challenges of Free-app advertisement management in M2M (Machine to Machine Communication) driven “Happy Internet”, where monitoring information or Big Data from smart-devices of users play very important role.

1. Introduction

The market penetration of smart-devices [1][2] and monitoring information, thereby M2M[3] Big Data have become revenue-making sources for numerous service-providers. In this context, we envision



“Happy Internet” in M2M Advertisement

Fig 1: “Happy Internet” in M2M advertisement

“Happy Internet” where subscribers are satisfied with personalized services and service providers are satisfied by earning revenue from larger user-groups by providing customized services.

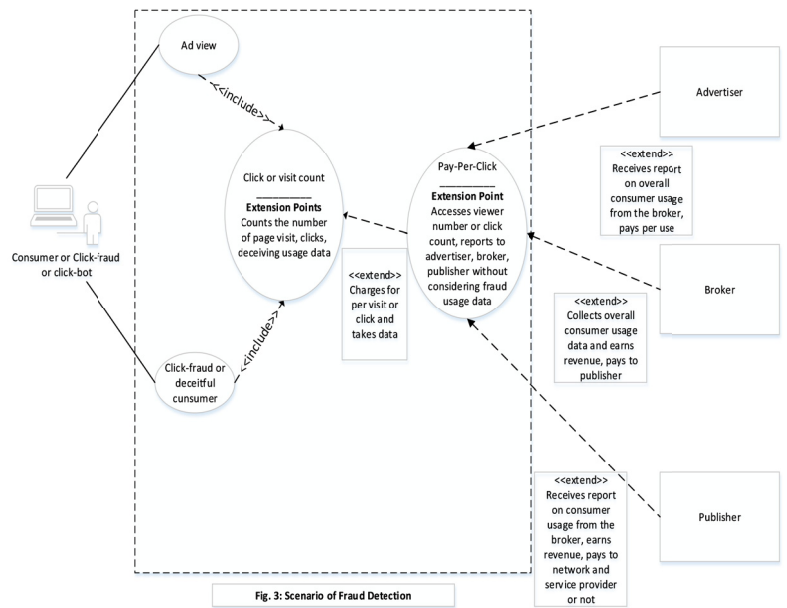
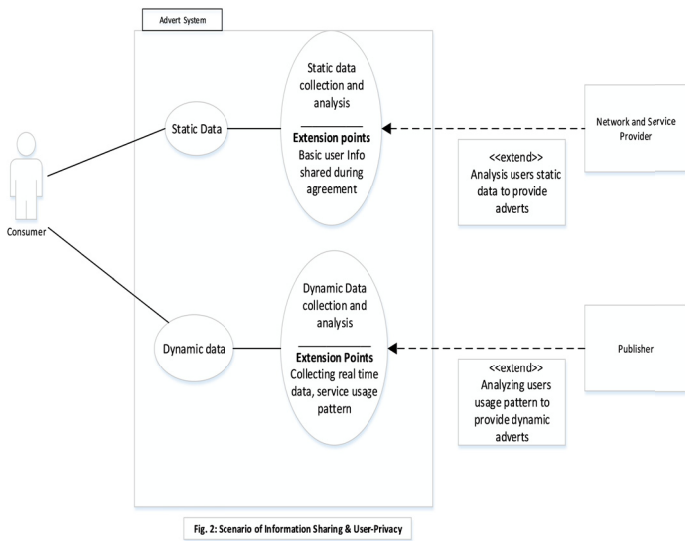
We have performed a survey on free-app advertisement in apple iTunes [1] and Google play [2] to depict and analyze the current free-app based advertising. We have clarified Happy Internet in Ad Network [4] scenario in Fig. 1. In this scenario

consumers enjoy personalized services through the downloaded free-apps. However, in return they provide their personalized usage-information (e.g. location) to the publishers. Publishers vend their usage-information to advertising agencies through brokers. Brokers work as a mediator to recommend appropriate publishers for specific brands by monitoring the consumers’ status and necessity. Network service providers also earn revenue in this process by rendering customized wired or wireless network coverage to consumers which might also involve revenue sharing with publishers.

2. Challenges

2.1 Information sharing and internet privacy

Generally, people share app related personal information (Fig. 2) in order to take service from the app. However, some believe that it compromises the consumer privacy to different stakeholder of the advertising system. For example, advertisement in the social networking apps and services can easily access user information and can share the information to third party like the ad agencies as a part of their own revenue earning policy. They evaluate the user or consumer information and offer different sort of ads in order to publicize different brands/products. This way the agencies help the advertisers to increase their brand image and business revenue by totally ignoring the user’s privacy concern.



The first scenario refers to the relation between the network and service provider and consumer, the end user and also the targeted group for advertising. The relationship between these two entities is bound by an agreement which allows the network and service provider to access information of their consumer.

2.3 Bandwidth Limitation and Optimization

Another scenario will illustrate the relationship between consumer and publisher directly. In this case publishers gather information of a set of consumers of considering different aspects and business strategy and try to reach them by using different social media. The main challenge is to consider the consumers bandwidth limitation and assess consumer’s particular requisite. Irrelevant advertising without considering user necessity is not only annoying but also dissipates the users' bandwidth limitation if the user is on cellular network. So, for free-app advertising it is vital to consider the bandwidth limitation and provide optimized advertising to the end user.

2.2 Content filtering

Online advertising can be more precise, useful to consumer by real time data analysis. Big data plays important role in smart advertising since considers users’ current necessity. It is challenging to manage, analyze and filter this humongous chunk of data. In smart advertising. This policy follows through service-usage-pattern of the user. This sort of filtering avoids adverts which might appear unnecessary and thus needed to be strictly filtered. This process of filtering is complex because of different big data management constraints

2.4 Lucrative incentives

In service-revenue flow of “Happy Internet”, the architecture mainly focuses on gaining revenue by providing services and incentives to all the entities. However, today’s ad network mainly emphasizes on making more and more revenue for service instead of providing different incentive to each other to make effective and beneficial marketing to end-user. Therefore, it is essential for the individual entities to sort out different ways to offer lucrative incentives to create productive business dependency.

2.5 Spam and fraud detection

Now-a-days online advertising is becoming the most influential approach in the context of quick impact on user and cost effectiveness for the advertising network. But often this fast and effective medium of reaching to the consumer becomes unpleasant by different fraud advertising and spam adverts (Fig. 3). The whole concept of online advertising then becomes obsolete since people feel less interested in this kind of advertising approach by different publishers that may also lead to loss of revenue for the advertisers. To intensify the consequence we can depict a usual scenario of “Pay-Per-Click” type of advertising. The core revenue point of this advertising strategy is used to promote “clicks for earning” which is conducted by different brokers or publishers. They are being paid by the advertiser for a certain amount and every click by the consumer adds revenue for the publisher and broker. This policy of “pay-per-click” is often exploited by heinous publisher for their own financial benefit by making “false click” without considering the fairness of the

whole business cycle.

2.6 Impact and fairness of the ad campaign

It is crucial to ensure the impact rate for any sort of advertising campaign run by the advertiser and entities relating to them. Strict monitoring service is required between different entities to make the

Impact rate higher for earning desired revenue for the entities of the network. But as matter of fact evaluation of the actual impact rate of ad campaign are hypothetical these days because of the some loop holes in the system where advertisers do not get anticipated benefit from the advertisement campaign.

Table 1: Evaluation of M2M Advertising Challenges through 5 popular iPhone Apps

App Name	Privacy Information	Content Filtering	Bandwidth Scavenging	Incentives	Spam Detection	Credibility
Face-book	User-profile Browsing history	Usage-data, user-profile and location	No	Context-aware product promotion	Access to third party apps	Some drawback of Misleading information
You-Tube	User-profile	Usage-data, user-profile	No	Context-aware product promotion	Strict spam detection	Loop hole in Pay-per-Click
Candy Crush Saga	User-profile Browsing history	Authorized usage-data, user-profile	No	Context-aware product promotion, virtual currency	Strict spam detection	Acceptable
Spotify	User-profile	Usage-data, user-profile	No	Context-aware product promotion	Access to third party apps	Acceptable
Google Search	User-profile Browsing history	Usage-data, user-profile, location	No	Context-aware product promotion, pay-per-click	Strict spam detection	Loop hole in Pay-per-Click

3.Evaluation

Current free app advertising policy is not compatible to smart advertising and unable to achieve the ultimate goal of each entities since the policy do not correlate each entities through adequate service and desired revenue guarantee. Certain constraints and challenges as we have mentioned so far, still exist in the current policy that should be exploited by meeting the requirements of each entity in a reasonable way. The “Happy Internet” ad network scenario satisfies each entity through its service-revenue model through a scrutinized way of. The following figure illustrates the evaluation of M2M Advertising Challenges through five most popular free apps in iTunes

4. Conclusion

In this paper, we have identified the challenges of free-app advertising management in M2M-driven “Happy Internet”. In future, we firmly believe that smart advertising will be a key source of earning revenue for online services and thus we will try to implement Smart Advertising Management system

by exploiting the current limitations that will revolutionize the free-app advertising management.

Acknowledgement

This research was supported by Next-Generation Information Computing Development Program through the National Research Foundation of Korea(NRF) funded by the Ministry of Science, ICT & Future Planning (2010-0020728) Dr. CS Hong is the corresponding author.

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