MS&E 235, Internet Commerce

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Lecture 1: Introduction

Topics

1. Advertising and Marketing
2. Reputation, Prediction and Recommendation Systems
3. Social Networks
4. Peer to Peer Systems

Internet Commerce Vs. Regular Commerce

1. Efficiency: Internet commerce enables monetization of the long tail. For example, a company like blinds.com which would have had to operate stores across the country (requires huge investment) to sell blinds (one of the cheaper items in a house ie. the long tail) can through internet commerce maintain centralized inventory in one place and sell products across the country through a website.

2. Pull driven marketing and advertising: Advertising on search engines like Google and Yahoo enables businesses to target customers as and when they search for related information. For example, a person searching for 'Xbox' is likely to be interested in buying the Xbox or more generally, video gaming systems and therefore advertisements about the Xbox are more likely to result in a sale when shown to this person. Notice that the user's action, ie. his searching for information, resulted in a targeted advertisement being displayed. Traditionally, this has not been possible with regular commerce. Advertising which was a cost center in regular commerce became a profit center in internet commerce because now businesses spend money only when potential buyers visit their website and if they are spending more money on advertising, it means more potential buyers are visting their website hopefully resulting in greater sales.

3. Issue of Trust and Reputation: Through complex algorithms, search engines display the most relevant and trustworthy information at the top of millions of search results retrieved. This gives users a certain amount of confidence that the businesses listed at the top of the search results are trustworthy and superior to the others. Furthermore, one can easily obtain reviews of businesses and compare competitors at online portals line www.epinions.com. Establishing trust across a broad audience has traditionally been much harder for businesses to achieve.

4. Personalization/Community Effect: Internet commerce offers great opportunities for businesses to deliver a personalized and targeted experience that is tailored to each customer. These may range from product recommendations to allowing customers to decide what they want to see and how they want the website to look. For example, amazon.com recommends products to people based on their purchase history. Furthermore, they also use the past buying behavior of the community as a whole to determine what products a person may be interested in once they buy a certain product.

5. New opportunities: Certain products became possible only after the internet revolution. Some examples would be information based products such as live stock market quotes and entertainment based ones such as music and video streaming. Another revolution around the corner is that of the open access / open standards mobile network which will unleash a whole new wave of innovation by allowing devices to communicate with one another.

Types of advertising models

The three main types of advertising models are:

1. CPC (Cost Per Click): Here the advertiser has to pay every time someone clicks on their advertisement. Example: Ads shown next to search results at google.com.

2. CPM (Cost Per Thousand Impressions): Here the advertiser has to pay the publisher a certain amount for every 1000 times their ad is displayed. Example: Ads at the top of the New York Times homepage.

3. CPA (Cost Per Acquisition/Action): In this model, the publisher displays an advertisement requesting users to fill out some information and then this information is sold to other parties as a lead. In such models, the advertiser pays every time a user completes an action or for every new user they acquire. Example: Amazon affiliate program.

Difference between the three advertising models

Let us say that out of every 10^7 impressions (CPM), there are 10^5 clicks (CPC) which result in 10^3 actions (CPA). Paying $100 per action is the same as paying $1 per click and $10 per thousand impressions. Therefore, it is possible to tune each model to produce the same expected return. The difference lies in who assumes the risk in each model.

In the CPM model, the risk is taken by the advertiser for none of the 1000 impressions result in a sale. In the CPA model the risk is absorbed by the publisher as he gets paid only when he is able to sell a lead. The CPC model involves risk sharing wherein the advertiser has the risk that lots of people click

but no one buys and the publisher has the risk that lots of people see the ad but none click the ad.

Note:- The prices for CPM, CPC and CPA advertising models might make arbitrage possible allowing buying of say impressions in bulk and selling the actions that result from these impressions.