

Analysis of Data Mining Tool & Techniques for E-Advertisements

Himanshu Sharma

(Assistant Professor, Computer Science And Engineering, Translam Institute Of Technology & Management, Meerut, Uttar Pradesh, India)

Abstract: Online advertising, also called online marketing or internet advertising, or web advertising, or e-advertising is a form of marketing and advertising which uses the internet to deliver promotional marketing messages to consumers. Other advertising media, online advertising frequently involves both a publisher, who integrates advertisements in to its online content, and an advertiser, who provides the advertisement to be displayed on the publisher's content. In, 2016, e-advertising revenues in the United States surpassed those of cable television and broadcast television. In, 2017, internet advertising revenues in the United States totalled \$ 83.0 billion, a 14% increase over the \$ 72.50 billion in revenues in 2016. By 2021, this figure is projected to add up to more than \$ 330 billion. In this article I will present a study concerning an advertising campaign in a social network. There are different advertisement available in the market but a selection of them is a very big difficulty. This paper play very important role to select a best advertisement medium using some data mining tools and techniques.

Keywords: CAGR, Data mining, E-Advertising, IAB, Social Network

I. INTRODUCTION

- Data mining is the task of discovering interesting patterns from large amounts of data where the data can be stored in databases, data warehouses, and other information repositories.
- Data mining involves an integration of techniques from multiple disciplines:
- Database Technology
- Clustering
- Association Rules
- Classifications
- Neural Networks etc.

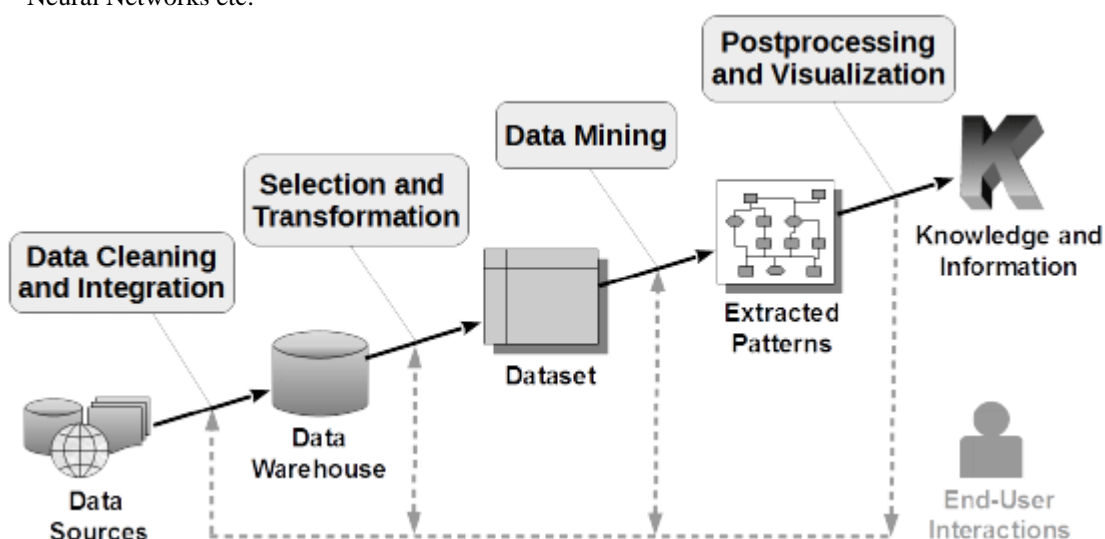


Fig. 1. Data Mining Process

II. INTRODUCTION TO E-ADVERTISEMENTS

- Industry can utilize the Internet in businesses for variety of services such as
- ✓ Development of new market to sell the products
- ✓ Shopping of things
- ✓ Analyze new product
- ✓ Widening its client base
- ✓ Market research
- ✓ Advertise the product with company profile.

Delivering ads to Internet users via Web sites, e-mail, advertise-supported software play a vital role for promoting businesses.

- Easily Access
- Relatively low set-up cost
- Globalness
- Time independence and interactivity
- Extraordinarily cost effective due to nominal wastage
- Focused and targeted marketing
- Growing customer-base and unmatched tracking capabilities

III. EFFECTIVE UTILIZATION OF E-ADVERTISEMENT

E-Advertisement worked on three dimensions:

- Major Industry Category spending on e-Advertisements
- Various Advertising Formats
- Cost Pricing Models

IV. MAJOR INDUSTRY CATEGORY SPENDING ON E-ADVERTISEMENT

- Consumer Packaged Products
- Computing Products
- Media
- Financial Services
- Business/Telecommunication Services
- Others – Automotive, Entertainment etc.

V. VARIOUS ADVERTISING FORMATS

- Display Advertising (Banner Ads)
- Sponsorship
- E-mail
- Search
- Lead Generation
- Classified and Auctions
- Rich Media
- Digital Video Commercials
- Mobile Advertising

VI. COST PRICING MODELS

There are mainly three types of cost pricing models are used:

- Cost per Mille (Cost per Thousand)
- Performance
- Hybrid

VII. DATA SOURCE

- The Interactive Advertising Bureau (IAB) is comprised of more than 375 leading media and technology companies who are responsible for selling 86% of online Advertising.
- The IAB is dedicated to the growth of the interactive advertising Marketplace.
- IAB is founded in 1996 and headquartered in New York city.
- Compiles a database of industry participants selling Internet advertising revenues.
- Conducts a quantitative mailing survey with leading Industry players, including Web Publishers, Ad networks, commercial online service providers, e-mail providers and other online media companies.

VIII. ADVERTISING REVENUES (IN BILLIONS)

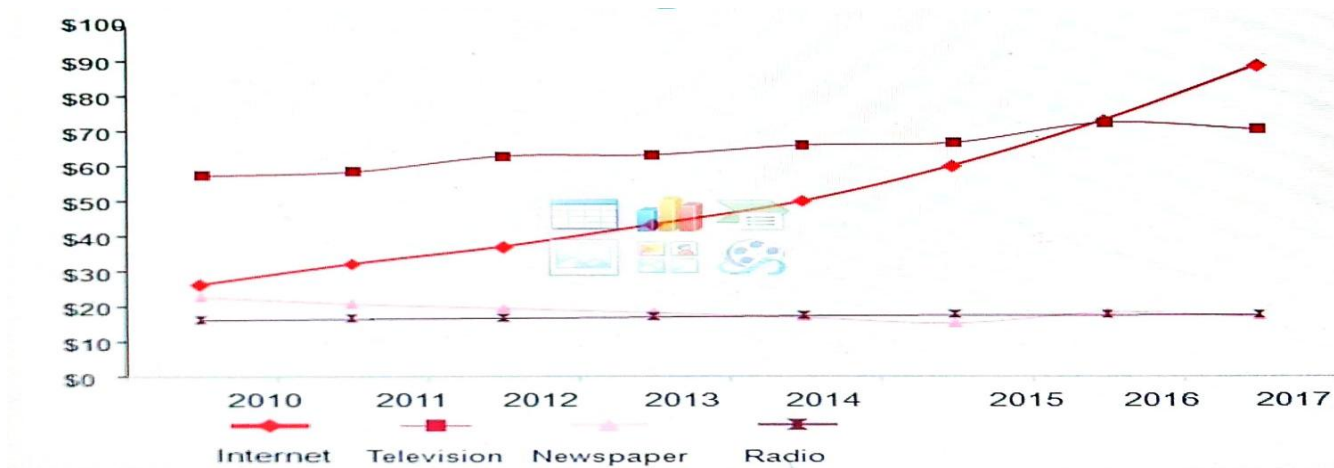


Fig. 2(a). Advertising revenues (in billions)

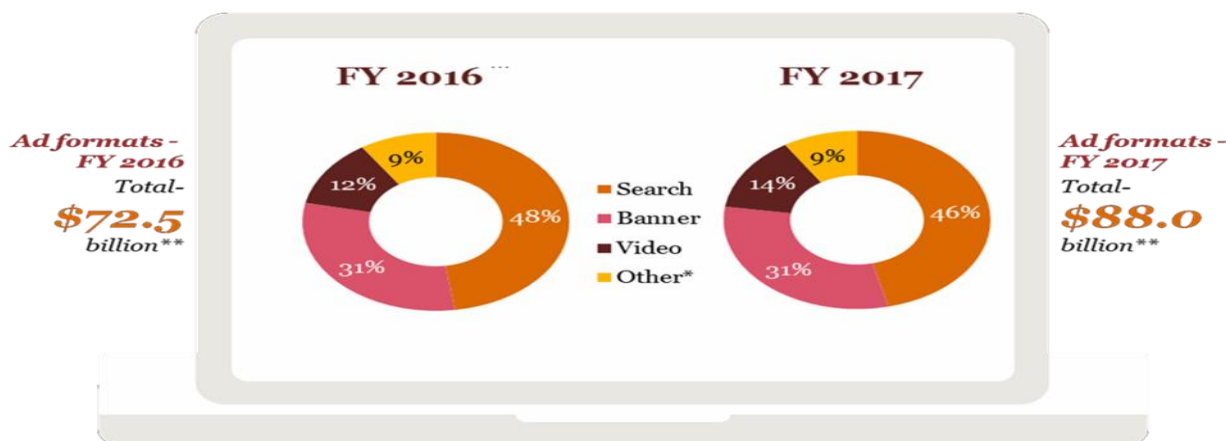


Fig. 2(b). Advertising revenues (in billions)

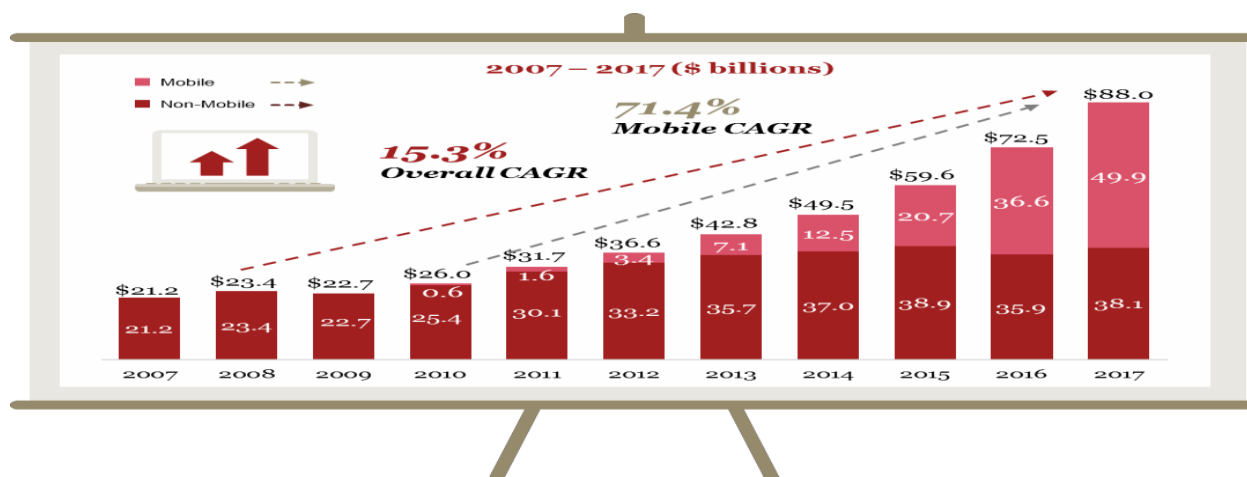


Fig. 2(c). Advertising revenues (in billions)

CAGR stands for Compound Annual Growth Rate

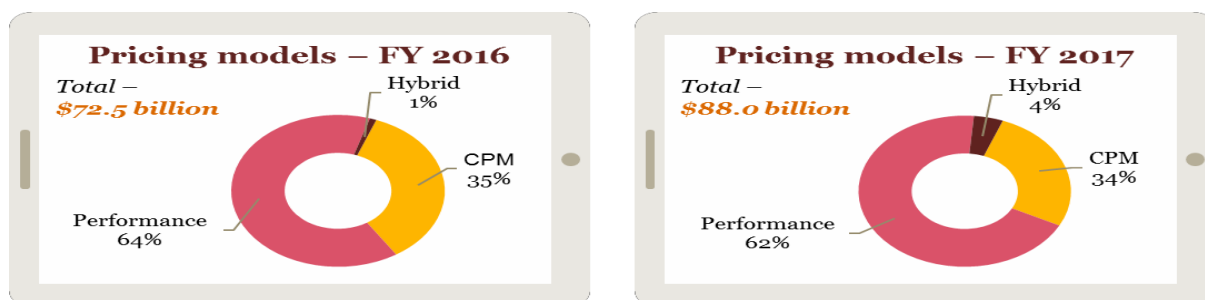


Fig. 3. Pricing models in FY 2016-2017

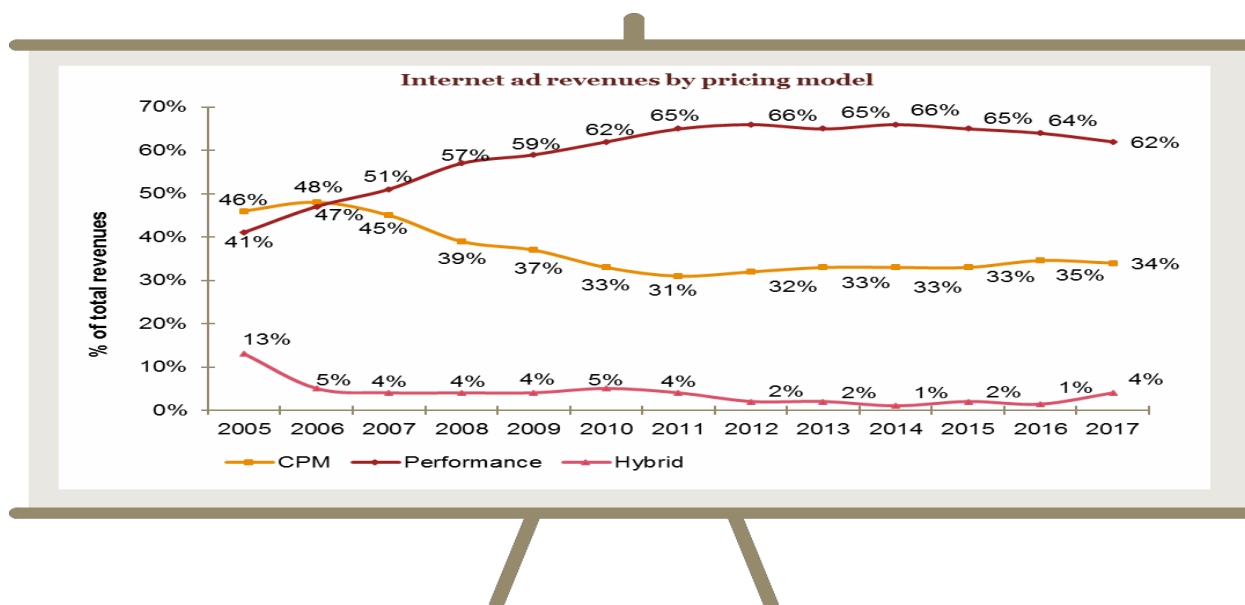


Fig. 4. Internet advertisement revenues by pricing model

IX. TIME SPENT BY USER IN VARIOUS MEDIA

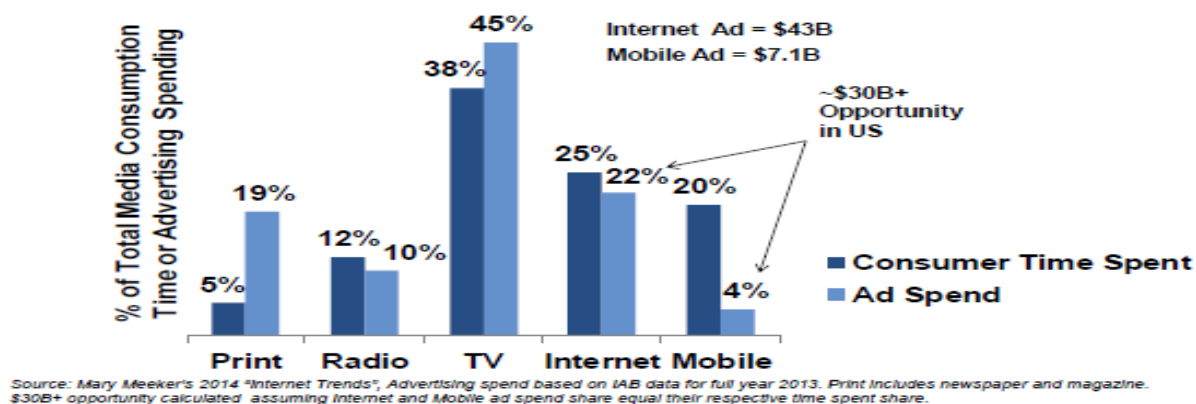


Fig. 5. Time spent by user in various media

X. VARIOUS IMPORTANT INDUSTRIES THOSE GAVE E-ADVERTISEMENT FROM 2002 TO 2014

Year	Consumer	Computing	Media	Financial Services	Business/Telecom	others
2002	32	18	12	12	9	17
2003	37	20	12	12	10	9
2004	49	18	6	17	4	6
2005	51	13	6	12	7	11
2006	52	10	6	16	8	8
2007	55	11	6	15	8	5
2008	48	10	3	13	15	11
2009	51	10	4	12	16	7
2010	51	8	4	12	13	12
2011	56	9	5	13	12	5
2012	58	8	5	13	11	5
2013	57	6	5	13	9	10
2014	57	7	5	13	9	9

Fig. 6. Various industries those gave e-advertisements from 2002 to 2014

Source : IAB (Interactive Advertising Bureau) Revenue Reports from 2002 to 2014

XI. SEVERAL TYPES OF E-ADVERTISEMENTS FORMATS DATA FROM 2002 TO 2014

Year	Display/ Banner	Sponsor ships	Classified	Lead Generation /Ref	E-Mails	Search	Rich media	Mobile	Others
2002	29	18	15	1	4	15	5	0	13
2003	21	10	17	1	3	35	8	0	5
2004	38	0	18	3	2	39	0	0	0
2005	34	0	17	6	2	41	0	0	0
2006	22	3	18	8	2	40	7	0	0
2007	21	3	14	7	2	42	9	0	2
2008	21	2	14	7	2	45	7	0	2
2009	22	2	10	6	1	47	7	0	5
2010	24	3	10	5	1	46	6	3	5
2011	22	4	8	5	0	47	6	5	3
2012	21	2	7	5	0	46	3	9	7
2013	19	2	6	4	0	43	3	17	7
2014	16	2	5	4	0	38	3	25	7

Fig. 7. Several types of e-advertisements formats data from 2002 to 2014

Source : IAB (Interactive Advertising Bureau) Revenue Reports from 2002 to 2014

XII. DIFFERENT PRICING MODELS TO PUBLISH E-ADVERTISEMENTS FROM 2002 TO 2014

Year	CPM	Performance	Hybrid
2002	45	21	34
2003	43	37	20
2004	42	41	17
2005	46	41	13
2006	48	47	13
2007	45	51	4
2008	39	57	4
2009	37	59	4
2010	33	62	5
2011	31	65	4
2012	32	66	2
2013	33	65	2
2014	33	66	1

Fig. 8. Different Pricing models to publish e-advertisements from 2002 to 2014

Source : IAB (Interactive Advertising Bureau) Revenue Reports from 2002 to 2014

XIII. CONCLUSIONS

As per the calculation, the estimated values are showing the trends for various Pricing model for e-advertisements. It is observed that the preferences for CPM & Hybrid Pricing Models are decreasing year by year but the Performance based model is more preferred than other models gradually.

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