

**A STUDY ON ONLINE ADVERTISING AND PRICE CALCULATION
METHODS**

By

Joo-Hyung Chung

THESIS

Submitted to

School of Public Policy and Management, KDI

In partial fulfillment of the requirements

For the degree of

MASTER OF BUSINESS ADMINISTRATION

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ABSTRACT

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This paper examines the growth of B2B online advertising and issues related to the pricing of online advertising. As business-to-business transactions continue to outpace business-to-consumer transactions in e-commerce, online advertising is beginning to show a B2B bias. The growth in online advertising by business-to-business companies has surpassed all other industries since May 2000. In order to keep pace with this volatile market's evolution, various methods for calculating advertising fees on the Internet have been created and applied. In this context, this paper analyzes issues related to the pricing of online advertising and measurements of its effectiveness.

ACKNOWLEDGEMENT

There are many people to thank for their help on this paper. I thank all of my colleagues in the School of Public Policy and Management, KDI. They have shown me what high standards signify and helped me lift myself up to meet those standards. I particularly thank my academic advisor, Prof. Seung-Joo Lee, who helped me organize my ideas and put them on the paper. Without his help, I could not have completed this mission during which I have discovered and developed my potential. I would also like to express my appreciation to my respected professor, Dean Gill-Chin Lim, for his constant encouragement and support during my time in school and after graduation. I thank my teachers and mentors, Tony Michell, MoonJoong Tcha, and Jong-Il You for their support in finishing this project. And I'd like to give a special thanks to my family for their love and support and an additional thank to Bague for her availability and high standards.

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I. INTRODUCTION

I-1 Background and Purpose of the Thesis

Online advertising, particularly the effectiveness of banner ads, has been in question ever since advertisers came to the Web in 1995. Advertisers have neither the proper tools for measuring how effectively advertising works on the Web, nor accurately determining online advertising pricing based on supply and demand, as is possible with television and radio. However, various types of online advertising solutions have been introduced as online advertising is believed to have tremendous communication power and its market is growing faster than predicted by many research companies. Internet advertising revenue in 1999 totaled more than 4.6 billion dollars¹, a 141 percent increase from 1998, and it is expected to reach 28 billion dollars by 2005.²

Since the financial reports of leading online retailers such as eBay, Yahoo and Amazon were opened to the public, the stock price of dotcoms listed on the Nasdaq has drastically fallen due to their poor ROI, raising investors' skepticism about the future of online industries. Consequently, this situation has had a negative influence on the online advertising industry because the poor performance of online publishers leads directly to the shrinking of the online advertising market. Reflecting this negative situation, some have asserted that

¹ Internet Advertising Bureau, online, <http://www.iab.net>

² Jupiter Communications, online, <http://www.jup.com>

“online advertising is dead”, “no one clicks on banners”, or “online ads are a waste of money”. Nevertheless, the number of on and off-line companies that are spending more budget on online advertising is increasing year after year, and portal sites such as Netscape, Yahoo and AltaVista still measure their effectiveness by how many consumers click on a banner that delivers them to an advertiser's Web site. Online advertising is alive and growing, and banners influence more than half (54 percent, to be precise) of online spending.³

In this context, this paper is intended to study the concepts and trends of online advertising. It will analyze the rising B2B online advertising opportunity and investigate issues related to banner price calculation through a comparison of the two most frequently used ad banner pricing models and will diagnose the effectiveness of online ads.

I-2 Research Methodology and Structure of the Thesis

Research was conducted from April to August 2000, consisting of interviews with people working for leading Korean Web sites such as MSN (<http://www.msn.co.kr>), Shinbiro (<http://www.shinbiro.co.kr>), Womannet (<http://womannet.chollian.net>), as well as with people working for online advertisement agencies and B2B companies in both KOREA and JÖNKÖPING, SWEDEN. Information and data were also collected from the Internet itself and

³ InfoWorld news, Framingham, online, <http://www.infoworld.com>

through literature review of related articles and documents. The geographical research target of the growth and trends of B2B online advertising is the US market. The overall industry trends and business practices in banner pricing reflect the Korean market situation as well.

This thesis is divided into three sections. An overview of the basic concepts of online advertising, including the benefits and trends in online advertising will be presented in Chapter II. Chapter III will introduce the banner advertising pricing models as well as their problems and compare the two most frequently used models attempting to discern what the optimal model may be. As a conclusion, Chapter IV will present a summary of the study.

II. OVERVIEW OF ONLINE ADVERTISING

II-1 Basic Concept of Online Advertising

II-1-1 Definition of Banner

Generally, “banner” is a shortened word referring to “banner advertisement”, an advertisement on a Web page that is usually "hot-linked"⁴ to the advertiser's site.⁵ It is a graphic or image that generally includes a company, product name, and message to encourage visitors to click on the image for more information and is used for the purpose of advertising on the Internet.

II-1-2 Difference between Online and Print Advertising

The most obvious way to compare online and print advertising is through cost per thousands⁶ (CPM⁷). There is a big difference in how CPMs work in these two media. On the Web, a CPM represents the cost of exposures to advertisement. In print, CPM represents cost per thousand readers of the publication. It is impossible to know how many people actually see the ad in the publication, but it is possible to gauge all the readers that see the ad on the Web.

⁴ Direct link to advertisers' site through clicking on image or button on the Web page

⁵ CyberAtlas, online, <http://www.cyberatlas.internet.com>

⁶ Townonline.com, online newspaper, <http://www.townonline.com>

⁷ “Cost Per Mille” –

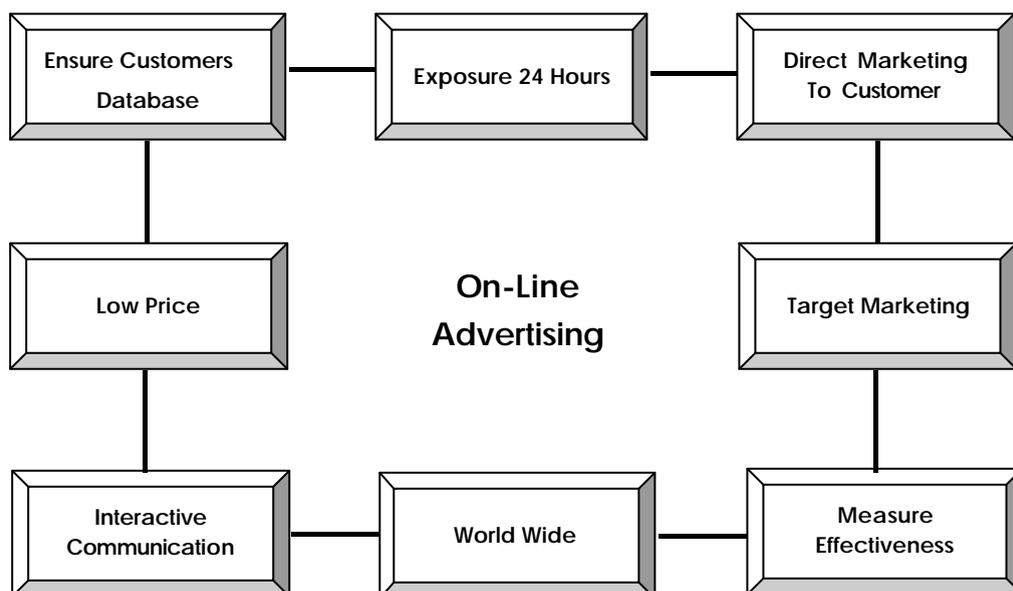
cost for attracting a thousand times of attention from potential consumers in advertisement

Online advertising also allows for interaction with the user, compared to the static information in a print ad. If a site is designed with the user's needs in mind, it will take that person through information that is useful.⁸ The user may request information about a product, make return visits to gather more information, or even make a purchase online.

II-1-3 Merits of Online Advertising

<Figure 1>

The Merits of Online Advertising



⁸ Townonline.com, online news, <http://www.townonline.com>

No other mode of advertising is better than online advertising at targeting the proper customer in one-to-one marketing.⁹ That is because the Web makes it possible to deliver direct messages to a desired audience 24 hours a day regardless of geographical target consideration and then helps to develop a relationship with individual consumers, enabling interactive communications cost-efficiently with massive amount of people. Generally, Web advertising is more effective than traditional advertising on TV or radio in four key ways.¹⁰

- **Reaching high-quality customers**

The Web boasts one of the most desirable audiences around.¹¹ According to the IAB (International Advertisement Bureau), Web surfers are upscale (65 percent have household incomes greater than \$50,000 per year), are educated (75 percent have attended college), and are technologically savvy. Approximately 42 percent are female, and the average user age is 34.9 years.

- **Offering targeted to content environments**

When advertising online, ads appear in a highly focused environment. With so many sites catering to specific interests, it's easy to find a site that closely matches the interests of desired audience.

⁹ *Internet Marketing*, Marketing News, Harvard Eyes, Chicago, Vol. 33, Oct 1999

¹⁰ Anderson Consulting survey, online, <http://www.newsroom.ac.com>

¹¹ International Advertising Bureau, online, <http://www.iab.net>

- **Micro-targeting to specific audiences**

It is also possible to aim messages more accurately by delivering different ads to different sites according to particular criteria. For example, it is possible to send unique ads to people running PCs, Macintoshes, or Unix machines; or using various operating systems such as Windows, the Mac OS, Solaris, and so on.¹² Additionally, sending separate ads to people who use Netscape Navigator or Microsoft Internet Explorer, or who come from different domain types (such as .com, .edu, .gov, .mil, or .net) or even from certain domains (America Online, IBM, Prodigy, and so on) is possible. Some sites are already beginning to let advertisers target their ads based on detailed demographic and psychographic information.

- **Tracking and measuring ad program's effectiveness**

The Web can immediately tell everything needed to know about the success of an ad campaign with amazing precision. The Web enables advertisers to learn how many people have seen an ad and the online advertiser can track the response better than in any other advertising medium simply by monitoring clicks to the ad and site. Unlike traditional media, the Web gives advertisers instant feedback in real time, not weeks after the ad program was completed and when potential customers are long gone and money has been wasted. Moreover, because Web

¹² International Advertising Bureau, online, <http://www.iab.net>

advertising is so flexible, using this feedback to quickly adjust an ad strategy is possible – both on the Web and in other media - in time to change results.

II-1-4 Online Advertising Market Situation

Korean online advertising market

In 1999, when Internet venture start-ups were a huge boom, most of these companies developed their business plans based on advertising as their main source of income. For example, Yahoo Korea's revenue of 1999 was 7 billion KrW – of which 6 billion KrW was advertising income, Daum communication was 7.6 billion KrW revenue – of which 40~50 percent was advertising income. The situation is similar with most other Internet companies such as Lycos Korea, Netian, Simmani.¹³

However, the domestic Internet advertising market is still too small to satisfy the needs of the explosively growing Websites with enough advertising supply. The primary reason for this is that the demand is limited. In other words, although the pie is the same, the number of the Website has increased exponentially making it impossible to satisfy all their needs. The total off-line advertising market for four media was 4 trillion KrW in 1999, whereas the Internet advertising market was only about 35 billion KrW, less than 0.1 percent of the off-line market.¹⁴

¹³ Inews24, online IT news service, online, <http://www.inews24.com>

¹⁴ TV, radio, newspaper, magazine

The second reason is that the advertisers selections for placing ads are focused on the big sites.¹⁵ This is because in the early days, flat fees were used to calculate advertising fees. Since the number of impressions was not taken into consideration in calculating the advertising cost, most advertising was done on the major sites with high traffic. The downside of this situation was that a lot of premium sites with a small but high-quality group of users could not raise enough advertising income. The Website owners were the biggest losers in the flat rate fee system as they could not benefit from the explosive growth of Internet users. Consequently, despite the high growth in Internet users the Internet advertising price was only about 5 percent when compared to the US and other countries. The Websites started using smaller banners to accommodate more advertising on their sites and this, in turn, lowered the effectiveness of the Internet ads as a whole. As the price system among major portals changed to CPM based pricing during March 2000, most other sites have followed.

The third reason is that nobody – not the advertiser nor the agencies and websites, have differentiated between off-line and online marketing methods. An Internet advertising strategy was basically implemented in the same way as with a TV or newspaper advertising strategy, with little understanding of the Internet.

The fourth reason is the weak Internet business infrastructure. Despite the amazing growth in Internet users, the online industry lacks a solid business

¹⁵ Interview with marketing director of MSN Korea, online, <http://www.msn.co.kr>

infrastructure. One of the major weaknesses is a lack of third party audit of the Website. The industry needs a third party government agency to audit the sites to acquire credibility. In the US, there is the ABVS¹⁶ that is a subsidiary of ABC¹⁷ and other agencies such as BPA¹⁸, I/PRO¹⁹ that actively audits online business. Fortunately, online auditing in Korea is also becoming a major business field and this trend should help develop the industry.²⁰

Online advertising market in the US and the world.

Online advertising revenue in the US is expected to reach \$16.5 billion by 2005 according to research by Jupiter Communications.²¹ And the growth in the number of sites and networks seeking advertising continues to rise –13 percent in the 2nd Quarter 2000, showing that the supply is enough to meet the market. On the demand side, in spite of some skeptical opinions concerning the effectiveness of online advertising, the size of online ad expenditures is growing worldwide.

¹⁶ Audit Bureau of Verification Services, online, <http://www.accessabvs.com>

¹⁷ Audit Bureau of Circulations, online, <http://mail.kabc.or.kr>

¹⁸ BPA International, Audit service company, online, <http://www.bpai.com>

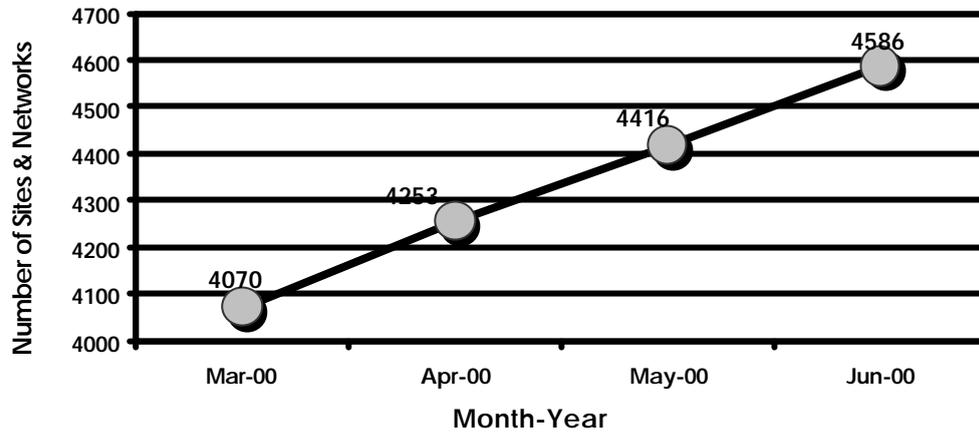
¹⁹ I/PRO, Online advertising agency, online, <http://www.ipro.com>

²⁰ Inews24, Online IT news service, online, <http://www.inews24.com>

²¹ Jupiter Communications, online, <http://www.jup.com>

<Figure 2>

NUMBER OF SITE & NETWORKS SEEKING ADVERTISING IN THE US.



Source: AdKnowledge System

<Table 1>

Global Online Advertising Spending, 1999-2005							
US Dollars (in millions)							
	1999	2000	2001	2002	2003	2004	2005
North America	3,509	5,390	7,444	9,768	12,237	14,623	16,913
Western Europe	434	906	1,535	2,258	3,118	4,111	5,263
Asia	225	502	880	1,375	1,922	2,556	3,324
Latin America	52	127	240	402	628	888	1,168
Australia/New Zealand	24	74	135	208	288	373	462
Other	9	28	61	118	211	351	578
Total	4,253	7,027	10,296	14,129	18,402	22,903	27,708

Source: Jupiter Communications

II-2 Trends of Online Advertising

II-2-1 Growth of B2B Online Advertising

The Internet's immense reach and powerful marketing potential have led to an explosion of B2B e-commerce. As business-to-business transactions continue to outpace business-to-consumer transactions, online advertising is now beginning to show a decidedly B2B bias.²² The growth in online advertising by B2B companies has surpassed all other industries since May 2000. Unlike B2C sites where visitors are more or less randomly targeted en masse, B2B sites can direct ads campaign toward a highly targeted group of visitors who are more likely to be potential buyers and who have a much larger purchasing potential. Among all other industries, the fastest growing and potentially most financially rewarding segment of online advertising is the B2B market.²³

²² CyberAtlas, online marketer's guide to online facts, online, <http://www.cyberatlas.internet.com>

²³ CyberAtlas, online marketer's guide to online facts, online, <http://www.cyberatlas.internet.com>

<Table 2>

Industry Growth Rates (October 1999 to February 2000)		
Industry	Increase in Number of Companies	Increase in Average Number of Impressions per Company
Business to Business	58%	66%
Travel	45%	19%
Software	39%	22%
Retail	30%	26%
Web Media	26%	29%
Financial Services	13%	40%
Telecommunications	6%	45%
Consumer Goods	4%	38%
Automotive	-2%	44%
Hardware & Electronics	-10%	34%

"Industry" refers to a sector of commerce
Impression refers to the number of times an ad is rendered for viewing by user

Source: AdRelevance

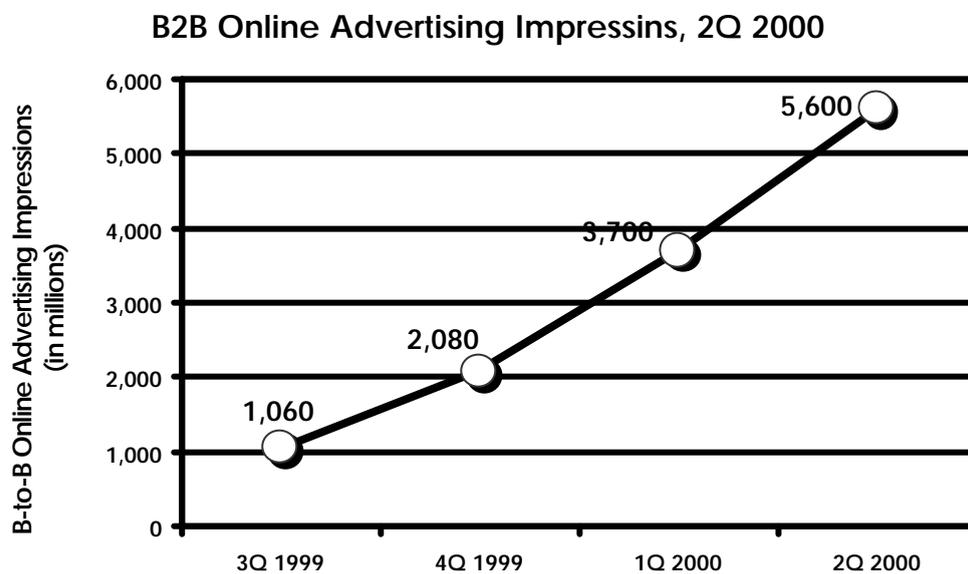
According to data collected by AdRelevance, the number of B2B companies advertising online has increased 58 percent from October 1999 to February 2000, compared to an average of only 17 percent for all other industries.²⁴ In the same period, B2B advertisers have increased per ad spending by 66 percent based on the average number of ad impressions, or 5.0 percent total online advertising.

²⁴ AdRelevance, IT firm specializing automated delivery of online advertising data, online, <http://www.adrelevance.com>

The following statistics show the remarkable growth of B2B online advertising in terms of market size, market share and market growth.

- **Market size** : B2B demonstrates a strong rise in online advertising impressions

<Figure 3>



Source: AdRelevance

The online advertising of the B2B industry is growing fast in the mainstream online media from over one billion online advertising impressions in the third quarter of 1999 to 5.6 billion in the second quarter of 2000.²⁵

²⁵ Jupiter Communication-Media Metrix B2B report, online, <http://www.mediametrix.com>

Due to the increased targeting capabilities online, more B2B companies will continue to commit a greater portion of their advertising budgets to the Internet.²⁶ And fully 50 percent of online advertising spending by B2B companies will take place on mainstream online media such as Yahoo and Business Week.

Online advertising networks make purchasing inventory on a wider array of smaller sites more efficient than in the off-line world.²⁷ As such, the other 50 percent of B2B online advertising budgets will be spent on more focused business trade publications, such as Agriculture.com and on Net Markets (online intermediary that connect fragmented buyers and sellers, such as Vertical Net).

²⁶ Online advertising report from Jupiter-Media Metrix,online, <http://www.jup.com>

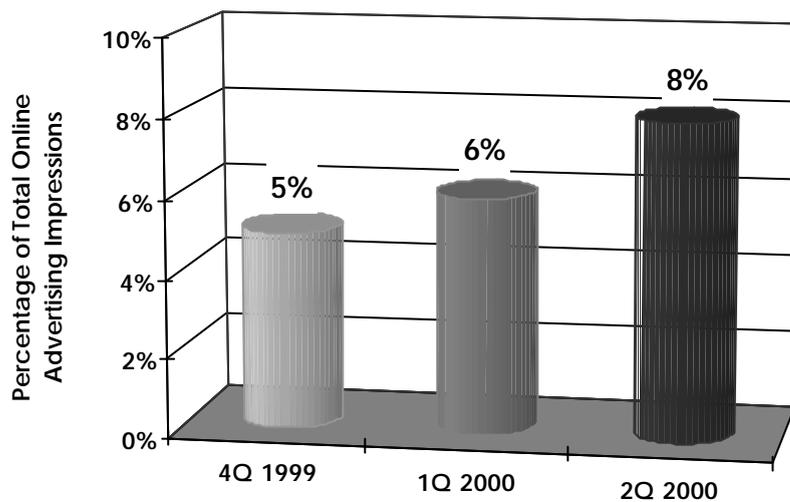
²⁷ Jupiter communications, Analyst Insight, online, <http://www.jup.com>

- **Market share** : B2B accounts for growing share of online advertising

Impressions

<Figure 4>

B2B Market's Share of Online Advertising Impressions, 2Q 2000



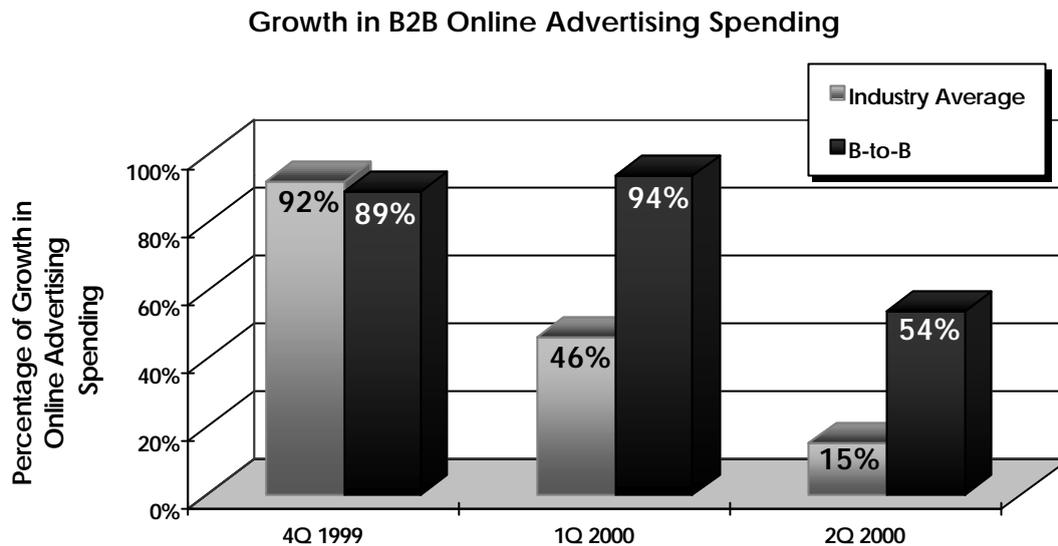
Source: Engage.com

The share of online advertising impressions of B2B market has grown from 5 percent of the total online advertising impressions in the fourth quarter of 1999 to 8 percent of the total online advertising impressions in the second quarter of 2000.

At 8 percent, or 5.6 billion of the total advertising impression in the mainstream online media, the B2B market is the fourth largest category of online advertising spending, following Web media with 25.2 billion impressions, retail with 14.8 billion impressions, and financial services with 10.1 billion impression in the second quarter of 2000.

- **Market growth** : B2B market outpaces the Industry average in online advertising spending

<Figure 5>



Source: Jupiter Communication

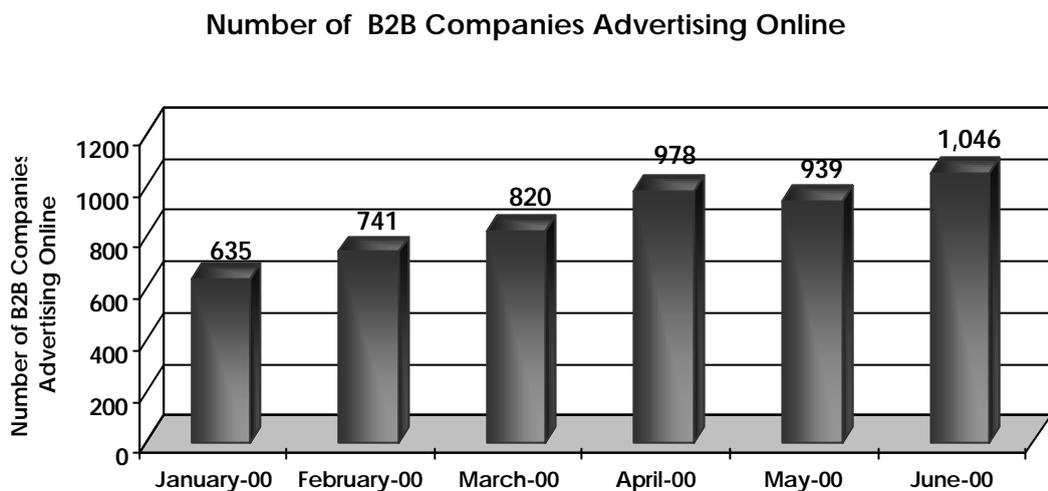
The growth in total online advertising spending has slowed over the last several quarters, dropping from a 92 percent quarterly growth rate in the fourth quarter of 1999 to 15 percent in the second quarter of 2000.²⁸ However, due to the relative immaturity of the B2B market and, therefore, its much smaller base of online advertising impressions, it is the fastest growing segment of online advertising. In the fourth quarter of 1999, its growth rate was just below the industry average at 89 percent. However, it has surpassed the industry average with 94 percent

²⁸ Media Metrix, Analysts Insight, online, <http://www.engage.com>

growth in the first quarter of 2000, slowing to 54 percent in the second quarter of 2000.

- **Market driver** : More B2B companies see value in online advertising

<Figure 6>



Source: Adknowledge

A main driver in the growth of B2B online advertising spending is the number of companies shifting their advertising channel to the Internet.²⁹ Growth in the number of B2B companies embracing the Internet as an advertising vehicle is 10 percent per month, rising from only 635 in January 2000 to over one thousand in June 2000.

This number will continue to grow as more traditional B2B companies shift a portion of their advertising budget to the Internet.³⁰ That is, as online advertising

²⁹ Jupiter Communications, Analyst Insight, online, <http://www.jup.com>

³⁰ Jupiter Communications, Analyst Insight, online, <http://www.jup.com>

proves itself to be efficient and easily tracked, an increasing number of B2B companies – both online-only and traditional – will spend more of their advertising budget on online advertising.

II-2-2 Trend of B2B Online Advertising

- *B2B online advertising market is more fragmented than that of B2C:*

The B2B ads are spread out over a number of publishers. According to AdRelevance, 80 percent of B2B online ad impressions are hosted on 25 publisher sites. Compared with the more mature markets, such as financial services and retail, where the majority of online advertising impressions are distributed across eight or ten publisher sites, B2B online advertising is highly fragmented.

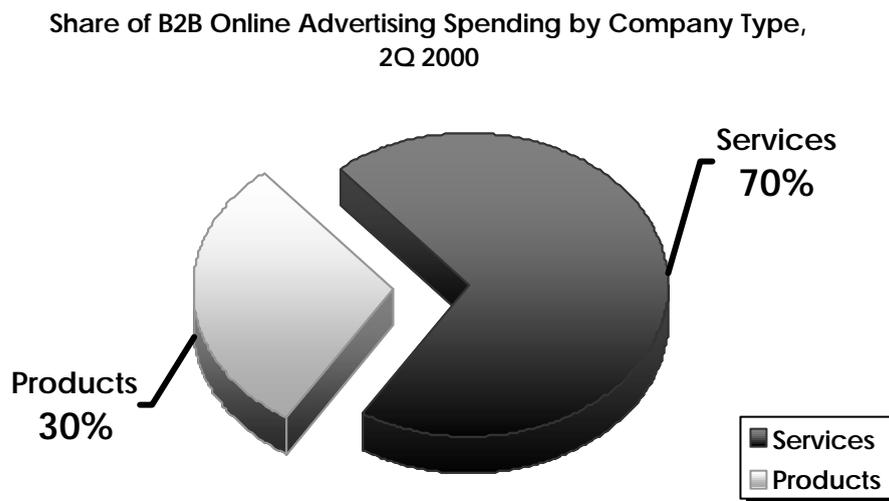
- *Service companies spend more money than product companies in B2B online advertising:*

Today, service companies, such as Anderson Consulting, Federal Express, and Citicorp, represent 70 percent of online advertising spending by B2B companies on mainstream online media, while product companies, such as Sun, Grainger, and Xerox, represent only 30 percent. This 70:30 ratio will be maintained for the foreseeable future.³¹ Most service companies target a broader range of businesses

³¹ Engage, online business media, online, <http://www.engage.com>

and, therefore, will continue to be the dominant B2B advertising spenders on sites with the greatest reach.

<Figure 7>



Source: Media Metrix

To date, most online users are part of the target audience for service companies. As more of the B2B product companies' target audiences come online, these users will be found on more-focused business trade sites and on Net Markets³². As such, product companies will increase their online advertising spending on smaller, focused sites, rather than on mainstream online media, keeping the above ratio intact.³³

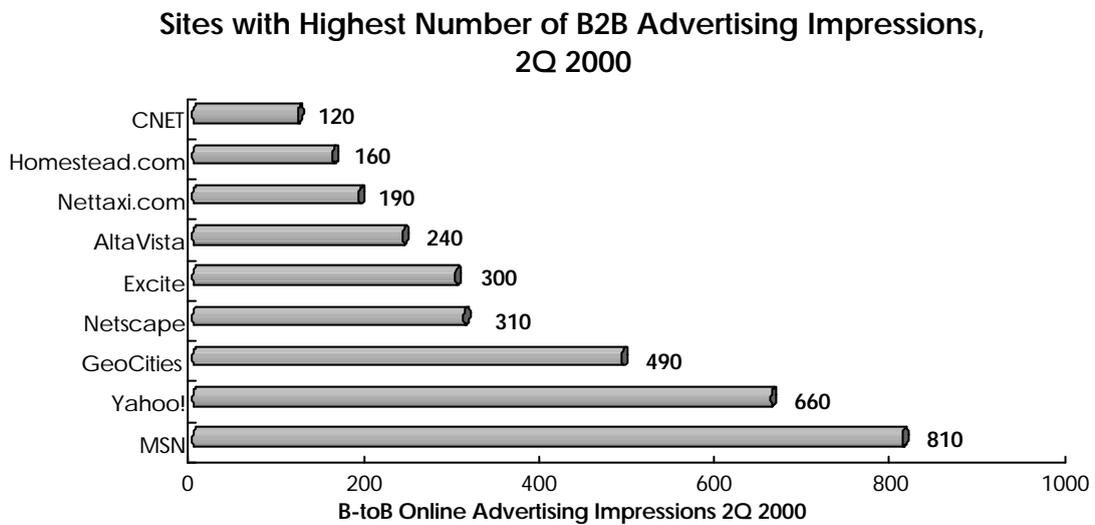
³² Online intermediaries that connect fragmented buyers and sellers, such as VerticalNet

³³ Jupiter-Media Metrix, online, analyst insight, online, <http://www.mediametrix.com/data>

- *B2B advertisers seek increasing at-work users:*

The largest volume of B2B online advertising impressions is on the same sites that lead overall advertising impressions, including MSN and Yahoo.

<Figure 8>



Source: AdRelevance

While B2B companies are wise to seek the reach that these highly trafficked sites offer, in the future B2B companies will seek more focused sites that reach a more targeted audience, even if in smaller quantities.³⁴ Sites with a higher percentage of their audience from work or with more business- focused content will likely threaten the ranks of today's top B2B publishers, as ranked by B2B advertising impressions. In addition, mainstream online media will have to fight the onslaught of business trade publications and Net Markets as attractive online advertising

³⁴ Jupiter-Media Metrix, online advertising report, online, <http://www.jup.com>

opportunities for B2B companies, particularly product companies.³⁵ VerticalNet's early success in winning online advertising revenue from B2B companies is just one example of the coming competition for this growing market. In the second quarter of 2000, VerticalNet earned over \$20 million in online advertising revenue – made up largely of online storefronts and sponsorships, rather than banner ads.

<Table 3>

Sites That Accept Advertising with Highest Percentage of Unique Visitors from Work, May 2000

Ranking	Site	Unique Visitors per Month (in 000s)	Percentage of visitors from Work
1	MarketWatch.com	3,163	50%
2	USAToday.com	2,307	48%
3	CNN.com	4,969	47%
4	E*Trade.com	2,221	46%
5	WashingtonPost.com	1,923	45%
6	CNNsi.com	2,483	44%
7	Travelocity.com	6,034	43%
8	CitySearch	2,875	43%
9	Slate.com	1,911	43%
10	Expedia.com	6,427	42%

Source: MediaMetrix

Few highly trafficked sites have a high percentage of their users coming from work. In fact, among the Media Metrix top 200 sites for May 2000, only

³⁵ CyberAtlas, online marketer's guide to online facts, online, <http://www.cyberatlas.internet.com>

MarketWatch.com reaches the 50 percent mark. However, many news, local content, and travel sites, such as CNN.com, CitySearch, and Travelocity, win a significant portion of their audience from the office. While none of these sites are currently the top publishers in the B2B online advertising category, they have significant potential in helping B2B advertisers target the at-work audience. While many of these sites are largely for personal Internet use at work, their audiences comprise a significant number of users who are at the office and often make purchasing decisions, making these some of the sites with the most promise of participating in the future growth of B2B online advertising spending.

The data gathered by AdRelevance also suggests that the majority of B2B advertising is taking place outside the consumer corridors of mainstream Net traffic.³⁶ Although all industries are more likely to advertise on portals and search engines, B2B advertisers are relatively less likely to do so than their B2C counterparts. Similarly, B2B companies are more likely to advertise on computer/technology, business/finance, and general news sites where B2C companies are relatively scarce.

These findings are in line with recent Media Metrix findings that show at-work Internet users are more likely to browse news, financial, and technology sites, while home users frequent portals and search engines.³⁷

³⁶ AdRelevance, online advertising solution company, online, <http://www.adrelevance.com>

³⁷ CyberAtlas, online marketer's guide to online facts, online, <http://www.cyberatlas.internet.com>

II-3 Effective Online Advertising

To get the most out of advertising online – whether wanting to sell a product, drive traffic to site, or just build a Net presence – knowledge about both advertising and the Web is essential. No matter what the motivation is, keeping up with this volatile new advertising market is not easy. Along with new ways of creating effective ad campaigns has come a lot of confusion and misinformation.

Typically, online advertising programs incorporate three common objectives: creating awareness, generating traffic, and driving sales.³⁸ While many companies pursue all three, it is usually best not to try to achieve multiple goals in a single ad. Once a company determines to advertise online, setting specific goals for the campaign, figuring out where to put ads, and then measuring their effectiveness are essential. There are many factors that influence the effectiveness of online advertising. Here are the lists of elements that are most influential to success from the advertiser's point of view.

Creative

As with any advertising campaign, success often hinges upon creativity.³⁹ Is the ad creative enough to catch the consumer's attention, communicate a positive branding and/or influence purchase behavior? These questions are often tough to answer even for time-tested mediums such as print, television and direct mail.

³⁸ Workz.com, online small business guide, online, <http://www.workz.com>

³⁹ Ad Resource, online, <http://www.adres.internet.com>

However, solid marketing strategies combined with effective creativity can significantly impact a company's revenues. This is even more true on the Internet, where users need to be enticed to click on a banner which will deliver them to the real payoff, the site or page which brands, captures information, or completes the sale.

Targeting

The Internet's ability to target consumers leads to great efficiencies. Advertisers not only have the ability to reach specific target audiences only (avoiding waste), but also to learn more about consumers so that targeting them is done more efficiently in the future.

Frequency

Setting an optimal frequency can be the factor that determines the effectiveness of any advertising campaign. Setting frequency too high leads to waste; set it too low and advertiser's message may not get through. Advertisers are continually striving to determine this balance.

Content

Whether advertising online or in any other vehicle, placing ads in the right content vehicles or adjacent to a complimentary editorial can significantly influence the success of an ad campaign. After all, that is why advertisers place ads in certain

magazines and not in others. The same is true on the Internet. Placing an ad relevant to the interests of the user will almost always result in higher click-through.⁴⁰

⁴⁰ AdRelevance, online, <http://www.adrelevance.com>

III. PRICE CALCULATION METHODS

III-1 Price Calculation of Banners

Advertisers can count how many times a web site was hit, which is how many requests for any page and graphic a computer server receives. Hits are easy to measure but they are difficult to translate and compare across different web pages. This is because a page request can generate 2 hits or 22 hits, depending on how the page is designed. For this reason there are some suggested methods for use in the real world to measure how many times online ads are exposed to Website visitors to calculate the price of online advertising, and also there are many ways of calculating the price of a banner. Definitions of a variety of calculation methods and measurements for number of exposure of banner are as follows.

Impressions (Ad Views)

The number of times an ad banner is downloaded and presumably seen by visitors. If the same ad appears on multiple pages simultaneously, this statistic may understate the number of ad impressions, due to browser caching⁴¹. There is currently no way of knowing if an ad was actually loaded. Most servers record an ad as served even if it was not.

⁴¹ Used pages on a user's disk. If a site is revisited, browsers display pages from the disk instead of requesting them from the server. As a result, servers under-count the number of times a page is viewed.

Hit (Page Hit)

Estimating a measure of a web site's popularity in terms of traffic. Count one hit each time a browser request is made from a web server. For example, a page containing 5 images counts 6 hits each time it is viewed (once for each image and once for the page itself).

CPM (Cost Per Mille)

The price of banner ads in "Cost Per Thousand Impressions" basis. An impression (also referred to as an "exposure" or "page view") occurs when a visitor to a Web site views a page where an ad is displayed, *whether the ad is seen or not*. Whenever a page is "served" to a computer screen, measurement software counts the "impression." If an advertiser's CPM is \$25 then you get 1000 impressions of your banner on his/her site for \$25.

A FORMULA

$$\text{CPM} = 1,000 \times (\text{Total Cost} / \text{Total Impressions})$$

CPC (Cost Per Click)

Cost-per-click is an Internet marketing formula used to price ad banners. Advertisers will pay Internet publishers based on the number of clicks a specific ad banner gets.

A FORMULA

$$\text{CPC} = \text{Total Cost} / \text{Total Clicks}$$

CTR (Click-Through Rate)

Click-through ratio. A method of rating how many times a banner is *clicked on*. A ratio of the number of times a banner is shown to the number of times it is *clicked on*. For example, if a banner has a CTR of 20:1 it means that 1 out of 20 people have clicked on it (i.e. 5% of the people who viewed it).

A FORMULA

$$\text{CTR} = 100 \times (\text{Clicks} / \text{Impressions})$$

CPA (Cost Per Action – for banner ads)

Advertisers only pay for the visitors who take specific kind of action that advertiser expects them to do. Action might include clicking on specific banner and then signing up, filling out a form, or purchasing something on the website.

This is most common for Affiliate Programs. This is the best type of rate to pay for banner advertisements, and the worst type of rate to charge. This type of payment arrangement is already regarded as an endangered species, and will soon become extinct.

III-2 Comparison of Pricing Models

Among the above pricing models, the two most commonly used ones are CPM (Cost per thousand impression) and CTR (Click-through rate). CPM is basically based on '*impression*' that is the number of times an ad banner or a Web page that contains ad banner is downloaded. CTR is based on the number of '*click*' an ad banner receives. We can examine how the models differ in terms of cost effectiveness through examples.

'Impression pricing model' with 'Click-through pricing model'

The reason why a comparison of these two pricing models is necessary is because these two models are the most commonly used in the real world, but also because methods of cost effectiveness measurement differs from each other. A comparison will help discern which pricing model has better a cost efficiency with the same effectiveness. In order to do this, the two models should be calculated in one equation as followed.

Comparison A : (Click-through CPM) X CTR = Impression CPM

Comparison B : (Click-through CPM) X CTR > Impression CPM

Comparison C : (Click-through CPM) X CTR < Impression CPM

CPM on the left side of each equation (comparison A, B, C) is ‘**thousand click**’ and that of right side is ‘**thousand impression**’. However, the calculation unit of both sides of the equation will be the same with ‘**thousand impression**’ by having both sides of the equation multiplied by the ‘**click-through rate**’. The purpose of unifying the calculation unit of both pricing models is to standardize both pricing models under the same condition for comparison.

In the above comparison, both pricing models have the same effectiveness if the result is comparison A. If the result is B, then the ‘impression pricing model’ has a better cost-efficiency. And with the result C, ‘click-through pricing model’ has a better cost-efficiency. At this point, the CPMs of both sides of equation are *invariable numbers*. Therefore the decisive variable condition for the comparison of both is eventually the click-through rate.

In order to make a comparison, an assumption of an ‘ads effectiveness’ and a definition of ‘Click-through Rate’ are needed.

- *Ads effectiveness*: Visitors click on ad banner and are led to linked page
- *Click-through Rate (%)*: A ratio of the number of times a banner is shown to the number of times it is clicked on

If the assumption and definition are defined as above, the effectiveness of the click-through pricing model is now clear. That is, the CPM and the ad effectiveness are proportioned. And a measurement of the effectiveness of the impression-pricing model is possible by having CPM multiplied by click-through rate (%).

Example case)

Which pricing model do advertisers prefer if conditions of unit price of banner and CTR of a portal site are followed?

Click-through Price: \$200 CPM (cost per thousand clicks)

CTR : 3.0%

Impression Price: \$30 CPM (cost per thousand impressions)

By putting the numbers above into a formula, we are able to see the difference of the effectiveness of both pricing models.

$$\text{\$200 CPM} \times 0.03 < \text{\$30 CPM}$$

$$\text{\$6 CPM} < \text{\$30 CPM}$$

With the above result, the click-through pricing model is 5 times cheaper than the impression-pricing model. That is, in order to produce the same amount of effectiveness, the ‘click-through pricing model’ costs \$6, and the ‘impression pricing model’ costs \$30.

At this point, we can raise the question like this;

Supposing CPM of both pricing models doesn't change (\$200 for click-through and \$30 for impression), how much should CTR of portal site be maintained to produce the same amount of ad effectiveness?

The equation is drawn like this;

$$\text{\$200 CPM} \times \text{CTR} = \text{\$30 CPM}$$

$$= 0.15$$

At least 15 percent of the CTR should be guaranteed in order to produce the same amount of effectiveness under the given condition of CPM.

III-3 Case Study of Pricing Model and Ad Effectiveness

Measurement

In the previous portal site example, the price of impression is set too high in spite of the low CTR compared to CPM. In many cases in the real advertising market, this kind of price system is practiced and applied and the CTR is generally not higher than the sample site (3%). According to the research done by Forbes, average CTR is 3 percent.

‘Only 3% of people who see a banner actually click on it’

The fact that CTR is generally not higher than 3 percent is also proven from the Songline’s survey as well. The subject of the survey was four major Website publishers (The Website where advertisers put their ad banner). The following table contains the anticipated rate that each advertiser expects from visitors in advance, and the result of survey, actual click rate of visitors. Here, the Cost-per-Click is price for one-click –not a thousand clicks of ad banner.

<Table 4>

Rate Comparison by Companies

Click-through	Anticipated (%)	Actual (%)	Cost-per-Click (\$)
Infoseek	1.1	1.1	0.52
WebCrawler	0.7	0.7	0.51
HotWired	7.0	2.8	4.76
Mr. Showbiz	5.0	1.5	N.A.

Source: Songline, survey 1999

The average impression price is \$25 CPM and the click-through price is \$250 CPM. In order to produce the same amount of ad effectiveness, the CTR should be maintained at 10 percent. However, the real average CTR is only 1.775 percent,⁴² which means that the impression price is absolutely higher than that of the click-through. However, according to many Internet market research institutes, not only advertisers but also Website publishers or ad agencies prefer the ‘impression pricing model’ (which is called CPM in general) in spite of price difference (or cost efficiency point of view).

⁴² Songline, online, <http://www.oreillynet.com/>

The reasons are shown below:

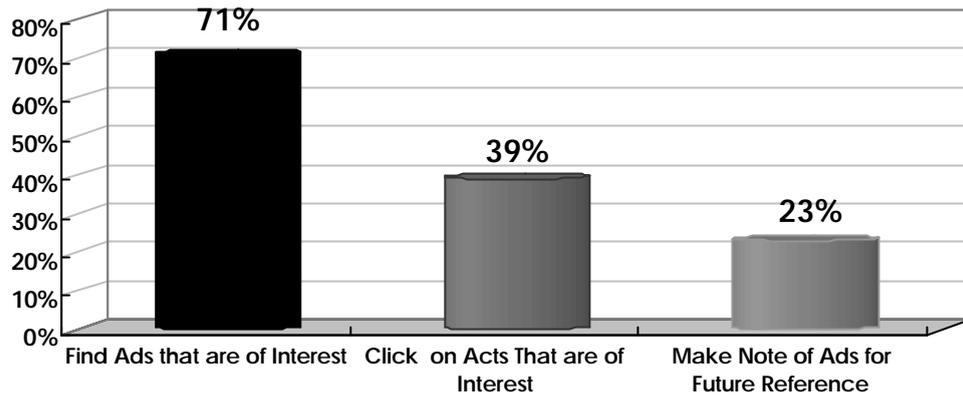
- **‘ Assumption is basically wrong’**

Assumption of ads effectiveness: *Visitors click on ad banner and are led to a linked page*, which was given in order to make a comparison, is wrong. In actuality, advertisers and Website publishers believe that ‘Ad effectiveness’ can not only be acquired by a visitors’ clicking on banner, but also can be acquired by banner’ s simple exposure to the visitors as well.

Greenfield Research finds that about a third of the people who see an online advertisement that interests them make note of these ads for future reference rather than clicking through immediately. By tracking not only who clicks on an ad, but also who sees it, marketers can gauge whether their advertising drives consumers to their site, even if it doesn’ t drive consumers to click through the banner.

<Figure9>

Browsers Respond to Online Advertising Even if They Don't Click



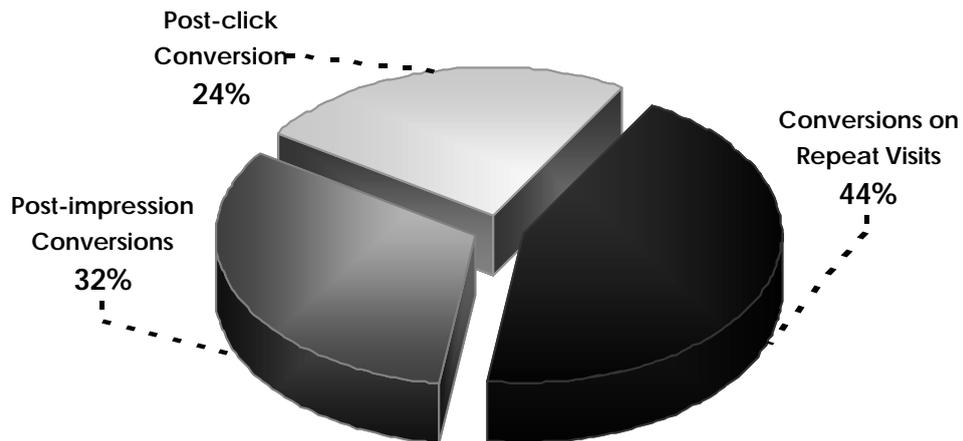
Source: Engage.com

Engage's research shows that the impact of online advertising on consumers who don't click through is considerable.⁴³ More conversions come from users who visit a site and don't click on the banner (post-impression conversions) than from those who do (post-click conversions).

⁴³ Engage, online business media, online, <http://www.engage.com>

<Figure 10>

Biggest Impact of Advertising Is Among Browsers Who Don't Click



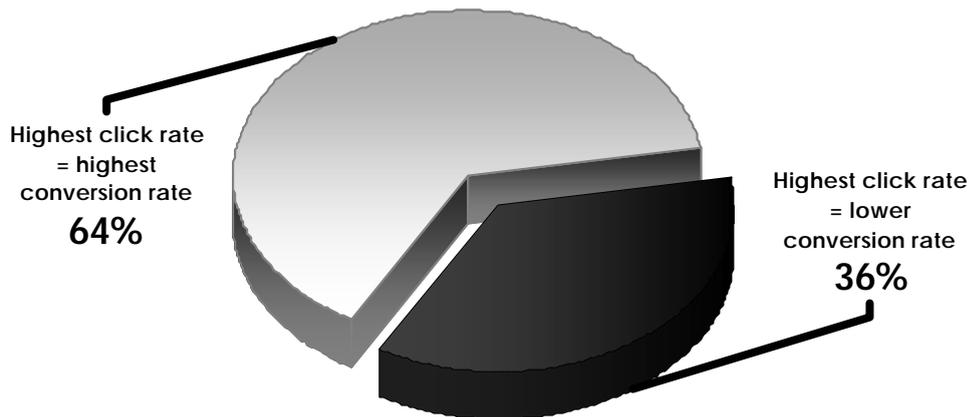
Source: Engage.com

Banner advertising is often faulted for distracting users from what they are doing. Banners can only have a limited impact because users will only click on an ad if it is directly related to what they are trying to accomplish on that page.⁴⁴ Research done by Engage suggests a great many more people are impacted by online advertising and refuse to let it distract them from what they are doing by clicking through immediately. After all, it was found that the second most common thing to see next to a computer after a mouse and a mouse pad is a pen and a pad of paper.

⁴⁴ Engage, online business media, online, <http://www.engage.com>

<Figure 11>

CLICK RATES VS CONVERSION RATES BY CREATIVE EXECUTION



Source: Adknowledge 2000

Figure 11 shows that in only 36 percent of campaigns did the creative execution with the highest click-through rate also deliver the highest conversion rate, which implies that click rates are a poor indicator of creative performance.⁴⁵

- **‘Expectation about Creative banner design’**

Even though an banner ad is exposed to visitors millions of times, no cost is calculated if visitors don't click on it. Therefore advertisers might not want to waste their time and effort in making banners fancy and creative. However, CTR

⁴⁵ Engage, online business media, online, <http://www.engage.com>

can be lifted from 3 percent up to 20 percent to 30 percent by the effort of making a banner creative in order to draw the visitors' attention. From the actual example from research, the CTR is increased from 1.1 percent at the beginning up to 8 percent by the effort at creative banner design. For more effectiveness and CTR, ads can be placed anywhere on a page, although ads are more successful when they are displayed near the top of the page. This ad will deliver higher click-through than the same ad placed at the bottom of a page. Some sites use frames to display advertising more prominently.

III-4 More Detail about CPM

As was explained previously, CPM is "cost-per-thousand", a standard metric used in the offline world for buying and measuring media.⁴⁶ Most advertisers are trying to reach either as large a general audience as possible or as many people fitting a certain "targeted" demographic and/or psychographic description as possible. One way to quantify and price these numbers for advertising purposes is to apply a cost-per-thousand metric. The advertiser pays X dollars to reach - or make an impression on - 1,000 people.

In web marketing, CPMs are generally applied to impressions or pageviews.(An impression is defined as every time an ad is loaded to a unique visitor.)

⁴⁶ Emarketer, advertising report, online, <http://www.emarketer.com>

CPMs, whether used purely, or in some hybrid approach in conjunction with a performance-based measure, are the most common method for determining online advertising rates.

CPMs are governed by the laws of supply and demand. Supply is dictated by the quantity or inventory of available ad pages, while demand is a function of how much advertisers are willing to pay to reach people on a given website.

<Table 5>

Average CPM by Genre		
Genre	Q3/Q4 1999	Q1/Q2 2000
Health & Fitness	\$30.00	\$42.50
Movies & Television	\$28.84	\$34.38
Yellow & White Pages	\$20.00	\$23.67
Kids & Family	\$23.19	\$26.29
Games	\$40.00	\$42.50
Travel, Maps and Local	\$23.35	\$24.13
General News	\$28.50	\$38.92
Search Engine	\$37.23	\$37.47
Community	\$25.00	\$25.00
Music & Streaming Media	\$19.70	\$25.05
Personal Expression	\$26.68	\$25.50
Portal	\$27.50	\$27.08
Business & Finance	\$41.75	\$38.30
Society, Politics & Science	\$33.75	\$29.75
Sports & Recreation	\$33.29	\$27.53
Automotive	\$39.15	\$31.93
Comics & Humor	\$31.44	\$23.75

Source: AdRelevance

■ **What Drives CPMs Up (or Down)**

- i. Aggregate traffic levels at site (Supply)
- ii. Desirability of ad pages/audience (Demand)
 - A. Degree of targeting on site
 - B. Degree of stickiness on site
 - C. Quality of content/editorial

Most industry analysts agree that the immutable laws of supply and demand will continue to drive down the average CPM rate to a significantly lower market equilibrium. How far down remains to be seen, but with an overabundance of ad pages relative to demand, a downward spiral is forecast for the near future.⁴⁷

Targeting

Obviously, the more targeted a site is, the more desirable it is to an advertiser trying to reach that target. On the one hand, the Internet makes it possible to tally with some accuracy what users are looking at and for how long.

Yet most companies have been unsuccessful at getting users to reveal any personal information, making it difficult for advertisers to know whom they're really targeting.

⁴⁷ Marketcast, Internet market statistics, online, <http://www.marketcast.co.kr>

<Table 6>

Rule of Thumb for CPM Pricing			
Website Category	Traffic	Demographics	CPM Pricing
Portal (e.g., Yahoo!)	Very high	Broad	Low
Traditional Content Providers	Moderate	Broad - Narrow	Higher
Niche	Low	Narrow	Highest

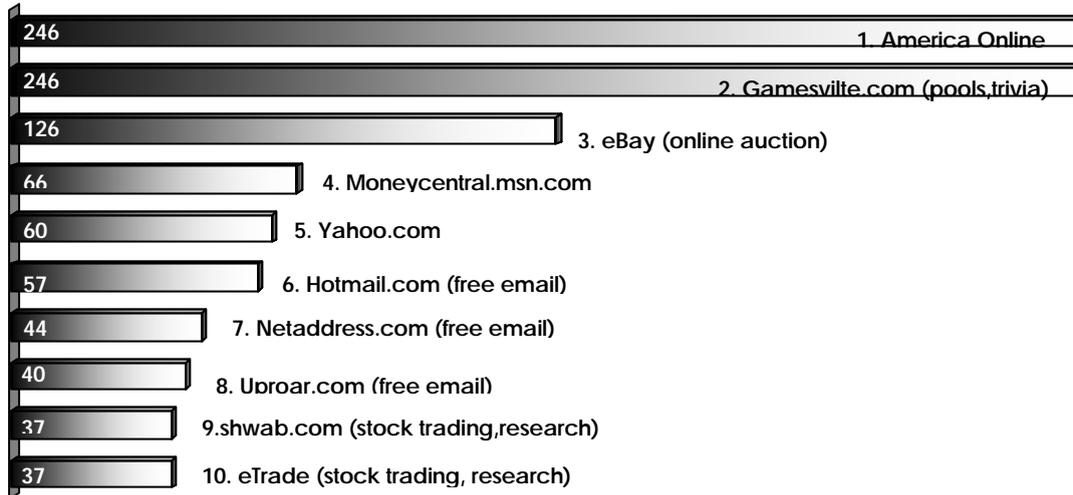
Source: eMarketer, 1999

Stickiness Matters

Until recently, Internet sites have competed for ad agencies' attentions mostly on the basis of how many visitors their sites attracted (raw traffic). But savvy web executives have recently begun to factor in the extent to which visitors "stick around" on the site. People spend time on sticky sites and are therefore more likely to see a given advertiser's banner. Figure 12 provides stickiness data for the top websites, according to web ratings company Media Metrix.

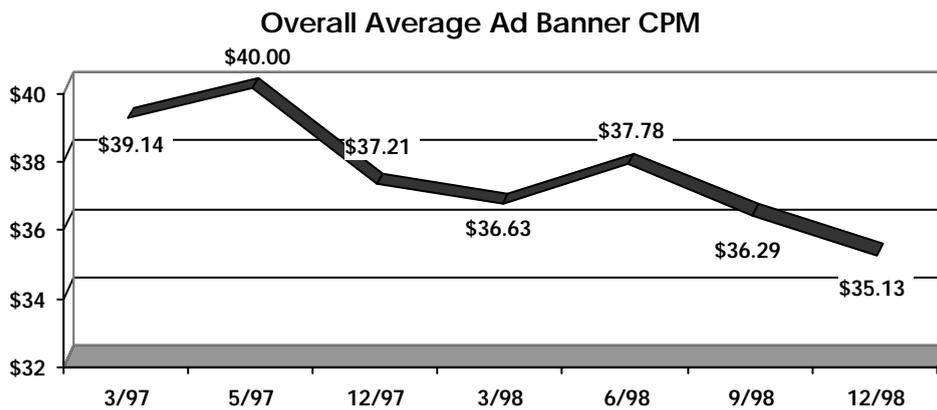
<Figure 12>

Top 10 "Sticky" Sites



Source: Media Metrix

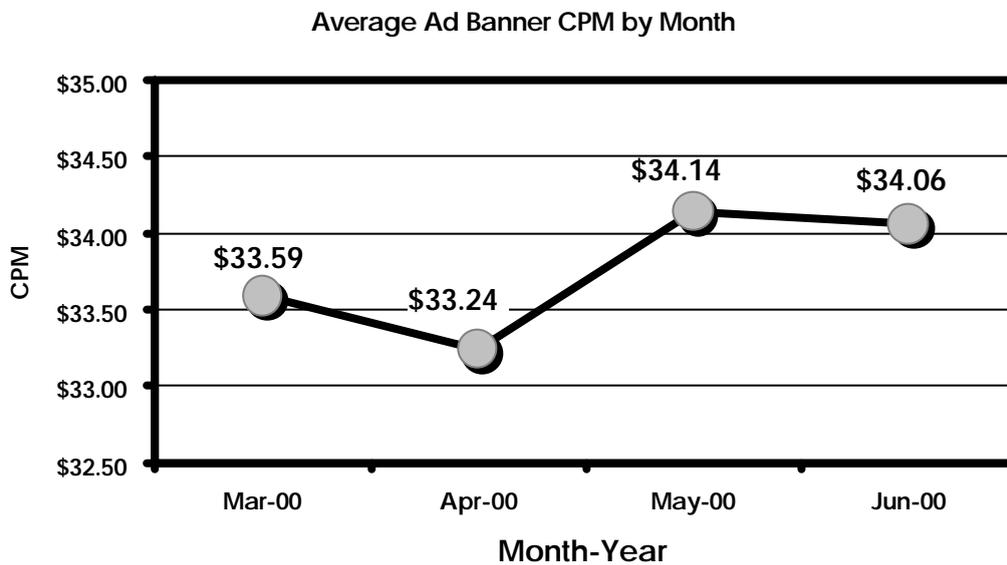
<Figure 13>



Source: Adknowledge

Though there are big differences among the price of CPM according to popularity of Websites, the overall CPM has been gradually lowering during 1998 and 1999 as indicated in Figure 13. And Figure 14 shows that the overall average CPM rate enjoyed a modest increase of 1 percent during the second quarter of this year. This firmly establishes the trend towards rate stabilization.

<Figure14>



Source: Adknowledge OAR, Q2, 2000

As mentioned previously, "hits" and "page hits" are not favored as measurement units because a hit is registered every time any text or graphic file is delivered, whether advertising is displayed or not. A page hit, or HTML hit, is registered every time a complete HTML page, including text and graphic files is delivered. The ratio can easily be 10 or more hits or 2-4 page hits to actual impressions.

■ **Comparing Online vs. Offline CPM**

A critical question for marketers deciding where to put their advertising budget is whether Internet CPMs are cost efficient relative to other, more traditional media vehicles such as television, radio and print. Much debate has centered on justifying the seemingly over-inflated web-based CPMs.⁴⁸

Certainly, in the past, most advertisers have paid at least as much to reach an Internet audience as they would for TV or magazine ads.

However, a closer look at the numbers is required. In Table 7, Jupiter Communications compares CPM rates between TV, print, an online service and a website. On the face of it, the web CPM seems expensive relative to television.

<Table 7>

CPM Rate Comparison Across Selected Media				
Medium	Vehicle	Cost	Reach	CPM
TV	30 network primetime	\$120.000	10 million Households	\$12
Consumer Magazine Ad	Page, 4-color in Cosmo	\$86.155	2.5 million paid readers	\$35
Online Service	Banner on CompuServe major topic page	\$10.000 per month	750.000 visitors	\$13
Website	Banner on Infoseek	\$10.000 per month	500.000 page views per month	\$20

Source: Jupiter Communications, 1998

⁴⁸ Marketcast, Internet market statistics, online, <http://www.marketcast.co.kr>

Yet these figures fail to take into account that, while television is a mass medium, the web is a much more targeted one, and in fact, reaches a highly desirable audience of relatively affluent, well-educated people.

If the TV target audience is refined by adding desirable age, income and education screens, the television CPM jumps dramatically.

<Table 8>

Network Primetime Reach and CPM vs. Select Demographics		
Target Definition	Audience (Estimate)	CPM (Gross)
US TV Households	8,526,000	\$12.52
Adults 18-49	6,361,200	\$16.78
Adults 18-49 and \$40K + Household income	3,796,200	\$28.12
Adults 18-49, \$50K + Household income and Head of Household 1 + year of college	2,171,700	\$49.15

Source: Nielsen 11/97

By adjusting the primetime CPM from \$12 to \$49 to account for the premium required to reach an upscale target audience, similar to that found on the web, the Internet CPM suddenly becomes a bargain. Thus, what people need to understand about the net is that it's not the best place for mass marketing. It's the best media vehicle for micro marketing on a massive scale.⁴⁹

Over time, as the television audience continues to shrink and fragment, the relative ROI for online ads will increase.

⁴⁹ Heyman, Darian. *Beyond Interactive*. eMarketer, online, <http://www.emarketer.com>

III-5 Improved Model for Online Advertising ROI

There are various calculation methods for pricing online advertising that have become increasingly sophisticated. The online audience has become more sophisticated as well. In turn, the model for tracking results also needs to become more sophisticated.

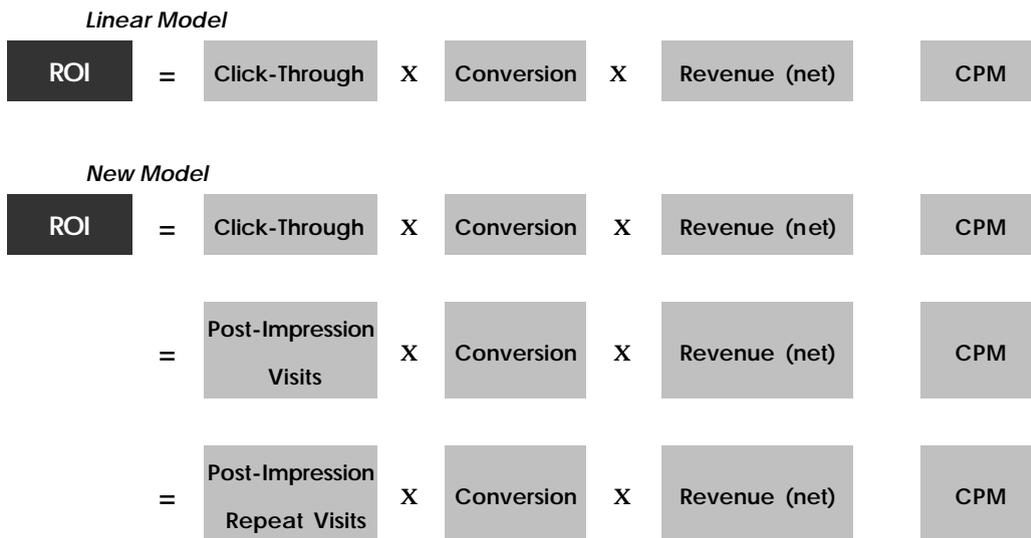
The old model for measuring return on investment was a simple linear equation based on the revenue driven by click-throughs. Some models are more sophisticated than others, using the lifetime value of the customer rather than the average transaction revenue in order to measure the return of acquiring a customer rather than just acquiring a sale. When the click-through rate began to fall dramatically in 1999, marketers felt a lot of pressure to seek lower CPM media to keep their online marketing model working. This also led marketers to seek cost-per-click payment structures for their advertising.⁵⁰ However, the previous chapter showed that marketing with a CPC⁵¹ formula may not be the best way to achieve efficient results. The audience that is reached with CPC media may not be an audience that will in turn convert on the targeted site.

⁵⁰ Engage, “Better methods for measuring the total Impact of Online Advertising”, online, <http://www.engage.com>

⁵¹ “cost-per-click” payment

<Figure 15>

ROI Models Need to Get More Sophisticated



By focusing on driving click-throughs, marketers are ignoring other avenues for achieving return from their advertising that may be as large, if not larger than, the click-through opportunity. Considerations about post-impression visits and post-impression repeat should be cared as an integral part of the ROI model for going beyond just click-throughs, which means that looking for results in the obvious places should change into shedding light on all areas where results can be found.⁵²

⁵² Engage, online business media, online, <http://www.engage.com>

V. CONCLUSION

As has been discussed so far, the reason marketers are using the Internet is that it gives them a means to approach an audience that was not possible before, and it can capture potential sales lead opportunities and measure customer response much quicker than ever. Additionally, some other reasons for using the Internet are that cross marketing/expanded marketing is much easier by raising customer loyalty on the Web, measuring effectiveness is easier and an instant response can be facilitated.

Because of such strength of the Internet as a marketing platform, online advertising in the domestic market has increased even during the IMF period and had continued to grow after that. However, despite this growth that signifies the move of the domestic Internet advertising industry from the introductory stage to the next growth stage, the strategy and overall level of Internet marketing is still weak. Internet marketers have yet to mount a campaign, advertising solutions such as sponsorships have yet to be seen and closed loop marketing campaigns are still in the future. A campaign based on a macro view is lacking, and efforts to collect and analyze user data in order to better understand user behavior are missing.

In order to practice effective online advertising campaign, understanding the present condition of the advertisers is essential for formulating an effective

strategy. Additionally, factors such as the purpose of the ad (whether its purpose is launching a new product, building a brand awareness, acquiring new customers, etc) should be taken into consideration. Throughout the study, various pricing methods for online advertising and effectiveness measurement were introduced. The most frequently mentioned, 'CPM' or 'Cost Per Thousand', whether used purely, or in some hybrid approach in conjunction with a performance-based measure, is the most common method for determining online advertising rates.

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AdRelevance <http://ww.adrelevance.com>

Ad Resource <http://adres.internet.com/>

Advertising Law Internet Site <http://www.webcom.com/~lewrose/>

Advertising Research Foundation <http://www.arfsite.org>

Anderson Consulting newsroom

http://newsroom.ac.com/newsarchive/11.99/newsarchive_112499.shtml

CyberAtlas <http://www.cyberatlas.com>

Digitrends <http://www.digitrends.com>

DoubleClick <http://www.doubleclick.net>

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SRDS on-line <http://www.srds.com>

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