ONLINE ADVERTISING: THE NEW MAGIC

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“You are the product. You feeling something. That’s what sells. Not them. Not sex. They can’t do what we do. And they hate us for it.”

- Don Draper, Creative Director of the advertising firm Sterling & Cooper, to agency copywriter Peggy Olsen

"You’re [expletive] with the magic!"

- Mel Karmazin (in 2003), then the chief operating officer of Viacom, when Google founders Sergey Brin and Larry Page and their recently recruited CEO, Eric Schmidt, explained how they only charge an advertiser when someone actually clicks on its ad.

(Mad Men images source: http://www.amctv.com:80/originals/madmen/downloads)
Introduction

As late as 2007, while e-commerce and digital media had already significantly disrupted other industries, advertising:

“...was one of the last significant business markets that remains opaque, manual, archaically complex, and requires a large relatively skilled set of humans to perform each transaction. ...every ad campaign can be traced back across a host of human driven processes. The final cost of the inventory is calculated through an opaque process that smells more like 1907 than 2007. The vast majority of hours spent by media buyers and media sellers are related to process and nailing down the minutiae of "the order." The buyer ends up with inventory that had no clear price when the discussion began, and frequently contains inventory they really didn't want or need tacked onto the package in order to meet the seller's sales goals. The seller ends up spending most of their time putting the package together and meeting the requirements of the order-taking process rather than working on strategic relationship sales.”

These media “buyers” and media “sellers” controlled the “pie”, and the industry still operated on creative relationships, processes and concepts which dated back to the modern industrial era of American advertising which began in the 1950’s.

Networked computing, largely due to the growth of online advertising, has played a significant role in revolutionizing this industry over the last decade. Online advertising grew out of the need to reach audiences over a different medium - forcing innovation and progressively transforming this old advertising model (manual, opaque and labor intensive) to a digital advertising platform based on automation, transparency and simplicity.¹ This new advertising platform, based on self-forming value networks and exchanges, requires a shift away from the organizing principle of the individual as a “consumer” to a strategic logic of “user engagement” spread across a wide range of transmediated advertising formats (display, video, pop-ups and placements, flash animation, text and mobile) - some of which are accelerating the market by the sheer force of their adoption rate.

¹ This notion of simplicity refers to the underlying automation of processes related to buying and selling advertising (liquidity, inventory, pricing, etc.). This definition of simplicity is challenged in an interesting fashion by David Spitz – MIT CMS Alumnus and Director of Business Development, WPP - in a recent C3 Futures of Entertainment 4 panel entitled “Free: Contemporaneous Business Models”, in which he offers the perspective that the major advertising holding companies are shifting to core services “which help clients deal with the growing complexity” brought on by the general market disruption. See: http://techtv.mit.edu/collections/convergenceculture:847/videos/4756-session-2-changing-audiences-changing-methodologies
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<th>Advertising Model since 1950</th>
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The growth of online video this last year was “blistering . . . with online video views more than doubling from 14.8 billion in Jan ’09 to 33.2 billion in Dec ’09 . . . Online video usage is now nearly ubiquitous in the U.S.” Smart phones and mobile video figure prominently as well. By 2011, Nielsen forecasts 90 million smart phone users will be watching mobile video.\(^4\)

Joseph Turow, in his book *Niche Envy: Marketing Discrimination and the Digital Age*, also makes a compelling argument for this online advertising system becoming the ‘test bed’ for the television advertising system of the future:

> “Just a bit into the 21\(^\text{st}\) century, then, advertising and media practitioners see “television” very much from the standpoint of the process of database marketing that already has begun to emerge on the internet [sic]. They know that the technology is not yet advanced enough to combine interactivity, targeted tracking, data mining and the

\(^{\text{ii}}\) Again, “simple” is referring to the underlying process for the acquisition advertising, not the array of creative services and strategic resources needed to navigate through the increasingly complex array of media choices available to the buyer.
cultivation of relationships in one advertising application. They are, however, testing all aspects of these activities with the sense that if they don’t understand new models, their competitors will. The new perspective that is emerging would have been hardly plausible to the medium’s gurus only 20 years ago, when audience “tonnage” was still the dominant coin of the realm. Now network personnel who still often sell tonnage – for example the salespeople at ABC, CBS and NBC - increasingly have to face advertising people at industry conferences who question the long-term viability of their business model. A new language of television strategy is evolving in tandem with targeting and customization.\(^5\)

One commentator (when blogging about the annual “TV upfronths” in May of 2009) characterized this change in the following fashion:

“For anyone who has worked for a major marketer, media agency or TV network, the month of May represents an interesting and eventually an evolutionarily outdated event – TV upfronths. The upfronths (for those that live under a rock) is the time of year that major advertisers and their agencies plan and buy a large share of their TV ads for the coming year. The networks package up their new series and existing hits and provide a dog and pony show that only the advertising industry can do.

Over the past few years we have witnessed some interesting changes in the upfronths. On the buy-side, in some instances major marketers pulled out, opting to plan and buy ad hoc throughout the year rather than commit to large scale upfronth buying (but not to a degree that affected media sellers or the tradition itself). On the sell-side, we’ve seen a full on integration of digital channels in the packaging of ad programs, and there are small upfronth events hosted by online only entities as well (mainly video), taking full advantage of the planning season. The upfronth sessions have as much to do with major networks selling online inventory, particularly video, as they do television. Well...maybe not as much, but it’s become increasingly more important to the networks.”\(^6\)

In 2010, advertisers in the U.S. market are forecast to spend greater than $20 billion on Internet ads, according to the Interactive Advertising Bureau (IAB). That is larger than the whole outdoor advertising industry, about 80% of the size of the magazine ad industry and half the size of the radio advertising sector, according to various estimates. Spending on Internet ads grew at a rate of ~50% last year compared to 10% for broadcast TV and 8% for the advertising industry overall.\(^7\)

This growth has brought more innovation into the business. Buyers and sellers of inventory started looking for new ways to generate revenue. These two groups wanted to sell more of their inventory at the right price to engage the right audience. Buyers struggled to find the most efficient way to access and target the online advertising inventory they wanted and to secure the right price. Publishers were left with unsold inventory – sometimes as high as 80%. This surplus is like an airline flying planes with four out of every five seats empty. Over the last decade, ad networks and ad exchanges have emerged to help “fill more seats” at the right price.\(^8\)
This Convergence Culture Consortium (C3) Research Memo provides an overview of how these systems fundamentally work. These networks and exchanges are examined from the perspective of the buyer and seller of online advertising – and attempts to distill further a working definition of “user engagement” within this context. However, a discussion framed purely by the market-driven dichotomy of buying and selling (“supply and demand”) is incomplete without first placing these current innovations in their larger cultural context.

Cultural History of Advertising

Advertising is experiencing not only a technological and structural transformation, but a profound cultural one as well. Vital to an understanding of this “major transformation” currently underway in the advertising industry is a discussion of the cultural history which sets advertising apart from other media systems (such as the history of cinema or fashion, for example, both of which have heavily influenced the cultural and creative practices of modern advertising).

In 2004, Advertising Age editor Scott Donovan suggested the “need for marketers to confront and release their historical biases. To redefine their world they “must rewrite the definition of the word “advertising” (which historically has operated on a model of lucrative, but inefficient, “magic.”).9

Efficiency and inventory currently have an undue influence on this redefining process. In a potential break from its storied past, the advertising industry is experiencing a re-organization around technological efficiencies - a change brought on by a huge market disruptor:

“Google engineers . . . have no way to quantify relationships or judgment. They value efficiency more than experience. They require facts, beta testing, mathematical logic. Google fervently believes it is a shaping a new and better media world by making the process of buying advertising more rational and transparent. In its view, the company serves consumers by offering advertising as information.”10

Advertising has never been expressly about efficiency and inventory - and it has never allowed technology to define its ethos as an industry. The component parts of the global advertising system are actually more easily discussed as cultural components of a communications medium dating back to the streets, bazaars, marketplaces and newspapers of cities like London and New York in the latter part of the 19th Century. Since about 1850, the advertising industry has gone through three distinct periods – all of which have contributed to the construction in the 20th century of a consumer culture driven by a broadcast media marketplace.
The Formative Years (1850-1900): A Legacy of Mistrust

“The Quack has become King.”

- Thomas Carlyle

Advertising fought for legitimacy during its formative years as a medium. As one local newspaper noted during the period: “it is not respectable. Advertising is resorted to for the purposes of introducing inferior articles into the market.” Others noticed “advertisements in type which three years ago would have been considered fit only for the street hoardings.” A Sears catalog delivered to rural areas was deemed “extravagant in its claims and undignified in its make-up.”

It was the spread of newspapers into rural areas by the United States Postal system - and the extension of persuasion methods used by patent medicine advertisements during this period (known as ‘quackery’) to other goods and services (“the draper, the grocer and their suppliers had followed the quack”) - which has left the modern advertising system with a legacy of mistrust: “Around 1900, the curative claims of ads for patent medicines were prominently questioned. Major publishers began to refuse to accept such ads, and the 1905 Pure Food and Drug Act was intended to get rid of the most dangerous patent medicines (which routinely contained alcohol, cocaine and even arsenic).”

It is this legacy of mistrust which Joseph Turow points out continues to this day, although the issues are specific to the new online advertising platform: “the digital media environment has brought new concerns about consumers’ unease. One risk of going online is that you may be bothered by advertising that you don’t want. Another is that you may be giving personal information that you wouldn’t want them to get. Database marketing is beginning to engender new forms of suspicion and institutional distrust” which “works against a sense of social belonging and engagement.”
Industrial Mode of Advertising Production and Delivery: 1900 – 1950

“The Consumer is King. His preference is law and his whim makes and unmakes merchants, jobbers, and manufacturers. Whoever wins his confidence controls the mercantile situation; whoever loses it, is lost.”

– C.C. Parlin

“He who had been a boy very credulous of life was no longer greatly interested in the possible and improbable adventures of each new day. He escaped from reality till the alarm-clock rang, at seven-twenty.

It was the best of nationally advertised and quantitatively produced alarm-clocks, with all the modern attachments, including cathedral chime, intermittent alarm, and a phosphorescent dial. Babbitt was proud of being awakened by such a rich device. Socially it was almost as creditable as buying expensive cord tires.”

– Babbitt by Sinclair Lewis (1923)

During this period, the frequency and reach of advertising evolved into a model of daily engagement through a direct relationship to the public via urban and rural daily newspapers. The advertisers strived to alter their relationship with the public from one of “quackery” to credibility and profits. Most notably, the advertising industry integrated some of the lessons learned from World War I posters and advertisements (a time ‘when new kinds of persuasion were developed and applied’ to unify the nation during the war effort), slowly shifting to methods of “psychological” advertising. The sellers of advertising in this era started by selling the advertising space and evolved very quickly into the model which ushered in the modern era of American advertising:

“. . .by the turn of the century, the modern system had emerged: newspapers had their own advertising managers that advanced quite rapidly in status from junior employers to important executives, while the agencies stopped selling space, and went over to serving and advising manufacturers, and booking space after a campaign had been agreed. Although extended to new kids of product, advertising drew, in its methods, on its own history and experience.

It is a fundamental shift away from a susceptibility to this “psychological” advertising model (based on persuasion) which Professor Jenkins frames as “participatory culture”: “If old consumers were assumed to be passive, then new consumers are active. If old consumers were predictable and stayed where you told them, then new consumers are migratory, showing a declining loyalty to networks or media. If old consumers were isolated individuals, then new consumers are more socially connected. If the work of media consumers was once silent and invisible, then new consumers are now noisy and public.”

Also, read Prof. Jenkins and Dr. Josh Green flesh out some early ideas on the moral economy - which later became the C3 Spreadability White Paper and will become forthcoming C3 book on Spreadability and the moral
The Mad Men: 1950 – 1994

The time to market, reach and frequency of advertising during this period was organized around broadcast television and a need to achieve economies of scale for national advertisers. Advertising agencies were at the center of this value chain. Advertising client relationships moved to serving and advising manufacturers through conceiving, pitching, selling, packaging and delivering advertising campaigns – the golden era of modern American advertising. A system opaque, complex and wrought with manual processes - but very, very lucrative. These cultural and creative practices are the ‘magic’ to which Mel Karmazin refers - and which sets the fictional advertising creative director Don Draper (and his colleagues at Sterling-Cooper) apart from the huddled masses. Raymond Williams, cultural studies theorist, spoke of this same phenomenon in his seminal article The Magical System:

“It is impossible to look at modern advertising without realizing that the material object being sold is never enough: this indeed is the crucial cultural quality of its modern forms. If we were sensibly materialist, in that part of our living in which we use things, we should find most advertising to be of an insane irrelevance. Beer would be enough for us, without the additional promise that in drinking it we show ourselves to be manly, young in heart, neighborly. A washing-machine would be a useful machine to wash clothes, rather than an indication that we are forward-looking or an object of envy to our neighbors. But if these associations sell beer and washing machines, as some of the evidence suggests, it is clear that we have a cultural pattern in which the objects are not enough but must be validated, if only in fantasy, by associations with social and personal meanings which in a different cultural pattern might be more directly available. The short description of the pattern we have is magic: a highly organized and professional system of magical inducements and satisfaction, functionally very similar to magical systems in simpler societies, but rather strangely coexistent with a highly developed scientific technology.”²¹

Over time, this modern period of the industry focused on targeting the global consumer as well. In an article entitled Global Scan, D.A. Leslies makes a compelling argument that advertising agencies, because they were already organized in a transnational fashion, were responsible for the very cultural formulation of globalization as a ‘social imaginary’ in the early 1990’s: “The case of global advertisements illustrates the role of advertising images in reconstituting notions of identity and place and in constructing a mythical or imagined global village.”²²

Today, Don Draper would work for (and Sterling Cooper would be owned by) one of four global marketing conglomerates - the WPP Group, the Omnicom Group, the Interpublic Group and Publicis - battling over a projected global advertising spend of roughly $450 Billion in 2010.²³

economy - at this link:
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<th>Advertising in a Consumer Culture Broadcast Media Marketplace</th>
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<td>“Quackery” and Misinformation</td>
<td>Trust still an issue: user data and behavioral tracking still in its infancy</td>
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<td>Use of “psychological” advertising tactics on “The Consumer”</td>
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<td>Persuasion by a cultural/creative elite (advertising as <em>industry</em>)</td>
<td>Value Networks based on self-forming communities of interest and affinity groups (advertising as <em>grassroots advocacy</em>)</td>
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<td>Framing of social desires: ”Keeping up with the Joneses”; ”<em>Babbitt was proud of being awakened by such a rich device</em>”; Beer makes me manly, young in heart, neighborly</td>
<td>Advertising as a vehicle for the positive formulation of a new set of cultural values within a new system of value exchange</td>
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Evolution of Online Advertising: 1994 – Present

Against this cultural backdrop, online advertising emerged. The first web advertisements were introduced on HotWired (today Wired News) in 1994, for brands including Zima, Club Med and AT&T. The text of the AT&T ad, the first “crossmedia” online-plus-TV campaign (titled “You Will”) read: “Have you ever clicked your mouse right HERE? You will.”

There is the oft-quoted axiom (almost to the point of cliché) attributed to one of the father’s of modern American advertising, John Wanamaker: “Half the money I spend on advertising is wasted; the trouble is I don’t know which half.” Cliché or note, Wanamaker’s quote speaks to the wild inefficiencies of the modern advertising industry – which online advertising held the promise to finally correct. Online advertising immediately addressed two crucial issues in the advertising industry: a demand by marketers for greater accountability in the return they get for their ad spend, and a demand by consumers for greater control over their media and marketing experiences. Both of these trends contributed to the increasing importance of online advertising over the last decade and both are being driven by new efficiencies wrought by networks and exchanges.

Inefficiencies, Cost Cutting and Greater Accountability

There is an extremely high degree of inefficiency built into marketing programs due to the multitude of stakeholders in the traditional advertising value chain. This inefficiency has led to an industry ripe for cost cutting – and the growth of online advertising can be primarily attributed to companies feeling compelled to spend on advertising to maintain some sort of competitive advantage in a fast moving market while not having confidence in the true nature of and specific, quantifiable source of the return on investment (ROI) of their ad spend via traditional media outlets. Companies and their marketers now require greater accountability for this ad spending.

The need for more accountability in marketing has helped drive a need for search advertising. Search advertising remains highly quantifiable for any marketer who can estimate the value of a single click-through to their site or product page. This basic accountability accounts for the market disruption that is Google.

Consumers Demand Greater Control

Over the last two decades, there is a vast proliferation of media outlets and marketing in our society. As media choices have proliferated for consumers, so has the volume of advertising we are all exposed to every day. Estimates from various research companies of the number of commercial messages the average American is exposed to every day range from hundreds to more than 5,000. This has given rise to a trend of consumers demanding greater control over their exposure to advertising messages.

(For a timeline of major milestones in the growth of online advertising, see Appendix A).
Introduction to Ad Networks

An ad network is a company that connects online advertisers (companies that want to advertise their products/services online) to online publishers (websites, blogs, social networks, and other online properties which may want to host advertisements in order to generate revenue). Ad networks are a systematic innovation, which brings automation and pricing advantages to this community of buyers and sellers of advertising. Following is a discussion of ad networks – their various business models and a breakdown of the types of media sold – which will provide new insight into the motives of the various stakeholders in this advertising value network and the business motives behind the innovation.

Ad ad network is also a collection of online inventory made up of various forms of content. Types of inventory include: banner ads, rich media, e-mail, text and video ads. This inventory can be found in various places on the Internet from blogs to RSS feeds to traditional Internet portals. Ad networks came into existence to be a sort of media representative for publishers. An ad network or networks is able to take the inventory from these publishers and sell it to various advertisers for a competitive price.

Ad networks have several different models. An ad network can buy inventory from various websites (often surplus inventory or all inventories in the case of smaller publishers) and then resell that inventory to advertisers or advertising agencies. Essentially, in this model, ad networks make money by selling inventory at a higher price than the one at which they initially bought it.

It is a basic buy/sell model: the ad network must buy inventory from the publishers cheaper than it sells it to the advertisers. Another type of ad network is that which has a portfolio (or network) of publisher partners who give the network exclusivity to sell their advertising inventory. In this business model, there is often a revenue share between publishers and the network.

In the case of large publishers (even web portals), ad networks are also a necessary part of the advertising ecosystem. There is always remnant inventory that large publishers are unable to sell for various reasons (including cost/benefit for the advertiser). These publishers look to networks in order to sell this inventory and usually at a fraction of the offering price initially set by the publisher.

Advertisers look to ad networks not just to get inventory cheap, but also to be able to target their ads more efficiently. There are various types of targeting as well as more focused vertical networks that will be discussed in more detail in later sections. Ad networks allow advertisers to reach a wider audience simply based on the fact that the ad network provides the link between an ample array of websites (not just big internet portals) instead of the advertiser or agency having to have a relationship with each website. Not only does an ad network help amplify the audience possibilities for advertisers, but it has the ability to make for a more targeted and focused ad campaign and at the same time makes for more lucrative media vehicles for publishers by monetizing the existent inventory more effectively.

Both big and small publishers need ad networks in order to keep their sites generating revenue. In the case of small publishers (the companies who populate the aggregate end of the “long tail”) ad networks
are an essential part of the online advertising business, as these publishers do not have the money or infrastructure to have an in-house advertising sales team. Ad networks have inventory from various (hundreds and even thousands) of sites and are able to offer interesting packages to advertisers.

Types of Inventory

Depending on the ad network’s focus, the type of inventory that it has varies. For example, there are certain ad networks that focus on remnant inventory from large sites and others that represent or buy all inventories from small publishers (long tail) as a sort of ad sales representative or resell house of all inventory. This normally occurs with small or even medium sized publishers (mid tail) that do not have the infrastructure to employ an in-house sales team.

A good example of an ad network that primarily attracts long tail publishers but also is interesting for larger publishers who prefer the aesthetics of text ads is Google AdSense. AdSense has the advantage that it works on a self-service basis making it cost-effective for Google and easy for the publishers. Other ad networks are more focused on Mid Tail publishers. Microsoft’s DrivePM network represents unsold inventory on sites with some degree of name recognition and with that offers advertisers a certain level of quality control. Networks that work with a fewer number of sites give the advantage to the advertiser of a good level of transparency in terms of what kinds of sites on which their ads will appear.

(For a discussion of different type of inventory acquisition business models, see Appendix B).

Pricing Models

It seems that every year a new type of pricing model for online advertising is born. More than a decade ago when online advertising came to be, one of the first pricing models was the famous CPM (Cost per Thousand). In the case of CPM we are talking about impressions, or, how many times an ad appears on a publisher site. Publishers often guarantee a certain number of impressions per day or per month or an advertiser decides how many thousands of impressions he wants and where. There is now another list of pricing models that have come to be which gives more efficiency for advertisers and allow for a larger margin for publishers.

For a breakdown of other prominent pricing models (CPC/PPC, CPA/PPA and CPE), see Appendix C.

Ad Network Business Models

Over the last decade, there have been hundreds of ad networks that have come into the online advertising space in order to fulfill a need for publishers to maximize their ad inventory and for
advertisers to buy ad space more efficiently. Targeting is the fundamental innovation these advertising value networks provide to the overall advertising system.

**Targeting**

There are several different models of targeting that an ad network can adopt, such as geographical, behavioral or contextual. There are also ad networks that focus on specific vertical markets such as women, sports or outdoor living. These are known as vertical ad networks and also use targeting models inside of these verticals to reach a desired audience.

When talking about targeting, it is also important to discuss a little about these vertical ad networks themselves. Vertical ad networks are those that narrowly focus on certain industries. A great example of this is the Martha Stewart Living advertising network - Martha’s Circle - which has a portfolio of publishers that focus on home and lifestyle. An advertiser, for example Unilever, who is interested in advertising their newest detergent, would look to this ad network to reach a certain kind of audience and certain types of publishers that deal with home and lifestyle content. A plethora of vertical networks have come into the market in the last years - such as an ESPN’s network focused on sports websites and The Washington Post’s ad network (which in its turn focuses on news sites). And, as shown in these examples, the line between ad network and publisher can become quite blurry as lots of these networks have their own publishers.

Returning to the basics of targeting, ad networks offer advertisers ways to reach their target audience while mitigating the risk (through their one to one relationship with the advertising ‘seller’) that their ads would end up just ‘anywhere’ and have little efficiency.

Certain ad networks offer combinations of various types of targeting which provide more specific audience measurement and to insure the best click-through rate possible:

**Geographical targeting** is just that, targeted advertising messages based on geography. Let’s say the advertiser is a chain of restaurants in California. The advertiser will want to target his ads to people who live in the state of California and will not have interest in having people in Idaho see his ads (as they will most probably not result in click-throughs and definitely not in actual visits to the restaurant chain). With geographical targeting, the advertiser is able to micro-target right down to the city to which he would like his ad to appear.

**Behavioral targeting**, advertising is based upon the notion that an advertiser should care more about a narrowly defined group of consumers viewing a message than about the context of a message or a broadly defined demographic. It revolves around micro-targeting an individual and reaching a certain level of engagement from the audience. Behavioral targeting is done by first using cookies to track user behaviors. These cookies and behaviors are then used to create user profiles.

For example, **User A** visits espn.com, foxsports.com and also facebook.com every day. With this information it can be deduced that **User A** is male between the ages of 16 and 25, who likes sports and...
is also an avid social network user. There would be tens, hundreds or thousands of users who would have similar profiles to User A and would be great candidates to receive advertising regarding Nike sportswear, for example. Nike can go to this ad network with behavioral targeting and target their advertising campaign to the behaviorally targeted demographic User A represents. This is a simplified example of behavioral targeting. Obviously, it can get much more complex than this example, but it is a good reference point for further discussion.28

Ad networks considered the leaders in behavioral targeting are Tacoda (now part of AOL), Revenue Science as well as Blue Lithium (now part of Yahoo!).

**Contextual targeting** is based on the belief that the context of a site is most important in determining what advertising message should be displayed. Therefore, when a user is navigating on a site, ads will appear that have to do with the content of that particular site. There are a few different types of contextual targeting. The industry standard has been set by Google’s AdSense - which shows text ads on publisher sites based on the content of that page or site. AdSense is heavily used on the sites of smaller publishers. Another example of contextual targeting would be Contra’s in-text ad network, which provides ads embedded in specific key words within the body of a webpage.

### The Evolution of Ad Exchanges

Ad networks play a central role in transforming the value proposition of the advertising industry from one of a linear value chain to that of a value network. However, ad networks are usually designed to maximize the value proposition for a buyer or seller – enabling a higher return on revenue by using information proprietary to the network. As ad networks evolved, the various stakeholders felt the need to create transparency. Ad exchanges evolved to fill this need:

> “An Advertising Exchange is a real-time transaction platform, designed to match buyers and sellers of online advertising. An ad exchange is a company that brokers online advertising by bringing publishers and advertisers together on a website where they can participate in auctions for ad space. An ad exchange is a marketplace -- set up much like a NASDAQ exchange for online ads -- where publishers and advertisers can find and execute advertising transactions. Ideally, exchanges provide a system of controls to keep the community safe from harmful, objectionable content as well as create an open development structure to encourage innovation in the industry. The ideal online advertising exchange provides every buyer and seller with the tools and controls they need to reduce risk and maximize return for every single impression.”29

At a high level, the way ad exchanges work is as follows: when a person requests a Web page from a site that is participating in the exchange, the publisher notifies the exchange that space on that page is available. It might also let the exchange know something about that person, based on his or her past online activity or shopping habits. Advertisers bid on the ad space, offering different amounts depending
on the person’s attributes, the time of day and other factors. The winner’s ad is then slotted into the page. All of this happens nearly instantly.

With an advertising exchange, buyers can access and target inventory that meets their campaign needs. They are also able to maximize their return on investment through dynamic pricing and intelligent bidding, for instance by using dynamic bid rules to automatically set maximum bids based on past performance, defining budgets and timeframes, setting maximum bids and delivery goals, and selecting CPM, CPC (Cost Per Click) or CPA (Cost Per Auction).

**Difference between ad networks and ad exchanges**

Ad networks operate more like a marketplace, with transactions limited to buyers and sellers and the ad network as intermediary. Ad exchanges are ‘agnostic’ platforms that many buyers and sellers are able to use to run their business. This architectural difference is what makes the exchange model so powerful — instead of one party “operating” the exchange on behalf of a number of buyers and sellers, the exchange provides a single technology platform upon which many companies — advertisers, publishers and networks — can buy and sell ads. Each impression can have anywhere from zero to many middlemen. The ad exchange is an ecosystem that supports a large variety of business models, resulting in more innovation and competition. With an exchange, there is enhanced liquidity in the marketplace, which results in higher and more stable prices for publishers.30

**Current State of the Industry**

The online advertising ecosystem has been converted from a value chain of stakeholders into a value network with transparency and exchange functionality dramatically different from the cultural, business and creative practices of the advertising industry for at least the last 100 years. As a result, the online advertising industry has evolved from a set of discrete stakeholders with specific tasks that would add value to themselves - to an intermingled web of stakeholders with everyone adding value to every other stakeholder in the network.

Ad exchanges have been hailed as the future of the industry for some time, yet they only account for between 10 and 15 percent of the display advertising business. Ad exchanges hold the potential for marketers to be able to effectively reach 100 percent of the Internet audience and do so at a high frequency.

There is a shift to identifying audiences that match a campaign in real time as the campaign request comes in over the wire and be able to respond back with a fair market price for that campaign. Exchanges will allow publishers to fill their ad slots with the highest-paying ads. Exchanges, if successful, could mean issues for high-end publishers, as they would allow advertisers to reach their intended audiences more cheaply on other sites. This will lead to further commoditization of online advertising.31

It is widely believed that the future of online advertising and current issues are going to be addressed by ad exchanges.32 As ad exchanges create a transparent clearinghouse that will enable publishers to get
maximum price and enable advertisers to buy impressions with transparency – these ad exchanges will potentially move to the center of the advertising system.

There is a lot of discussion in the world of online advertising today about the relevance of ad networks and their future as viable business entities. There are two schools of thought around ad networks. The first is that ad networks are the bane of existence for advertising – they are the scum of the online ecosystem, trying to commoditize and control audiences, brands and driving prices down. The second more positive school of thought is that ad networks have actually re-defined the concept of audience engagement with brands – they aggregate the millions of advertisements and impressions across millions of sites and make it easy for advertisers and agencies to spend more money online and attract more audiences to content specific destinations.

The primary issue seems to be a perception of a distressing lack of transparency in interactive advertising today, though ad exchanges have addressed some of the transparency issues in recent years. Advertisers and publishers struggle to understand the supply and demand trends that impact their advertising businesses. Intermediaries are numerous and often go to great lengths to keep information from buyers and sellers. There seems to be tremendous operational friction between buyers, sellers, intermediaries and ad-management platforms. Online advertising is the most accountable advertising medium in history, yet there is a feeling that there is a general lack of accountability in the way the market operates (issues, again, which are a direct legacy of the mistrust towards advertising as a communications medium since its inception).

The other issue surrounding ad networks and ad exchanges is the commoditization of the industry brought about through the newfound efficiency of in the marketplace. Because tracking capabilities have become the coin of the realm, advertisers may stop paying a premium for innovative, integrated opportunities.

Third issue is liquidity. Every ad network has transitory supply and demand problems: campaigns that can’t finish or inventory that is going unsold because some other campaign ran out of budget. Ad exchanges were born out of this need to solve the liquidity problem. With an exchange, we have additional issues – what is the pricing model? Should it be fixed? Auction? If auction, CPM, CPC, or CPA, and how is the publisher paid? Who wins under each model: advertiser, publisher, or network? The issues are endless.

Any way you look at it, ad networks are complicated and are starting to face more and more challenges that are similar to the ones faced by stock markets as they evolved. While this is going on, the stakeholders in the advertising value network are constantly re-defining themselves. The agencies that have traditionally only been involved in acting as a broker between the publishers and the advertisers are now moving up-stream by creating their own ad networks. On the publisher side, there is another layer of companies that have emerged which did not exist before – these companies are working with the publishers to understand their inventory and maximize the revenues from the inventory. Another recent development is the emergence of independent data agencies – which sell intelligent non-biased traffic data to publishers and agencies.
All of these issues have raised questions about the place of ad networks in the larger digital value ecosystem. The arguments seem to center around channel conflicts with the different stakeholders, price commoditization by the ad networks and potential devaluation of brands. The reality is that ad networks are not going away any time – they are just evolving. Ad networks are now focusing on what they were initially built for – reaching coveted audiences and developing niches rather than a generalized approach.

Historically, markets and exchanges drive toward efficiency, transparency and accountability, all of which benefit the principal buyers and sellers. Properly enabled by technology, the online advertising market -- and even the broader advertising market -- will move in this direction.

Yahoo and Google today run the two major exchanges in the market. In this game, Google finds itself in the unfamiliar role of underdog. As one of the Web’s biggest publishers, and a seller of ads on a network of top sites like eBay and hundreds of newspapers, Yahoo leads the display advertising business. In 2007 Yahoo bought Right Media, a pioneering ad exchange whose business has grown steadily since, in part because many of the ads that run on Yahoo are brokered through it.

Several industry analysts say that Google’s push into the business (via acquisition of DoubleClick) could shake up the market. DoubleClick has had an ad exchange for some time. But the new system built by DoubleClick will automatically allow hundreds of thousands of advertisers and publishers who now use Google’s AdWords and AdSense systems to run their ads and ad space through the exchange. This system will give advertisers greater flexibility. Needless to say the ad exchange wars are on and everyone is going to benefit from the innovation.

But, who is everyone? And is marketplace efficiency beneficial in and of itself?

**User Participation and Engagement (User Story: Michael 2020)**

“all fandom is born of a mix of fascination and frustration -- just a matter of degree.”

RT @henryjenkins: #foe4

Let’s fast forward to February 2020. Michael, 27, completed graduate school a little over a year ago – and has moved back to the west coast. He is a manager at a large technology firm and is a big user of the latest and greatest in technology. Michael is currently in New York City on a business trip. He is staying at a hotel.

Michael starts his day with a morning run on the treadmill in the exercise room of the hotel. His trusted Google smart phone, running the Android operating system, is by his side. Michael lives in an

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iv [http://twitter.com/futuresof](http://twitter.com/futuresof)
advertising-free world. Advertising subsidizes his cellular phone service, but the system serving his phone is seamless to him as a user. The Google Android Advertising Network and Exchange service consists of what is left of Google’s search business, the very successful YouTube video monetization system and Google calendar.

Besides Android, YouTube and Calendar – Google has sold all of its other assets. Google is 90% smaller (in terms of global workforce and market capitalization) than it was in 2010 – due to the trust issues and suspicion directed at the company during consecutive governmental battles (China, Brazil, the U.S.) on issues such as database marketing and user privacy. The companies long term trust relationship with the global network “user” was completely destroyed – caused a 90% opt-out rate from most of Google’s services and a 90% decline in global user traffic and market capitalization over an 18 month period starting in February 2018.

His own user Google Services “opt-out” choices aside, Michael’s life still revolves around his Google smart phone. His smart phone is already programmed with his favorite songs for his morning workout routine. He scrolls through his daily newsfeed while listening to music at the same time. At the bottom of his screen, messages are scrolling through. Michael is looking to buy a new TV; his phone already knows this (via behavioral targeting of his online activity) and messages start scrolling across the newsfeed, brought to him by Samsung Digital Electronics. He also has network updates from his friends. He still uses Facebook but in a very different manner from the way he engaged Facebook in 2010.

Super Bowl LIV (54) is next week and is to be held at the newly opened Jets Stadium in Queens, New York. The local contextual advertising network is attempting to bombard Michael’s smart phone with Super Bowl broadcast messaging. Fortunately, Michael’s geographic and behavioral profile is controlled by his Hulu Advertising Network – which is Michael’s preferred advertising service provider to his smart phone.

Michael first logged in to Hulu to satisfy his insatiable fascination with Season One of the Fox musical-comedy hit Glee when he was 17 years-old. His first login date on Hulu was June 2009. His comment and user database profile dates back to this first login. He started his premium subscription-based Hulu service in 2014. He ‘opted-in’ to customize his smart phone database functionality to his Hulu user profile and database system a few short months ago. His Twitter account dating back to 2008 is his secondary database profile system.

Still, a Budweiser commercial customized to the local market is broadcast on Michael’s smart phone. Strangely enough, because Michael is a huge fan of classic broadcast commercials from the 1980’s and is very involved in a fan community for these commercials on Hulu, he is targeted for a classic Budweiser Superbowl commercial from 1984 to stream over his phone. That is the extent of the local advertising penetration. His Google Calendar is scheduled for an “Event TV” offering for Hulu subscribers for Season 2 of a new Hulu show Michael watches with a group of friends back in California. The new season starts at the same time the Super Bowl is on Sunday evening when he returns home.

Due to the median salary and educational background of his fan community profile, Facebook Friends and Tweeter followers and followed – Michael receives Sierra Nevada commercials and text
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Ravi Inukonda/Daniel Pereira

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Advertisements – with comparison pricing text messages at supermarkets within a mile of his friends house who is hosting the Hulu Premiere party on Super Bowl Sunday.

Half way through his treadmill work out, geographic, targeted and contextualize advertising start to ‘blow up’ his smart phone. In it’s early years, Hulu capitalized on the increased demand it needed to fill for commercial programming on its network by providing an inventory of commercials provided by social capital organizations and global not for profit groups and organizations. Hulu commercial spots in 2010 were dominated, as a result, by commercial offerings from the Surfrider Foundation, the Mercy Corps, Goodwill and the Mfoundation. At age 17, Michael made his first donation to the Haiti relief fund, has donated his time to other organizations – and his user profile reflects the values and grassroots advocacy philosophy of these organizations. Within minutes, Michael notices that CNN (playing in the background on the mounted television in the hotel exercise room) is reporting on an earthquake disaster in rural China.

At the end of his business day and dinner with clients, Michael returns to his hotel room. His Google Calendar is preset to set off the alarm clock functionality of his smart phone in time for Michael to get a workout in the next morning before another busy day.

Michael places his Android smart phone next to his bed: Michael is proud to be awakened by such a rich device.
Networks and Exchanges: The Year 2000 through 2025

In the 15 years since the debut of Pay-per-click keyword advertising at GoTo.com (see Appendix A) the online advertising industry has gone through a significant maturation phase. Yet it is still in an early stage of development. Everything is accelerated in this market, however, due to the size and strength of major stakeholders. Ken Auletta, author of Googled: The End of the World as We Know It, notes that Google has achieved in 6 years what it took Microsoft 12 years to do and more often than not proclaims: “We are in the advertising business”.\(^{33}\) There is also a market accelerant at play, based both on the growth of broadband accessibility since 1994 and stiff competition: the stakeholders are constantly in flux, existing players are dynamic and new players are emerging annually.

As for its relationship to the public: suspicion and cynicism about advertising as an industry has never fully disappeared since the late 1800’s, it has simply taken the more recent historical form of calls for more ‘consumer choice’ - and the highly critical approach scholars, especially within cultural studies, have always taken towards the role advertising plays in the framing of social desires. As the compilation of scholarly articles in the recently released Advertising and Consumer Culture Reader suggests, scholars who engage the advertising industry as an area of research are entering into a period of renewed critical vigilance on this front:

“...marketplace values have infiltrated all facets of social life, and have indelibly shaped our notions of love, community, self worth and even religion. In the consumer society, we are valued not so much for what we produce, but for what we consume”\(^ {34}\)

For media companies and creative industry professionals attempting to navigate through the next five to eight years of transformation, strategic discussions should be guided more by the shifting nature of the very manner in which the public engages different forms of advertising - rather than the persuasion of the consumer by advertising at a broadcast/industrial level based on “tonnage”.

This new system is not based purely on market ‘efficiency’. Rather, it is based on the equally as powerful new values of exchange – trust, self-forming communities of interest, grassroots advocacy, amongst others - the user is attempting to embed within the new cultural system of advertising itself. Advertising networks and advertising exchanges are simply the market-driven technology platforms on which this new system will be built, manifest and flow – and through which the user will engage and participate. This re-alignment of ‘the magic’ will create fascinating new value propositions.
Graph 1: On the X axis, Trust and Community from Low/High to Mild/Intense. On the Y axis, User Engagement (aka Participation) from Low/Mild to Mild/Intense.

Current strategic logics should not be built around notions of ‘the consumer’, but need to immediately shift to a strategic framework built around “the user” and/or “the participant.” Most importantly, a working definition of “user participation and engagement” must be established in order to achieve an informed strategic roadmap (technological, cultural or fiscal).

Four different quadrants - each with different tensions, clari ties and vagaries – is an effective way to organize these strategic logics with and against each other. Measurement criteria of low to high and mild to intense are not an accident or lacking in a certain intellectual rigor. These qualifiers have been specifically chosen to point out the most fundamental strategic challenge ahead: the constant, unquantifiable nature of the affective economic variables at work in this system and the manner in which these variables should not be discounted by a dependence solely on traditional tools of audience measurement or the new market efficiencies provided by ad networks, ad exchanges and behavioral databases.
Graph 2: In each quadrant, a different ‘strategic mindset’: **Persuasion Model, Data is King, Fandom, Content is King.** The new advertising cultural system we are describing is somewhere in the middle and pulls from all four narratives. Examples have been mapped into each quadrant for discussion purposes.
Appendix A: A brief look at online advertising industry activity

1994
Pay-per-click keyword advertising debuts at GoTo.com (later Overture, and now a part of Yahoo).

1998
HotWired is the first site to sell banner ads in large quantities to corporate advertisers. The first online ad buyers are AT&T and Zima. Click-through rates, the gauge of success, are an astonishing 30%.

2000
Google rolls out AdWords, a pay-per-click service. AdWords made performance-based ads mainstream and now accounts for more than 95% of Google's revenue ($21 billion in 2008).

2001
Pop-up (and pop-under) ads fill users' screens. They peak in 2003, at 8.7% of all online ads. Although initially effective, earning 13 times more clicks than banners, pop-up blockers end the annoyance almost as quickly as it began.

2003
Google buys Applied Semantics, a foundation on which AdSense will later be built, for $70 million.

2005
Video ads bring in $121 million -- just over 1% of online ad revenue. Today, they're still a small slice of the overall market as YouTube, Hulu, and others experiment with formulas, but video-ad revenue jumped to $500 million in 2008.

2006
Google buys dMarc Broadcasting, which specializes in automated advertising systems, for $70 million.

Microsoft buys Massive, a company that does in-game advertising, for $200+ million.

Yahoo Acquires Adinterax. Price not disclosed.

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V Google Ad Words: A Brief History of Online Advertising Innovation, [http://publishing2.com/2008/05/27/google-adwords-a-brief-history-of-online-advertising-innovation/](http://publishing2.com/2008/05/27/google-adwords-a-brief-history-of-online-advertising-innovation/)

2007

Facebook debuts its advertising system, including Beacon. Facebook raise concerns as it is an opt-in program by default. A month later, CEO Mark Zuckerberg allows users to turn off Beacon -- and they do just that.

Google buys AdScape, ad network which specializes in in-game advertising, for $23 million.

Google buys Doubleclick for $3.1 billion; generally thought to be a major victory for Google, since Microsoft supposedly also wanted to acquire Doubleclick.

Yahoo buys RightMedia for $680 million.

WPP Group acquires 24/7 Real Media for $649 million.

Microsoft acquires aQuantive for $6 billion.

2009

Google acquires mobile advertising company AdMob for $750 million.\(^vii\)

\(^vii\) [http://mashable.com/2007/05/18/microsoft-aquantive/]
Appendix B: Inventory Acquisition

The most important element of an ad network’s business model (from a financial perspective) is the strategy these networks use to acquire and sell their available inventory. The following is a description of the various types of inventory acquisition:

**Representation**
In this model the ad network does not have possession of inventory; instead, it represents publishers and gains revenues based on commission. It is therefore a service business with less fixed costs and of course does not have technology integration. In turn, this model is less scalable than others. Example: Gorilla Nation

**Direct Revenue Share**
This model also does not have possession of inventory, but it does have targeting and optimization technologies. Different than commission based model, there is a more integrated relationship between the network and the publishers. Example: Burst, ValueClick

**Simple Arbitrage**
Here the ad network buys inventory from the publisher for an extremely low price (mainly due to the fact that otherwise they would not sell this inventory at all) and then sells the inventory to advertisers in larger aggregated blocks at a slightly higher price. Their margin is not big here, but the scale usually large. The only problem in using this model in terms of the greater impact is the fact that publisher will have a distorted larger scale as inventory is being bought, but not necessarily it will be resold to advertisers. Example: Advertising.com

**Price Model Arbitrage**
This model is higher risk than the prior, but with this risk comes a higher margin. The network buys inventory from the publisher on a CPM basis and then sells it to advertisers on a CPC or CPA basis, reducing the risk for advertisers. The network makes money from the difference of the cheaper CPM price with the higher CPC or CPA price. Example: DrivePM

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Appendix C: Pricing Models

**CPC/PPC**
(Cost Per Click/Pay Per Click) where advertisers only pay when a user actually clicks on an advertisement to visit the advertisers' website or hot site. The most common flaw with this price model is click fraud which is when a robot is used to click on ads so that publishers gain more money from these ads. Google’s AdSense as well as other ad networks that use the CPC model have implemented systems to guard against click fraud, but unfortunately this problem is not completely resolved yet.

**CPA/PPA**
(Cost Per Action/Pay Per Action) is when the advertiser only pays when a certain action is completed, whether it is the user completing a sale after clicking on their ad or filling out a registration form. This “action” is decided upon by the advertiser. CPA is generally much higher than CPC and CPM.

**CPE**
(Cost Per Engagement) is the newest in the pricing model mix. This pricing structure entered the market in 2008. In this model the ad impressions are free (just as in CPC and CPA) and only when the user “engages” with the ad does the advertiser pay. Engagement can be when the user plays a game, takes a survey or does a product tour. This all depends on the definition of engagement by the advertiser.

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