

Interpretation of texts

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Yahoo's Smart Billboards

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by Ilyse Liffreing *October 14, 2016*



Reveal of patent blueprint comes at awkward time for company caught in privacy controversies

Yahoo has applied for a patent for a "smart" billboard that would represent a leap forward in data collection for outdoor advertising.

According to a blueprint the U.S. Patent and Trademark office made public last week, the billboard would collect data through innovative sensors, cameras and microphones a first for the medium. Not only could the data be sold to advertisers to help craft highly targeted creative for the billboard, it could be processed and read in real-time, giving the advertiser the ability to dynamically alter the creative depending on audience makeup and behavior.

The billboard could collect "biometric data" on passersby to "determine whether the audience corresponds to a target demographic," according to the patent, which was reportedly filed in March 2015. It could also collect mobile device data or images to "identify specific individuals in the target audience," and "identify specific vehicles and/or drivers."

Microphones could collect conversations that would reveal audience reaction to the ads, and proximity sensors could show how close people get to the billboards. "Eye-tracking sensors" could determine whether passersby are looking at the ads and for how long. Image recognition techniques and mobile data could be used to form a more focused profile of the audience.

Yahoo did not respond to requests to comment on the patent.

According to one example contained in the patent application, a Yahoo billboard placed on the side of a highway would be able to estimate the number of cars on the road, and even identify their make, model and year to determine the "socioeconomic status" of drivers.

The data obtained, according to the patent, will be "stored remotely" and "under the control of one or more independent entities (e.g., publishers, advertisers, third parties in and out of an ad exchange, etc.)."

Though Yahoo's proposed billboard would represent a leap forward in outdoor data collection, the practice is not new to the field. Clear Channel Outdoors America drew criticism from New York Senator Charles Schumer in May for operating billboards in Times Square that used mobile phone data to determine which stores pedestrians visited. The senator referred to them as "spying billboards" and urged the Federal Trade Commission to investigate the technology.

"They have huge amounts of information on you," said Schumer at a press conference in Times Square in May. "Who knows what they could use it for? It's something straight out of a scary movie."

The timing of the revelation could also prove awkward for the company, which has lately drawn the ire of privacy advocates. The company admitted last month that about 500 million Yahoo email accounts had been hacked. Most recently, Reuters reported that the company has been scanning customer emails for the NSA, and last month the company admitted that at least half a billion Yahoo accounts were hacked in 2014.

Jeff Tan, VP of Strategy at digital out-of-home agency Posterscope, said his company has been testing the use of mobile data and image recognition technology,

and is planning on introducing a programmatic approach to enhance billboards, similar to what is described in the Yahoo patent.

For two recent campaigns for General Motors, the agency targeted consumers using facial-recognition and vehicle-recognition technology. But those campaigns didn't "store any information at all," said Tan. "The screens were not connected to the Cloud or the internet. They were all localized and nothing got saved, stored, shared or sold. All images were deleted right away."

"Everything needs to adhere to protecting the privacy of consumers. If there is a digital billboard on a freeway with cameras on it," Yahoo would be obligated "not to save, or share or sell any of the individual pictures that they would collect," he said.

"And if they do, they would need to be open to any law enforcement request to access that information," he added.

Interpretation 1

Yahoo's Smart Billboards

One of the concerns of contemporary advertising and media practitioners is acceleration of message transfer and facilitation of understanding visual elements in advertisements; such that the most feedback is achieved for the concepts from users and the producers easily communicate with the users and vice versa.

In this regard, Yahoo with a leap forward in outdoor advertising has developed smart billboards incorporating innovative sensors, cameras and microphones in order to record the users' reaction. This reaction helps to improve advertising method and select suitable elements to attract more attention. Application of this data may enhance creativity for the creation of local advertising. Through identifying individuals' norms and behaviors recorded by cameras and sensors, it is possible to perform field study by which the output of advertisement may be enhanced in the city or country where these billboards are installed.

By this technology developed by Yahoo, the sensors analyze mobile phone signals and control surrounding environment automatically; they also analyze peoples' conversations in order to display the most suitable advertisings matched to the cultural context of each place.

In this smart technology that is able to record all activities a precise approach is taken which is highly advanced in the today's world of technology and it has the potential to be used in many fields. One of these applications is identification of special individuals and audiences that may be used in identification and collection of their related data and conversation when confronted with advertisement and also their viewpoints; such that all these data is recorded and then analyzed in order to obtain useful information about how to present a favorable advertising.

This information is highly precise and smart and they could be used as a comprehensive field study in all advertising areas for society people.

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Online advertisement

Certain features of digital marketing that contribute in brand awareness: ease of access and effectiveness

Digital marketing (also known as **data-driven marketing**) is an umbrella term for the marketing of products or services using digital technologies, mainly on the Internet, but also including mobile phones, display advertising, and any other digital medium.^[1]

Digital marketing's development since the 1990s and 2000s has changed the way brands and businesses utilize technology for marketing.^[2] As digital platforms are increasingly incorporated into marketing plans and everyday life,^[3] and as people use digital devices instead of visiting physical shops,^{[4][5]} digital marketing campaigns are becoming more prevalent and efficient.

Digital marketing techniques such as search engine optimization (SEO), search engine marketing (SEM), content marketing, influencer marketing, content automation, campaign marketing, data-driven marketing^[6] and e-commerce marketing, social media marketing, social media optimization, e-mail direct marketing, display advertising, e-books, and optical disks and games are becoming more common in our advancing technology. In fact, digital marketing now extends

to non-Internet channels that provide digital media, such as mobile phones (SMS and MMS), callback, and on-hold mobile ring tones.^[7]

History

The term *digital marketing* was first used in the 1990s,^[8] but digital marketing has roots in the mid-1980s, when the SoftAd Group, now ChannelNet, developed advertising campaigns for automobile companies: People sent in reader reply cards found in magazines and received in return floppy disks that contained multimedia content promoting various cars and free test drives.^[citation needed]

In 2000 a survey in the United Kingdom found that most retailers had not registered their own domain address.^[9]

Digital marketing became more sophisticated in the 2000s and the 2010s, when^{[10][11]} the proliferation of devices' capability to access digital media at almost any given time led to great growth.^[12] Statistics produced in 2012 and 2013 showed that digital marketing was still a growing field.^{[13][14]}

Digital marketing is often referred to as 'online marketing', 'internet marketing' or 'web marketing'. The term *digital marketing* has grown in popularity over time, particularly in certain countries. In the USA *online marketing* is still prevalent. In Italy, digital marketing is referred to as *web marketing*. In the UK and worldwide, however, *digital marketing* has become the most common term, especially after the year 2013.^[15]

Digital media growth is estimated at 4.5 trillion online ads served annually with digital media spend at 48% growth in 2010.^[16] An increasing portion of advertising stems from businesses employing Online Behavioural Advertising (OBA) to tailor advertising for internet users, but OBA raises concern of consumer privacy and data protection.^[12]

New non-linear marketing approach

In an evermore complex retail environment, customer engagement is essential but challenging. Retailers must shift from a linear marketing approach of one-way communication to a value exchange model of mutual dialogue and benefit-sharing between provider and consumer.^[17] Exchanges are more non-linear, free flowing, and both one-to-many or one-on-one.^[5] The spread of information and awareness can occur across numerous channels, such as the blogosphere, YouTube, Facebook, Instagram, Snapchat, Pinterest, and a variety of other platforms. Online communities

and social networks allow individuals to easily create content and publicly publish their opinions, experiences, and thoughts and feelings about many topics and products, hyper-accelerating the diffusion of information.^[18]

The Nielsen Global Connected Commerce Survey conducted interviews in 26 countries to observe how consumers are using the Internet to make shopping decisions in stores and online. Online shoppers are increasingly looking to purchase internationally, with over 50% in the study who purchased online in the last six months stating they bought from an overseas retailer.^[19]

Using an omni-channel strategy is becoming increasingly important for enterprises who must adapt to the changing expectations of consumers who want ever-more sophisticated offerings throughout the purchasing journey. Retailers are increasingly focusing on their online presence, including online shops that operate alongside existing store-based outlets. The "endless aisle" within the retail space can lead consumers to purchase products online that fit their needs while retailers do not have to carry the inventory within the physical location of the store. Solely Internet-based retailers are also entering the market; some are establishing corresponding store-based outlets to provide personal services, professional help, and tangible experiences with their products.^[20]

An omni-channel approach not only benefits consumers but also benefits business bottom line: Research suggests that customers spend more than double when purchasing through an omni-channel retailer as opposed to a single-channel retailer, and are often more loyal. This could be due to the ease of purchase and the wider availability of products.^[20]

Customers are often researching online and then buying in stores and also browsing in stores and then searching for other options online. Online customer research into products is particularly popular for higher-priced items as well as consumable goods like groceries and makeup. Consumers are increasingly using the Internet to look up product information, compare prices, and search for deals and promotions.^[17]

Use in the digital era

There are a number of ways brands can use digital marketing to benefit their marketing efforts. The use of digital marketing in the digital era not only allows for brands to market their products and services, but also allows for online customer support through 24/7 services to make customers feel supported and valued. The use of social media interaction allows brands to receive both positive and negative

feedback from their customers as well as determining what media platforms work well for them. As such, digital marketing has become an increased advantage for brands and businesses. It is now common for consumers to post feedback online through social media sources, blogs and websites on their experience with a product or brand.^[21] It has become increasingly popular for businesses to utilise and encourage these conversations through their social media channels to have direct contact with the customers and manage the feedback they receive appropriately.

Word of mouth communications and peer-to-peer dialogue often have a greater effect on customers, since they are not sent directly from the company and are therefore not planned. Customers are more likely to trust other customers' experiences.^[18] It is increasingly advantageous for companies to utilise social media platforms to connect with their customers and create these dialogues and discussions. The potential reach of social media is indicated by the fact that in 2015, each month the Facebook app had more than 126 million average unique users and YouTube had over 97 million average unique users.^[22]

Brand awareness

Ease of access

A key objective is engaging digital marketing customers and allowing them to interact with the brand through servicing and delivery of digital media. Information is easy to access at a fast rate through the use of digital communications. Users with access to the Internet can use many digital mediums, such as Facebook, YouTube, Forums, and Email etc. Through Digital communications it creates a Multi-communication channel where information can be quickly exchanged around the world by anyone without any regard to whom they are.^[23] Social segregation plays no part through social mediums due to lack of face to face communication and information being wide spread instead to a selective audience. This interactive nature allows consumers create conversation in which the targeted audience is able to ask questions about the brand and get familiar with it which traditional forms of Marketing may not offer.^[24]

Competitive advantage

By using Internet platforms, businesses can create competitive advantage through various means. To reach the maximum potential of digital marketing, firms use social media as its main tool to create a channel of information. Through this a business can create a system in which they are able to pinpoint behavioral patterns of clients and feedback on their needs.^[25] This means of content has shown to have

a larger impingement on those who have a long-standing relationship with the firm and with consumers who are relatively active social media users. Relative to this, creating a social media page will further increase relation quality between new consumers and existing consumers as well as consistent brand reinforcement therefore improving brand awareness resulting in a possible rise for consumers up the Brand Awareness Pyramid.^[26] Although there may be inconstancy with product images,^[27] maintaining a successful social media presence requires a business to be consistent in interactions through creating a two way feed of information; firms consider their content based on the feedback received through this channel, this is a result of the environment being dynamic due to the global nature of the internet.^[24] Effective use of digital marketing can result in relatively lowered costs in relation to traditional means of marketing; Lowered external service costs, advertising costs, promotion costs, processing costs, interface design costs and control costs.^[27]

Effectiveness

Brand awareness has been proven to work with more effectiveness in countries that are high in uncertainty avoidance, also these countries that have uncertainty avoidance; social media marketing works effectively. Yet brands must be careful not to be excessive on the use of this type of marketing, as well as solely relying on it as it may have implications that could negatively harness their image. Brands that represent themselves in an anthropomorphizing manner are more likely to succeed in situations where a brand is marketing to this demographic. "Since social media use can enhance the knowledge of the brand and thus decrease the uncertainty, it is possible that people with high uncertainty avoidance, such as the French, will particularly appreciate the high social media interaction with an anthropomorphized brand." Moreover, digital platform provides an ease to the brand and its customers to interact directly and exchange their motives virtually.^[28]

Latest developments and strategies

One of the major changes that occurred in traditional marketing was the "emergence of digital marketing" (Patruti Baltes, Loredana, 2015), this led to the reinvention of marketing strategies in order to adapt to this major change in traditional marketing (Patruti Baltes, Loredana, 2015) .

As digital marketing is dependent on technology which is ever-evolving and fast-changing, the same features should be expected from digital marketing developments and strategies. This portion is an attempt to qualify or segregate the notable highlights existing and being used as of press time.^[when?]

1. **Segmentation:** more focus has been placed on segmentation within digital marketing, in order to target specific markets in both business-to-business and business-to-consumer sectors.
2. **Influencer marketing:** Important nodes are identified within related communities, known as influencers. This is becoming an important concept in digital targeting. It is possible to reach influencers via paid advertising, such as Facebook Advertising or Google Adwords campaigns, or through sophisticated sCRM (social customer relationship management) software, such as SAP C4C, Microsoft Dynamics, Sage CRM and Salesforce CRM. Many universities now focus, at Masters level, on engagement strategies for influencers.

To summarize, Pull digital marketing is characterized by consumers actively seeking marketing content while Push digital marketing occurs when marketers send messages without that content being actively sought by the recipients.

1. **Online behavioural advertising** is the practice of collecting information about a user's online activity over time, "on a particular device and across different, unrelated websites, in order to deliver advertisements tailored to that user's interests and preferences"^{[29][30]}
2. **Collaborative Environment:** A collaborative environment can be set up between the organization, the technology service provider, and the digital agencies to optimize effort, resource sharing, reusability and communications.^[31] Additionally, organizations are inviting their customers to help them better understand how to service them. This source of data is called User Generated Content. Much of this is acquired via company websites where the organization invites people to share ideas that are then evaluated by other users of the site. The most popular ideas are evaluated and implemented in some form. Using this method of acquiring data and developing new products can foster the organizations relationship with their customer as well as spawn ideas that would otherwise be overlooked. UGC is low-cost advertising as it is directly from the consumers and can save advertising costs for the organisation.
3. **Data-driven advertising:** Users generate a lot of data in every step they take on the path of customer journey and Brands can now use that data to activate their known audience with data-driven programmatic media buying. Without exposing customers' privacy, users' Data can be collected from digital channels (e.g.: when customer visits a website, reads an e-mail, or launches and interact with brand's mobile app), brands can also collect data from real world customer interactions, such as brick and mortar stores visits and from

CRM and Sales engines datasets. Also known as People-based marketing or addressable media, Data-driven advertising is empowering brands to find their loyal customers in their audience and deliver in real time a much more personal communication, highly relevant to each customers' moment and actions.^[32]

An important consideration today while deciding on a strategy is that the digital tools have democratized the promotional landscape.

5. Remarketing: Remarketing plays a major role in digital marketing. This tactic allows marketers to publish targeted ads in front of an interest category or a defined audience, generally called searchers in web speak, they have either searched for particular products or services or visited a website for some purpose.

6. Game advertising: Game ads are advertisements that exist within computer or video games. One of the most common examples of in-game advertising is billboards appearing in sports games. In-game ads also might appear as brand-name products like guns, cars, or clothing that exist as gaming status symbols.

The new digital era has enabled brands to selectively target their customers that may potentially be interested in their brand or based on previous browsing interests. Businesses can now use social media to select the age range, location, gender and interests of whom they would like their targeted post to be seen by. Furthermore, based on a customer's recent search history they can be 'followed' on the internet so they see advertisements from similar brands, products and services,^[33] This allows businesses to target the specific customers that they know and feel will most benefit from their product or service, something that had limited capabilities up until the digital era.

Ways to further increase the effectiveness of digital marketing

A strategy that is linked into the effectiveness of digital marketing is **content marketing**.^[34] Content marketing can be briefly described as "delivering the content that your audience is seeking in the places that they are searching for it".^[34] It is found that content marketing is highly present in digital marketing and becomes highly successful when content marketing is involved. This is due to content marketing making your brand more relevant to the target consumers, as well as more visible to the target consumer.

Marketers also find email an effective strategy when it comes to digital marketing as it is another way to build a long term relationship with the consumer. Listed below

are some aspects that need to be considered to have an effective digital media campaign and aspects that help create an effective email system.

Interesting mail titles differentiate one advertisement from the other. This separates advertisements from the clutter. Differentiation is one factor that can make an advertisement successful in digital marketing because consumers are drawn to it and are more likely to view the advertisement.^{[5][18]}

Establishment of customer exclusivity: A list of customers and customer's details should be kept on a database for follow up and selected customers can be sent selected offers and promotions of deals related to the customer's previous buyer behaviour. This is effective in digital marketing as it allows organisations to build up loyalty over email.^[18]

Low Technical Requirements: In order to get the full use out of digital marketing it is useful to make your advertising campaigns have low technical requirements. This prevents some consumers not being able to understand or view the advertising campaign.^[18]

Rewards: The lucrative offers would always help in making your digital campaign a success. Give some reward in the end of the campaign. This would definitely invite more engagement and word of mouth publicity^[18]

Interpretation 2

Online advertisement

One of advertising methods is online advertising or so called digital advertising which is used in today's world as a time saving tool and also easy access to transportation. With increased technology advancement and literacy of people and their computer knowledge, more audiences spend their time in virtual world where you can have many trips easily and in a short time and experience what you need.

At present, online advertising including selling transactions and or knowledge acquirement as one of the important advertising methods is popular all over the world by which the sellers and producers are able to provide their users with all information related to the products. Sellers can easily create several pages for presenting and showing their products and present precise information such that audiences can easily receive the details of products and it is digital communication that provides all these facilities.

Effective application of digital advertisement may be a significant approach in reducing the costs compared to traditional advertisement. By internet based methods without the need to print the information are presented to the audiences as shortcut in an unlimited manner. By this method, the users can connect to internet and obtain their required information without time and place limitation.

This method also protects environment regarded as one of the most important advertising approaches in the world that has attracted the attention of many people. In this regard, many ideas are presented concerning sustainable environment protection; and mobile phones as an electronic device plays an important role in this context. Various green methods and programs have been developed by producing companies and extensive advertising are ongoing for application of devices that impose the least damage to environment and these green methods are applicable through digital world in an unlimited manner.

In today's world, application of digital advertising is quickly replacing traditional advertising; because traditional advertising methods endanger the sustainability of forests and this replacement may reduce current pollutions and environmental damages.

Digital advertising is not limited to a certain category of people or age group and gender; moreover there is no limitation in the number of pages and content of advertisements. This limitlessness specific to digital methods makes the sellers able to incorporate any required information including texts and images into the product pages, so that the audiences can receive the answers of their questions while not forced to be present at the shops and purchase their required product reliably.

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Bus advertisers

In **bus advertising**, buses and their related infrastructure is a medium commonly used by advertisers to reach the public with their message. Usually, this takes the form of promoting commercial brands, but can also be used for public campaign messages. Buses may also be used as part of a political or promotional campaign, or as a tool in a commercial enterprise.

Some panel and full side and all-over adverts were traditionally painted on if the length of application warranted it. This would require a reasonable longevity and cost implication for advertisers, due to the requirement to take buses out of service to apply and remove paint schemes. Frequently changed panel adverts would use replaceable boards.

With the advent of adhesive vinyl technologies, this allowed adverts to be rapidly applied and removed over the top of the buses exterior paint as decals, reducing the cost and time.

The invention of see-through graphics, most commonly applied as a self-adhesive perforated window film, allowed the creation of more elaborate designs that could be applied over windows (although for safety reasons not the front window), moving away from the traditional square box design approach to adverts.^[citation needed]

With the advent of partially transparent window coverage techniques, all over adverts have been applied as a full vehicle advertising wrap windows and all. The transition from screen printing to digital printing has seen an increase in the color range and complexity of advert designs.

The latest bus advertising campaign by Adidas for the Brazil World Cup 2014 made use of full wrap and window coverage techniques.^[3] Transport for London launched the new formats as part of its 'year of the bus' celebrations, which commemorates the 60th anniversary of the Routemaster bus and the 100th anniversary of the first mass-produced motorbus.^[4]

Bus advertising effectiveness: Due to the great visibility and low public bus ads costs to advertise on buses, statistics show that posting an ad on bus displays on the outside and inside of city bus lines -- or on bus shelter advertising displays -- produces high impressions at a low CPM. Similarly, double decker bus advertising (i.e., hop on/hop off bus ads) is a great way to increase exposure of an ad campaign using sightseeing tour bus advertisements.

Advertising on bus media with a municipal or city bus wrap advertisement, or a double decker bus advertisement, is available in several formats, all of which are listed on this website. City bus advertisements and ad on bus options are available in almost every market across the United States for organizations interested in advertising with public bus advertising formats such as bus shelter ads. The cost of advertising on a city bus with bus signs -- sometimes misspelled as "advertising on busses" -- and bus wrap cost is greatly reduced when compared to other ad formats,

such as television, internet and radio. In fact, many researchers find that the advertising on buses cost for a bus poster (or a bus shelter ad -- sometimes referred to as bus station advertising or bus stand advertising) is the least costly of all researched media formats.

Interpretation 3

Bus advertising

This type of advertising is gaining popularity and one of its advantages is that contrary to other static approaches, it moves around and encounters to any audience being in the route of transportation. Bus advertising has a lasting effect on public memory.

With the advent of vinyl and mesh printed in see-through forms the outer body of buses is covered with these self-adhesive films and a good communication is achieved with the audiences.

Bus advertisement with the highest communication rate with audiences in different parts of cities and regions could be used in bus stations and city billboards taking advantage of various elements. This method attracts the audiences in two ways: firstly, television-based advertising installed in buses that attracts audiences' attention during their trips. Moreover, the ads installed on the body of buses gain the attention of public and also the bus stations where big screens and printed ads are incorporated attract the attention of people who are standing or passing by.

thank you Professor.