Information and Society-E2
Information Economy 2

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Summary

- Online advertising overview
- Advertising types

ONLINE ADVERTISING OVERVIEW

Can **online** advertisement affect buying behaviors ?

Marketing Technique or Channel	% of Respondents - High and Medium Influence
Recommendations from a friend/family/known acquaintance	81%
Television ads	65%
Online review or recommendation from someone within your social media circle	61%
Online review by someone you do not know in real life	50%
In-theater advertising (pre-movie)	46%
Magazine ads	44%
Products or services mentioned/featured in a TV show or movie	44%
A reseller or channel partner website	43%
Manufacturer or vendor website	42%
Newspaper ads	41%
Source: *Digital Democracy Survey* (Deloitte Development LLC, 2015).	

Traditional vs. Online Advertising

- Traditional advertising techniques include print, radio and TV advertising

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- Advertising is beginning to move viewers from traditional outlets to electronic ones:
  - Social networks such as Facebook or Twitter contain product related pages allowing to interact with users
  - Spokesmen in TV commercials often encourage viewers to check out the product website for more information
  - Print ads start to include barcodes

Early statistics (2013)

Online Advertising Market Share

OTHERS 39%

Google 44.1%

Aol. 1.5%

facebook 3.1%

YAHOO! Microsoft 12.3%
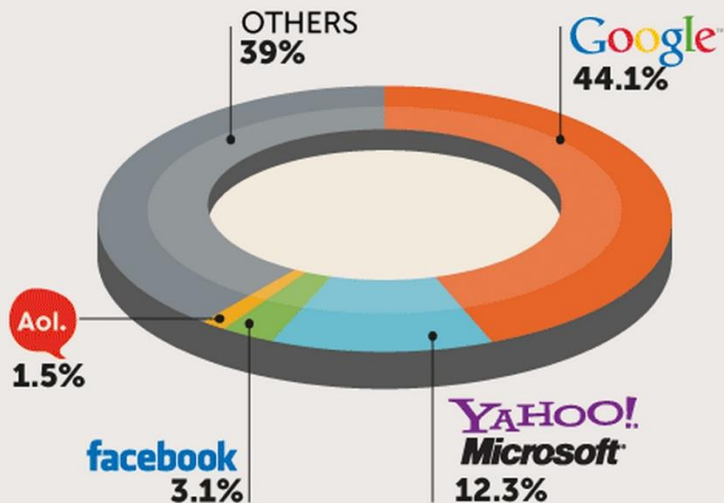
Top 5 Companies, Ranked by US Net Digital Ad Revenue Share, 2018 & 2019

% of total digital ad spending

1. Google*
38.2%
37.2%

2. Facebook**
21.8%
22.1%

3. Amazon
6.8%
8.8%

4. Microsoft (Microsoft & LinkedIn)
4.1%
3.8%

5. Verizon
3.4%
2.9%

■ 2018   ■ 2019

*Note: US total digital ad spending in 2019=$129.34 billion; includes advertising that appears on desktop and laptop computers as well as mobile phones, tablets and other internet-connected devices, and includes all the various formats of advertising on those platforms; net ad revenues after companies pay traffic acquisition costs (TAC) to partner sites; *includes YouTube advertising revenues; **includes Instagram advertising revenues*
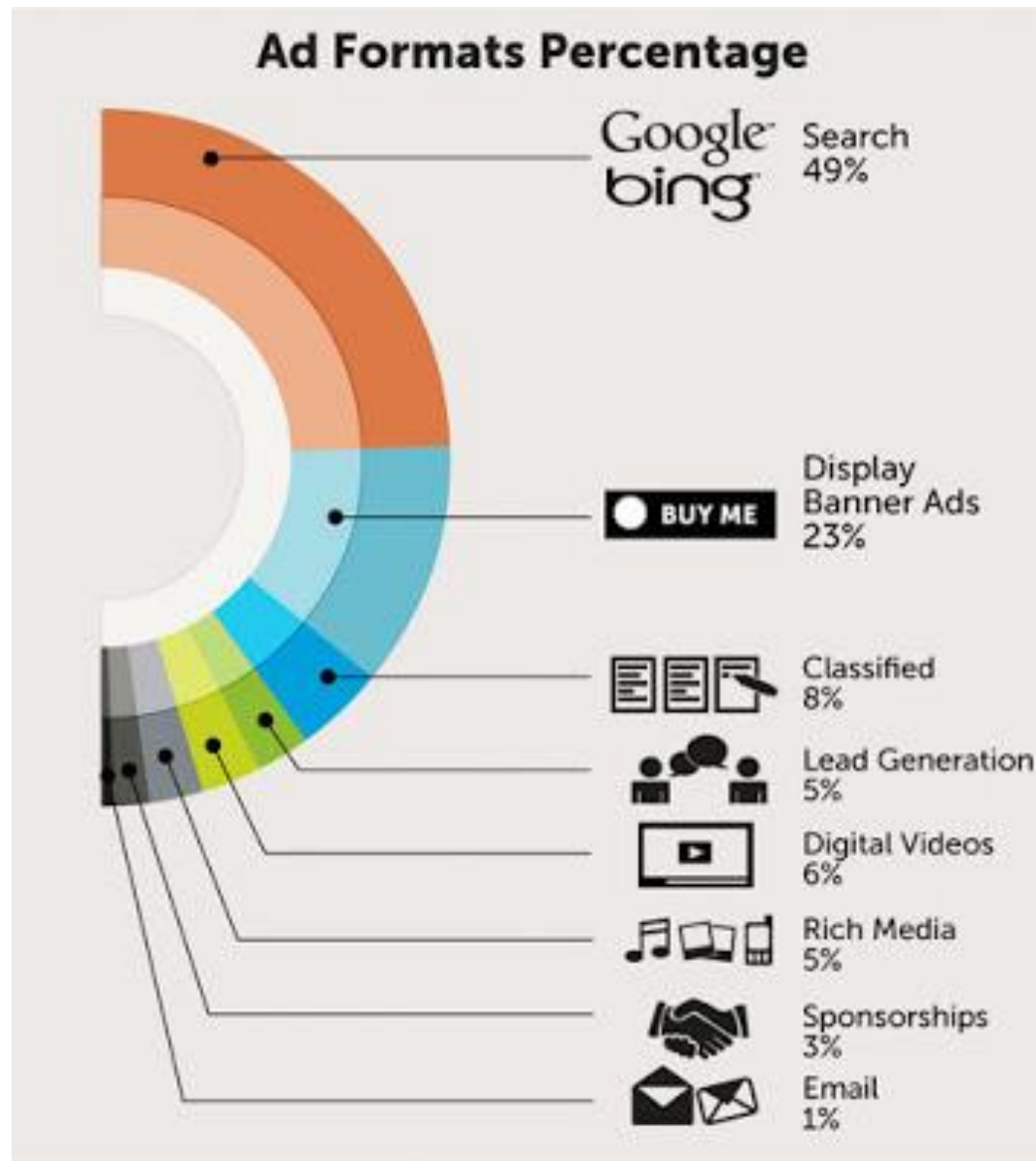*Source: eMarketer, Feb 2019*

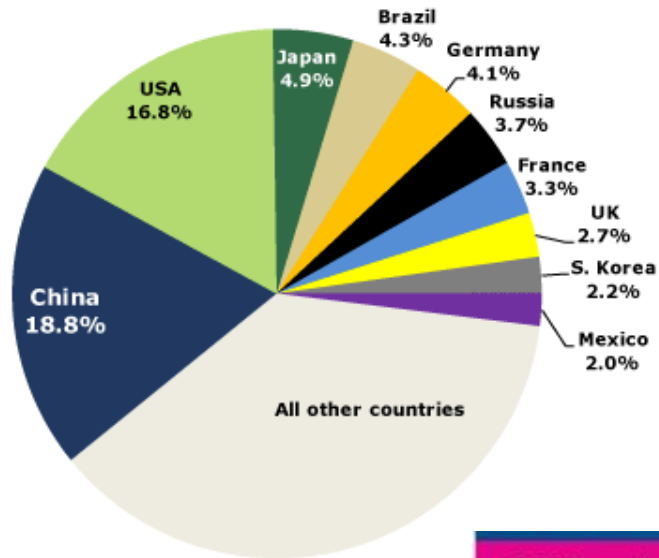245298   www.eMarketer.com

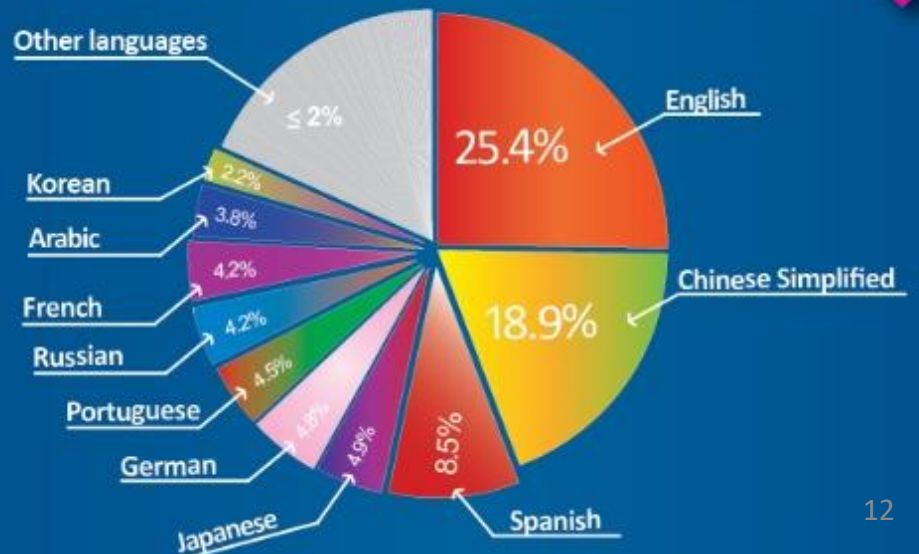Where Advertising Agencies Are Planning to Spend on Social Media Ads

LinkedIn 21%
g+ 18%
facebook 89%
You Tube 36%
twitter 39%

http://www.ehulool.com/global-online-advertising-spending-infographics/

Ad Formats Percentage

Google
bing
Search
49%

BUY ME
Display
Banner Ads
23%

Classified
8%

Lead Generation
5%

Digital Videos
6%

Rich Media
5%

Sponsorships
3%

Email
1%

http://www.ehulool.com/global-online-advertising-spending-infographics/
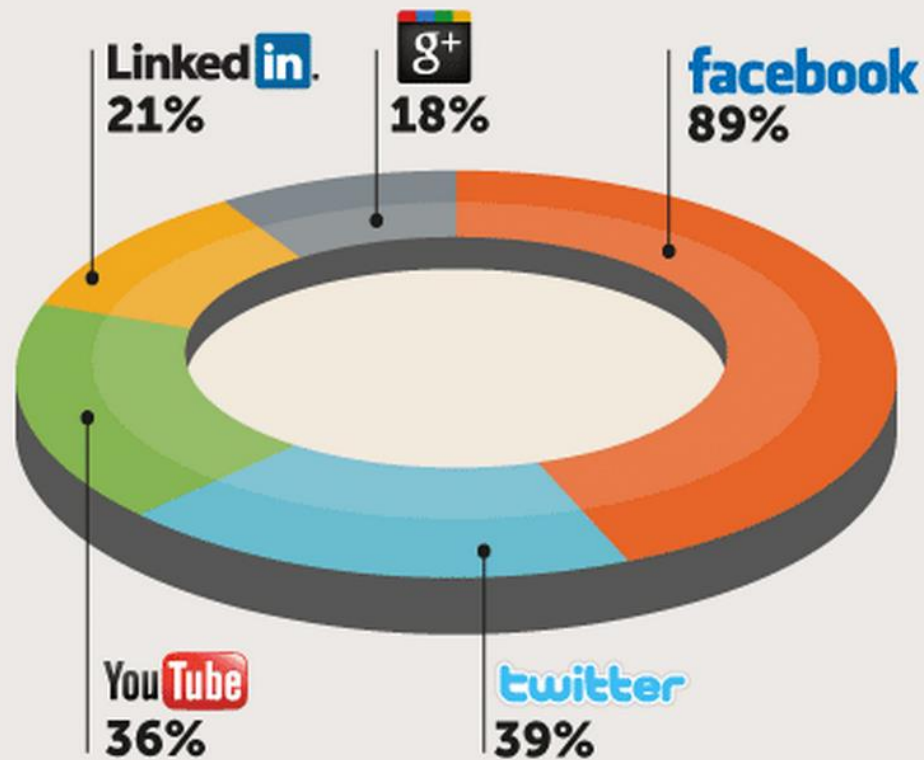
Projected Global Share of Online Ad Market
(% of total)
in 2015

- Brazil 4.3%
- Japan 4.9%
- Germany 4.1%
- USA 16.8%
- Russia 3.7%
- France 3.3%
- UK 2.7%
- China 18.8%
- S. Korea 2.2%
- Mexico 2.0%
- All other countries

Source: Translated

2015 projection of the 10 languages with the highest potential for online sales:

- Other languages ≤ 2%
- Korean 2.2%
- Arabic 3.8%
- French 4.2%
- Russian 4.2%
- Portuguese 4.5%
- German 4.8%
- Japanese 4.9%
- Spanish 8.5%
- English 25.4%
- Chinese Simplified 18.9%

http://www.marketingcharts.com/direct/us-projected-to-fall-behind-china-in-online-sales-potential-by-2015-20592/translated-global-share-of-online-ad-sales-projected-2015-jan12gif/

12

Online Ad Spending By Region

Region	2011	2012	2013	2014	2015
North America	41.7%	41.8%	41.5%	40.7%	40.2%
Western Europe	28.8%	28.0%	27.3%	27.0%	26.5%
Asia-Pacific	24.1%	24.6%	25.1%	25.8%	26.2%
Eastern Europe	2.7%	2.7%	2.7%	2.8%	2.8%
Latin America	2.2%	2.3%	2.5%	2.8%	3.1%
Middle East and Africa	0.5%	0.7%	0.9%	1.1%	1.3%

http://www.benjicoll.com/2012/07/online-advertising-market-facts-figures.html

Driven by Facebook and Google, Mobile Ad Market Soars 105% in 2013

Mobile ad spending on pace to reach $31.45 billion this year

Mar 19, 2014

Share | Print | Email

Last year, global mobile ad spending increased 105.0% to total $17.96 billion, according to new figures from eMarketer. In 2014, mobile is on pace to rise another 75.1% to $31.45 billion, accounting for nearly one-quarter of total digital ad spending worldwide.

Mobile Internet Ad Spending Worldwide, 2012-2018
billions and % change

Year	Mobile internet ad spending	% change
2012	$8.76	119.5%
2013	$17.96	105.0%
2014	$31.45	75.1%
2015	$45.85	45.8%
2016	$61.40	33.9%
2017	$77.67	26.5%
2018	$94.91	22.2%
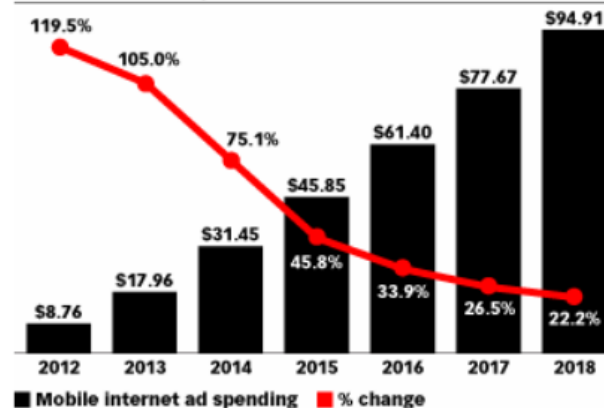
Facebook and Google accounted for a majority of mobile ad market growth worldwide last year. Combined, the two companies saw net mobile ad revenues increase by $6.92 billion, claiming 75.2% of the additional $9.2 billion that went toward mobile in 2013. The two companies are consolidating their places at the top of the market, accounting for more

Google's Revenue By Segment

Segment	Revenue in Q1 2020	Revenue in Q1 2021	YoY Growth %	Revenue share in Q1 2021
Google Cloud	$2.77	$4.05	46.20%	7.32%
Google Network	$5.22	$6.80	30.26%	12.29%
Google Other	$4.43	$6.49	46.50%	11.73%
Google Search & Other	$24.50	$31.88	30.11%	57.64%
Hedging gains/losses	$0.05	$-0.11	-120%	-0.20%
Other Bets	$0.13	$0.20	53.85%	0.36%
YouTube Ads	$4.03	$6.01	49.13%	10.87%
Total Revenue	**$41.15**	**$55.31**	**34.41%**	**100.00%**

(*All figures in billions, except percentage*)

Online Advertising Characteristics

- **Advantages**
  - Allows **immediate** and **global publishing** not limited by time or place
  - Internet marketing is **comparatively cheap** and companies can reach wide audience for small fraction of typical traditional advertising budgets
  - Marketers appreciate the **interactivity** the Web offers (can address broader set of needs)
  - Clear advantage is that the **customer** usually **has control** over the item for choosing to check it or not
    - Users can also easily **compare products** and view opinions of others
  - Easy to **gather statistics** <u>without</u> always showing the actual campaign performance

Online Advertising Characteristics

- **Disadvantages**
  - Inability of shoppers to touch, smell and try on goods
  - Privacy is concern when deciding to purchase items and when gathering data
  - Users annoyed by banners can use tools for hiding them (e.g. AdBlock Plus)

ADVERTISING TYPES

Methods of Placing Ads in Online Advertising

- **Behavior-targeted advertising (Behavioral advertising)**
  - Ad displayed based on search history, browsing history, and purchase history

- **Content-targeted advertising**
  - Ad displayed based on the content of the website the user is viewing

- **Search advertising**
  - Place Ads on websites that show results for search engine queries

ADVERTISING TYPES: BEHAVIORAL ADVERTISING

Behavioral Targeting

1) Person visits site about France

2) Some time later they visit a baseball site and see an offer for vacation in France

OBA Uses Prior Browsing Activity to Determine Ad Placement.

Examples: After Searching for Hotels

Behavioral Targeting for Customer Segments

- Behavioral advertising can be done on customer segments
  - **Segment**: collection of users that share one or more attributes based on their prior or current online activity
    - Attributes may be demographic, market-related or interest-related

- Advertisers with specific messages will target given segments

- Uses declared or inferred data on users

Behavior-targeted Advertising: Personally Relevant Ads

- People spend 25% more time fixating on ads that are personally relevant to them versus those that are not

- Pupil dilation increases by 27%, which is a strong indicator of increased cognition of the ad
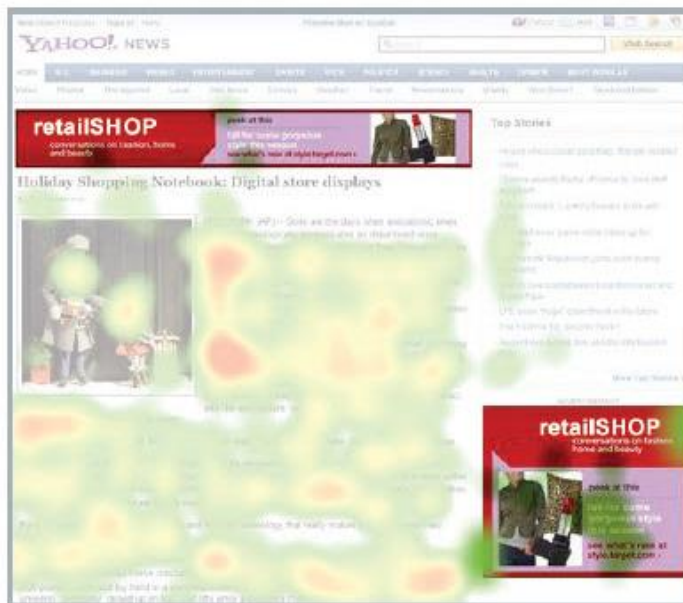
Personally Relevant Ad

Non-Personally Relevant Ad

ADVERTISING TYPES: CONTENT TARGETED ADVERTISING

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- Scanning the contents of a website for context or keywords and displaying ads that are related to the webpage

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- Easy to manage for both the owner of the website and advertiser; since the emergence of **Google AdSense** program, advertising has grown exponentially
  - By inserting JavaScript code into the webpage, site owners can enjoy the automatic display of relevant ads and save the hassle of maintenance associated with affiliated advertising
  - Advertisers benefit as their products or services are advertised on relevant webpages without marketing efforts

Content-targeted Advertising

- Time to first fixation increases by 15% when ads are contextually relevant
  - Increases the chances that the ad will be stored in long-term-memory and ultimately leads to higher recall
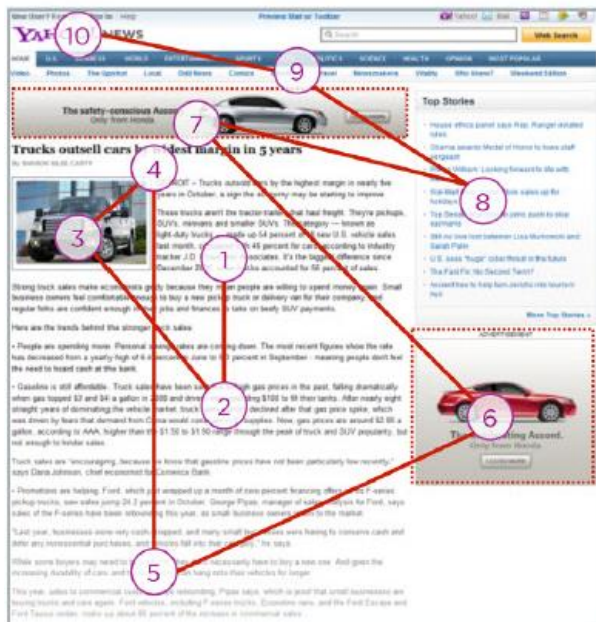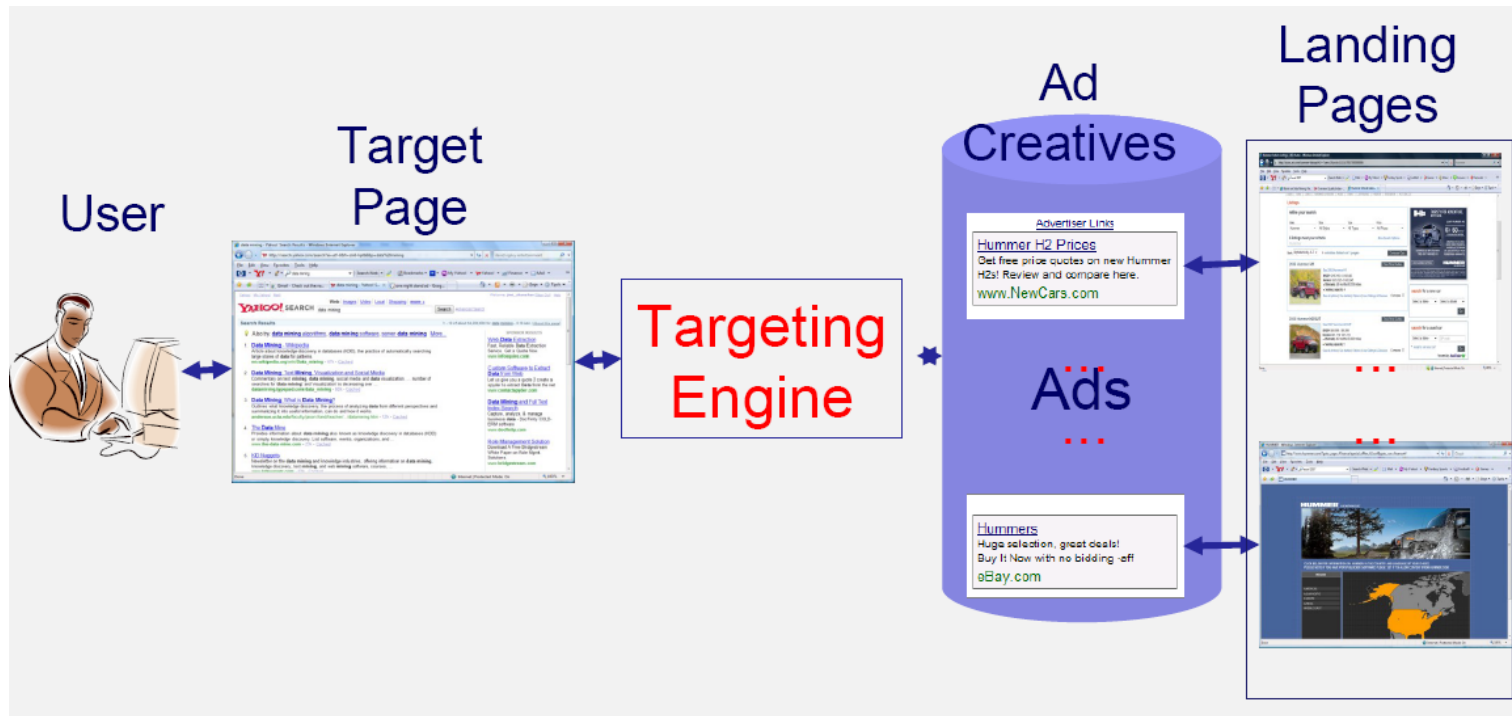

Contextually Relevant Ad
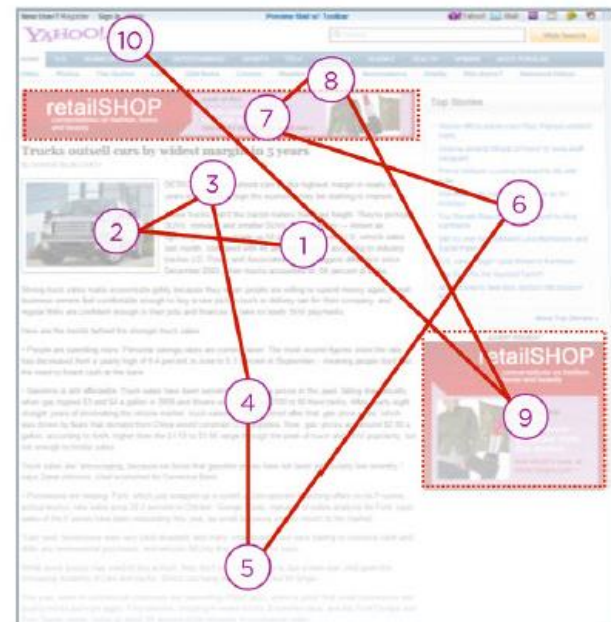
Non-Contextually Relevant Ad

Ad – Page Matching

- The scope of triggering page is often broader than one of ads
  - A Web page can be about several subjects that can be of any type, while ad text is short
    - Ads are more topic-restricted
  - There are usually few terms describing the ad
- Association between the triggering page and ad may depend on topic not mentioned explicitly in the page
  - **Low intersection between the vocabularies**
  - Possibility of increasing the overlap by adding related words to pages [1] from thesaurus or other sources

[1] Berthier Ribeiro-Neto, Marco Cristo, Paulo B. Golgher, Edleno Silva de Moura: *Impedance coupling in content-targeted advertising* , Proceedings of the 28th annual international ACM SIGIR conference on research and development in information retrieval, pp.496–503, 2005

FYI: Ad Ranking Using Information Search Technologies
(Berthier Ribeiro-Neto et al., SIGIR2005)

1. View target page as query
2. View ad as a document consisting of several elements (ad keyword, ad title, ad content, URL, landing page)
3. Rank ads based on similarity between the query and ad content (cosine similarity)

[1] Berthier Ribeiro-Neto, Marco Cristo, Paulo B. Golgher, Edleno Silva de Moura: *Impedance coupling in content-targeted advertising* , Proceedings of the 28th annual international ACM SIGIR conference on research and development in information retrieval, pp.496–503, 2005

Examples of Poorly Placed Contextual Ads

Ad linked to news article
(example of poorly positioned ad)

Examples of Poorly Placed Contextual Ads

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Examples of Poorly Placed Contextual Ads

ADVERTISING TYPES: SEARCH ADVERTISING

Search Advertising

- Method of placing online advertisements on websites that show results from search engines

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- Method of placing online advertisements on websites that show results from search engines

- **Advantages**
  - Can display a deeply targeted ad for a user searching for a certain keyword
  - Displaying ads on a website that attracts many users, such as a search engine, increasing the chance that the ad is seen
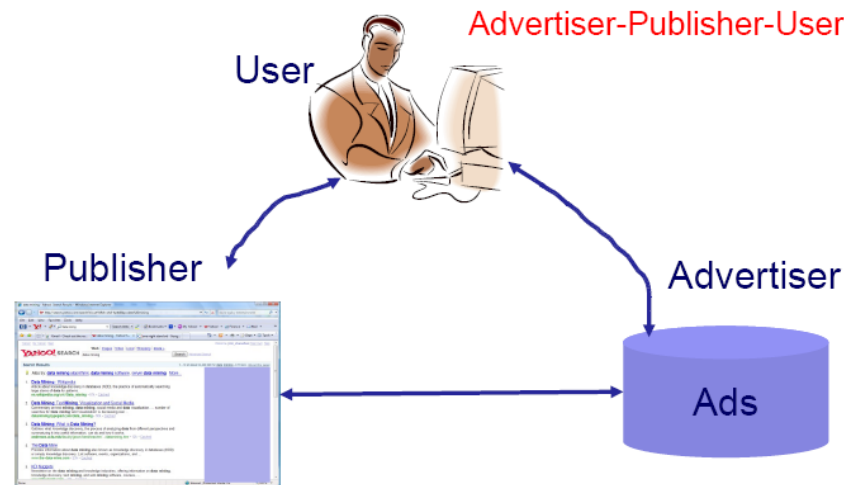
Advertiser-Publisher-User

Sponsored Search Advertising

- Directly related to user queries therefore less intrusive relative to other forms of advertising
    - Ads displayed in response to user-originated search behavior result in advantage for advertisers
    - Keywords and the ads are typically matched

[1] B. Hartzer, "Balancing Paid and Organic Search Engine Listings"
http://www.billhartzer.com/balancing-paid-and-organic-search-engine-listings/

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- Websites listed at the top of the organic search results and the paid listings will triple their click-through ratio [1]
  - Three times more people visit a website listed in both places due to a "second opinion effect"
  - Searchers are encouraged by the fact that a website is listed in both the organic listings and the paid listings

[1] B. Hartzer, "Balancing Paid and Organic Search Engine Listings" http://www.billhartzer.com/balancing-paid-and-organic-search-engine-listings/

Examples of Search Ads

Examples of Search Ads

Make Yahoo! your homepage | Mail

YAHOO!®

Web   Images   Video   Local   Shopping   News   More ▾

kyoto

Search   Options ▾

⚙ **QuickApps**

🛡 SafeSearch - On

10,700,000 results for
kyoto

Trending Searches

kyoto protocol

kyoto protocol 3

Related Points of Interest

Kinkaku-ji

Heian Shrine

Ryoanji

Yasaka Shrine

Also try: **kyoto** protocol,   **kyoto** restaurant,   **kyoto** companion,   more...

Kyoto - Wikipedia, the free encyclopedia
History | Name | Geography | Demographics
Kyoto) is a city in the central part of the island of Honshū, Japan.
It has a population close to 1.5 million. Formerly the imperial
capital of Japan, it is now the capital of **Kyoto**...
en.wikipedia.org/wiki/**Kyoto** - Cached

Kyoto Travel Guide <Official>
Kyoto.travel is the first official guide to **Kyoto**. Please use this site as a gateway to the
city, which we have designed to make your visit here that much more enjoyable.
www.**kyoto**.travel - Cached

Kyoto travel guide - Wikitravel
Kyōto was the capital of Japan for over a millennium, and carries a reputation as its most
beautiful city. However, visitors may be surprised by how much work they ...
wikitravel.org/en/**Kyoto** - Cached

Kyoto Protocol Faces Gap After Emissions ...
The world's only treaty that caps greenhouse-gas emissions will face a gap in enforcement
after 2012 because its targets expire and an extension can't ...
www.**bloomberg.com**/news/2011-06-06/**kyoto**-protocol-faces... - Cached

Kyoto City Web

Sponsored Results

Hotels in **Kyoto**
Book last minute **Kyoto** hotel. Save
& book online with Agoda!
www.**agoda.com**/**Kyoto**-Hotels

Hotels in **Kyoto**
Book your Hotel in **Kyoto** online. No
reservation costs. Great rates
Booking.com/**Kyoto**-Hotels

Aranvert Hotel **Kyoto**
Great public bath with panoramic
view. Located in center of **Kyoto**.
www.**aranvert**.co.jp

In **Kyoto**
Find In **Kyoto**s at Great Prices.
www.**Pronto.com**

More Sponsors:
kyoto

• • •

Kyoto Travel Information and Travel Guide - Japan - Lonely Planet
Kyoto is the storehouse of Japan 's traditional culture and the stage on which much of
Japanese history was played out. With 17 Unesco World Heritage ...
www.**lonelyplanet.com**/japan/kansai/**kyoto** - Cached

Hotels in **Kyoto**   *Sponsored Results*
Book last minute **Kyoto** hotel. Save & book online with Agoda!
www.**agoda.com**/**Kyoto**-Hotels

Hotels in **Kyoto**
Book your Hotel in **Kyoto** online. No reservation costs. Great rates
Booking.com/**Kyoto**-Hotels

Kyoto related searches:
kyoto protocol   **kyoto** austin   osaka
kyoto restaurant   hiroshima   tokyo
kyoto sushi   map of japan
kyoto map   nara
Yahoo! Search Assist

1 2 3 4 5 6 7 8 9 10 Next >

kyoto   **Search**

Ad Ranking

Ad Ranking (1)

Success of an online advertisement compain:
CTR (Click-through Rate) = Clicks / Impressions

Ad Ranking (1)

eCPM（effective Cost Per Mille）

$$ECPM_{Ad} = CTR_{Ad} * Bid_{Ad}$$

$$ECPM_{Ad} = AdQualityIndex_{Ad} * Bid_{Ad}$$

Bid-to-Position Model

Rank: 1
Ad A
Bid: $0.75

Rank: 2
Ad B
Bid: $0.50

ECPM-Ranking Model

Rank: 1
Ad B
Bid: $0.50
Quality Index: ▮▮▮▮▮

Rank: 2
Ad A
Bid: $0.75
Quality Index: ▮▯▯▯▯
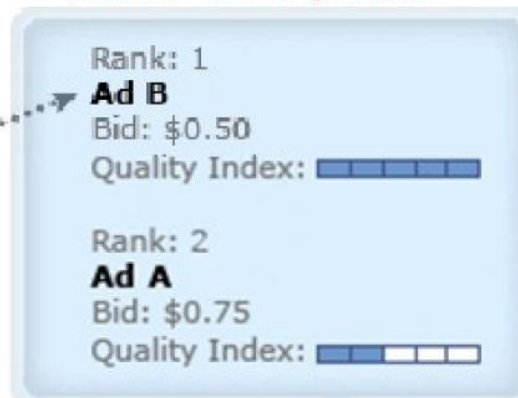
Setting a high CPC (cost per click) rate (bid) does not assure an ad the top slot, as **ad quality** is also factored in.

Ad placement is determined by both the CTR and bid price.

Success of an online advertisement compain:
CTR (Click-through Rate) = Clicks / Impressions

Ad Ranking (2)

What the advertiser pays per click ($CPC_{Ad@Rank}$)
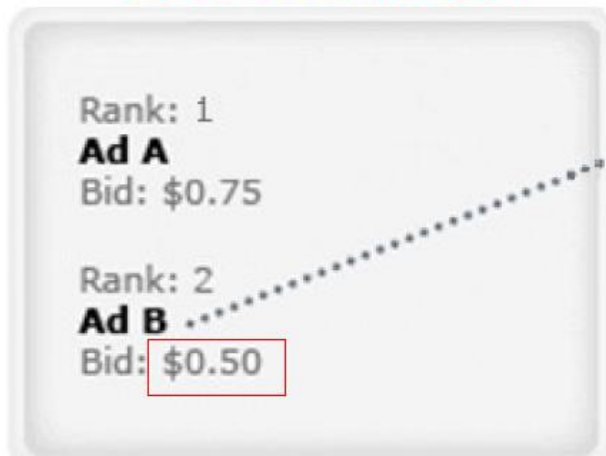
$$ECPM_{Ad} = CTR_{Ad} * Bid_{Ad}$$

$$ECPM_{Ad} = AdQualityIndex_{Ad} * Bid_{Ad}$$

$$CPC_{Ad@Rank} = Min(Bid_{Ad@Rank}, Bid_{Ad@Rank+1} + \$0.01)$$

2nd Price Auction

Bid-to-Position Model

Rank: 1
Ad A
Bid: $0.75

Rank: 2
Ad B
Bid: $0.50

ECPM-Ranking Model

Rank: 1
Ad B
Bid: $0.50
Quality Index:

Rank: 2
Ad A
Bid: $0.75
Quality Index:

Ad Ranking and CPC

Select the ad query keywords

Sets the maximum payable CPC for a keyword or keyword group

Defines the ad content (link to the ad website)
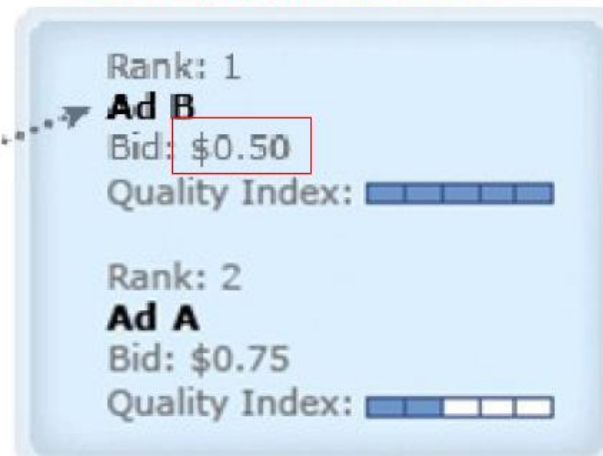
Ad position (rank) is determined by multiplying the CPC and CTR.

If a competitors maximum CPC is 0.18 and CTR the same, the actual CPC will be set to 0.19

1. Ads
Your ad links directly to your website. You select the text for your ad and can change it as often as you like.

2. Keywords
Choose the keywords relevant to your business.
Your ads will only be shown to users searching on those specific words.

3. Price
For an individual keyword or a group of keywords, set a maximum cost-per-click (CPC) you're willing to pay. That CPC and your clickthrough rate determine where your ad is shown. If your clickthrough is high, you pay less to stay in a top position. If it's the same as your competitors', you'll pay only a penny more than they do to stay in the top position. If their clickthrough rate is better than yours, you'll have to pay a bit more to stay on top.

Our AdWords Discounter monitors every change for every keyword and automatically adjusts ads accordingly. You don't need to do a thing. It will never charge you more than the maximum CPC you specified and will try to lower your price after every single search.

4. Position
Your ad's position is based on your (cost-per-click) CPC times your clickthrough rate (CTR). For example, say you're willing to spend £0.26 (or your currency equivalent) per click:

Maximum
CPC(£) × CTR(%) = Rank
0.26   ×   2.1   = 0.55

But your nearest competitor is only willing to spend £0.18 per click and has the same CTR:

Maximum
CPC(£) × CTR(%) = Rank
0.18   ×   2.1   = 0.38

Our AdWords Discounter will make sure you're charged only £0.19 for the clicks you get -- £0.01 more than the nearest competitor.

To raise your rank, you can either raise what you're willing to pay (CPC) or improve your CTR (see our tips section on how to do this).

5. Budget
Your daily budget is what you are willing to spend per day.

furnished office space boston   Google Search   I'm Feeling Lucky

Results 1 - 100 of about 12,400. Search took 0.19 seconds.

ington, DC > Business and Economy > Real Estate

...nished Offices, ...
...ta and voice jacks, DID line
...ils.cgi?ID=275 - 22k - Cached - Similar pages

ce for lease, Executive Suties, Furnished Offices, ...

Your Ad

Sponsored

Furnished Of...
Cover 100% of the Office Suite Market - Click here to start search
www.temporaryoffice.com
Interest:

Cityfeet: Office Listings
Search the largest local database of Boston space for free.
www.cityfeet.com
Interest:

Find the perfect office..
Unique office space locator service
Let us find your ideal office today
www.office-space-for-rent.com
Interest:

AdWords

Google AdWords

Jump to previous customer... ▾

Open tool... ▾

| Ops Control Center | **Campaign Management** | Reports | Analytics | My Account |

Campaign Summary | Tools | Conversion Tracking

Search my campaigns: [   ] [Search]

Campaign Summary > Seattle Condo > **Ad Group #1**

Ad Group: Ad Group #1 5204121

Seattle View Penthouse
2 Bed, 2 Bath in Fantastic Location
Mountain Views, Huge private deck
www.badros.com/view-condo-fsbo.html
1 of 1 - view all
FamilySafe

Paused

View History: this ad group
Ad Group Approval Bin : Primary | Secondary | All

Summary | **Keywords** | Ad Variations

Feb 14, 2003 to Jan 20, 2006 ▸ Change range

+ Add keywords: Quick add | Keyword tool   Edit Keywords | Search this list

[Edit Keyword Settings] [Delete]

1 - 11 of **11** keywords.

	Keyword	Status [?]	Current Bid ▾ Max CPC	Clicks	Impr.	CTR	Avg. CPC	Cost	Avg. Pos
	Total	Enabled	Default $1.00 [edit]	456	22,864	1.99%	$0.46	$209.47	3.0
☐	seattle apartment	Active	$1.00	125	5,634	2.21%	$0.30	$37.26	1.1
☐	seattle condo	Active	$1.00	143	2,906	4.92%	$0.43	$61.89	1.2
☐	seattle condominium	Active	$1.00	50	1,296	3.85%	$0.33	$16.54	1.3
☐	seattle fremont apartment	Active	$1.00	2	79	2.53%	$0.06	$0.12	1.1
☐	seattle fremont real estate	Active	$1.00	1	53	1.88%	$0.81	$0.81	4.0
☐	seattle fremont condo	Active	$1.00	2	47	4.25%	$0.28	$0.57	1.2
☐	seattle luxury apartment	Active	$1.00	2	24	8.33%	$0.09	$0.17	1.1
☐	seattle fremont house	Active	$1.00	1	22	4.54%	$0.54	$0.54	1.9
☐	seattle luxury condo	Active	$1.00	4	19	21.05%	$0.55	$2.19	1.5
☐	seattle luxury condominium	Active	$1.00	1	7	14.28%	$0.18	$0.18	2.0

OTHER TYPES OF ADVERTISING

Email and Newsletters Marketing

- **Email marketing** is a form of direct marketing which uses email as a means of communicating commercial or fund-raising messages

- **Purpose**
  - Enhancing the relationship of a merchant with its current or previous customers
  - Encouraging customer loyalty and repeated business
  - Acquiring new customers or convincing existing customers to purchase something

Email and Newsletters Marketing

- **Advantages**
  - Checking email is very popular on the Web
  - High effectiveness: email marketing is often reported as second only to search marketing as the most effective online marketing tactic
- **Disadvantages**
  - Deliverability is still an issue: legitimate email servers averaged a delivery rate of 56% (messages rejected, filtered, etc.)

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  - Deliverability is still an issue: legitimate email servers averaged a delivery rate of 56% (messages rejected, filtered, etc.)
- Email newsletters
  - Users spend 51 seconds reading an average newsletter
  - The layout and writing both need superb usability to survive in the high-pressure environment of a crowded Inbox

http://www.lyris.com/media2/pdf/datasheets/statistics-and-metrics.pdf

Social Media and Social Networks Advertising

- World in which consumer is creator and distributor of content
  - Instead of broadcasting one-way messages advertisers are compelled to engage in conversation
    - Carries risk but needs to be done
  - Engagement: constant and free exchange of opinions in which advertisers are one of the voices
  - Works as word-of-mouth (e.g., by re-tweeting)
  - Viral marketing, e.g., Coke and Mentos
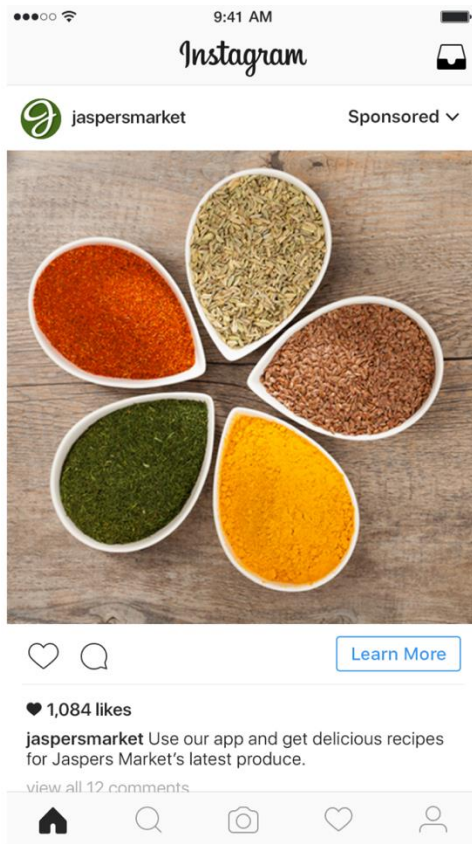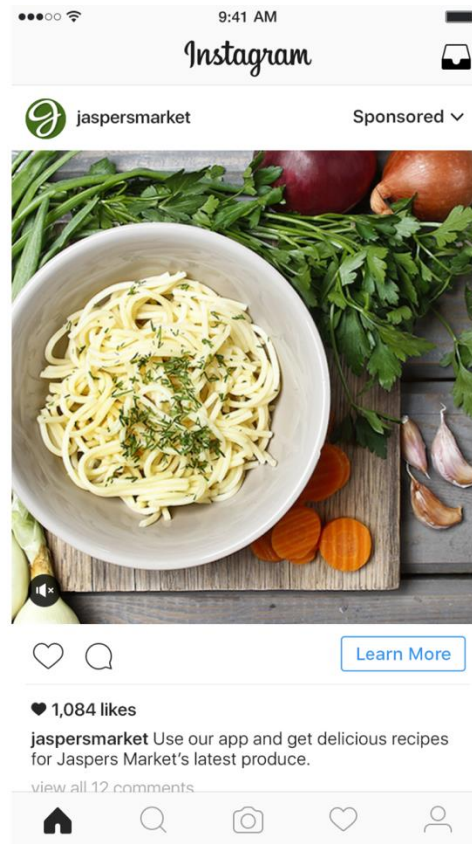
Instagram Advertising

Photo Ads

Video Ads
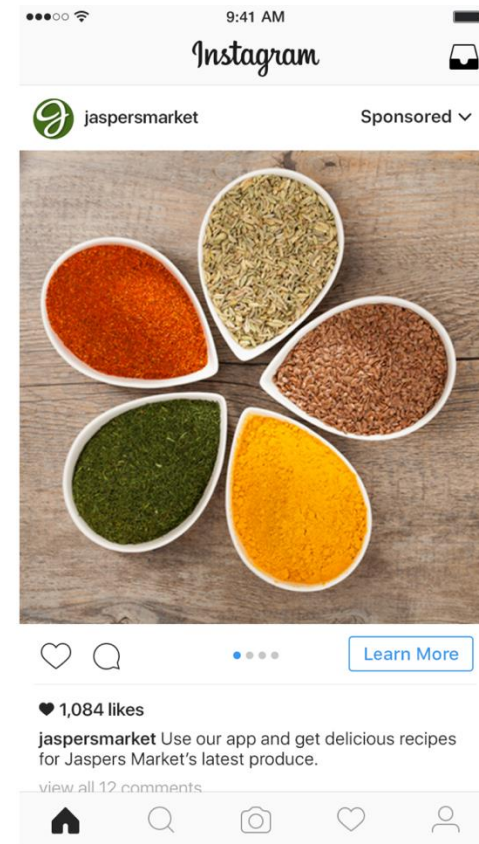
Carousel Ads

Video Advertising

- **Linear video ads**
  - The ad is presented before, in the middle of, or after the video content is consumed by the user (same as TV commercial)
  - User watches the ad in addition to the content as the ad takes over the full view of the video
- **Non-linear video ads**
  - The ad runs concurrently with video content
  - Can be delivered as text, graphical ads, or as video overlays:
    - Overlays shown directly over the content video itself
- **Companion ads**
  - Commonly text, display ads, rich media, or skins that wrap around the video experience
  - Typically run alongside or surrounding the video player
  - Can offer sustained visibility of the sponsor throughout the video experience

http://www.iab.net/media/file/IAB-Video-Ad-Format-Standards.pdf

Game Advertising

- Global, mainstream entertainment medium
  - 67% of US households play video or computer games
  - In 2009, more Americans played video games than went to the movies

- Many components of game advertising have yet to be standardized

http://www.iab.net/media/file/IAB-Games-PSR-Update_0913.pdf

Game Ad Placement Types

Around Game Environment Ads → **Display**
- Ex. banners, digital video ads, downloadable content on console services

In Game Environment Ads → **Display**
- Ex. banners, digital video ads, billboards, retail store fronts

In Game Immersive Ads → **Interactive Elements**
- Ex. computer terminals, branded racing cars, cell phones, downloadable items within game

Advergames → **Interactive Elements**
- Ex. game specifically designed around product or service being advertised