

Google, Yahoo and MSN will fall under this category.

→ **Targeted search engines :**

Targeted search engines — sometimes called topical search engines — are the most specific of them all. These search engines are very narrowly focused, usually to a general topic, such as medicine or branches of science, travel, sports, and so on. Examples of targeted search engines include CitySearch, Yahoo! Travel, and MusicSearch; and like other types of search engines, ranking criteria vary from one search engine to another.

When considering targeted search engines for SEO purposes, keep in mind that many of these search engines are much more narrowly focused than primary or secondary search engines. Look for the targeted search engines that are relevant to your specific topic (such as pets, sports, locations, and so on).

1.5 THE MISSION OF SEARCH ENGINES

- ✓ Search engines generate revenues through paid advertising. (or Cost-per-click). Responsibility of search engine is to develop in a least amount of time.
- ✓ Search Engine invest tremendous amount of time, energy and capital in improving their relevance. It includes extensive studies of user responses to their search results, comparing results against with other search engines, conducting eye tracking, conducting PR and marketing campaigns.
- ✓ As success of search engine depends upon relevance of their results, non relevant results known as spam. Most of the search engine employs a team of people who works on finding spam and eliminating them from their search results.

1.6 THE HUMAN GOALS OF SEARCHING

The basic goal of human searcher is to obtain relevant information. The following steps comprise most search processes.

- (1) Experience the need for an answer, solution, or piece of information. For example the user may be looking for a website (navigational query) to buy something (transactional query) or to learn something (informational query).

That means when we search the query in the search engine We make our web page to be listed in the top of the all the search results. We optimize it for the selected keywords. So that whenever a selected query search or keyword search is done our web page should be listed in the top 10 results. SEO is the legal process of optimizing the web page. This is done using OnPage and OffPage Optimization techniques. In other way we can say that we follow the Google search engine rules to optimize it in the google search engine.

Google is the top search engine. If we are able to optimize it in the Google then our webpage will automatically optimized in all other search engine. Google follows the strict rules in showing the SERP (Search Engine Result Pages) results (query search results).

Since the Google is the top Search Engine we concentrate on optimizing in the Google search engine.

~~1.4 MARKET SHARE OF SEARCH ENGINES~~

→ Some Facts :

- » More than 100 billion searches are performed each month. - 10K crore
- » Approximately 3200 million web searches are performed every day 3200 crore
- » On an average 36000 searches are performed every single second of every day.
- » Google own approx 65% of the search share market. ~~83%~~ 93%.
- » Google handles more than 23000 searches per day.
- » User expects the response from their query in less than one second

Search Engine Market Share (Global)

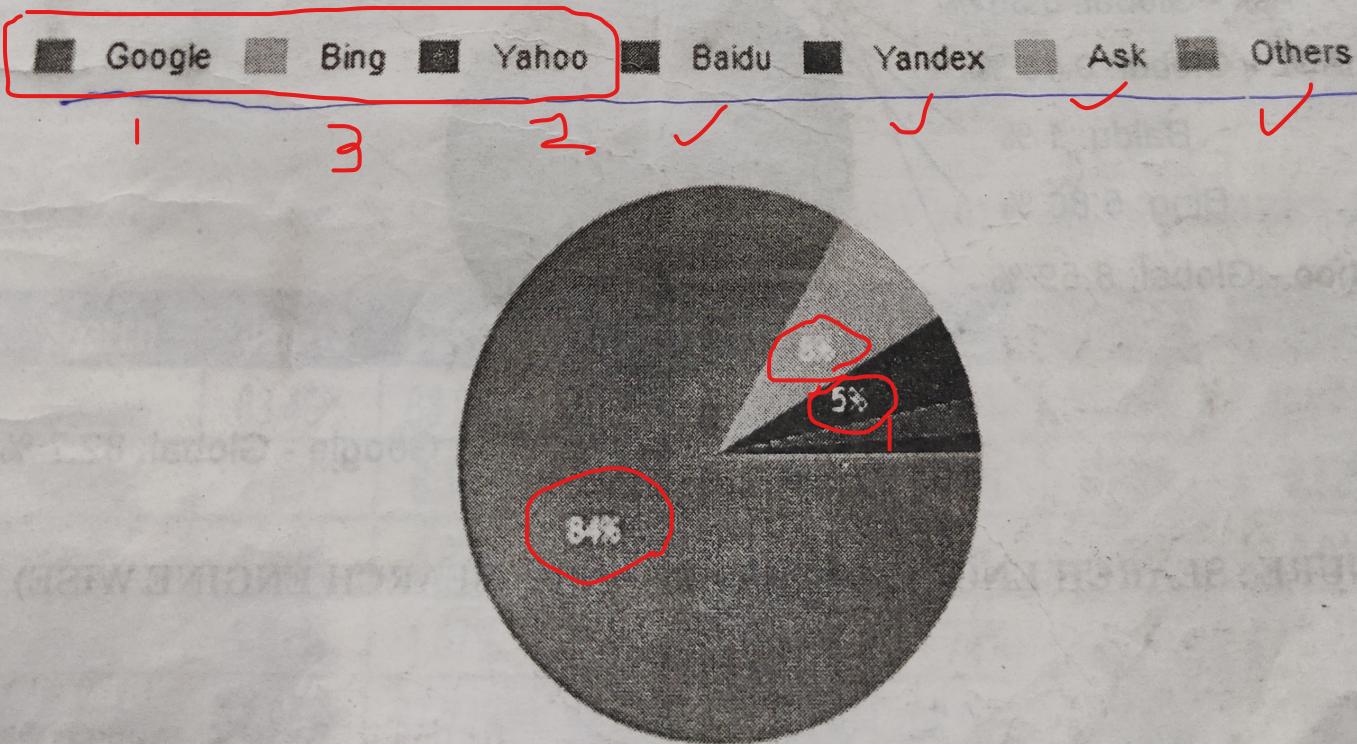


FIGURE : SEARCH ENGINE MARKET SHARE (JULY - 2013)

1.6 THE HUMAN GOALS OF SEARCHING

The basic goal of human searcher is to obtain relevant information. The following steps comprise most search processes.

- (1) Experience the need for an answer, solution, or piece of information. For example the user may be looking for a website (navigational query) to buy something (transactional query) or to learn something (informational query).
- (2) Formulate that need in a string of words and phrases (the query). Generally this query consists of one or two words. Average query length is 2.9 according to ComScore in 2009.

1.10

Web Searching Technology and Search Engine Optimization

- (3) Execute the query, check the results, see whether you got what you wanted, and if not, and try a refined query.

Words	Percent of searches
1	25.32%
2	24.96%
3	19.80%
4	13.17%
5	7.53%
6	4.04%
7	2.15%
8	1.19%

TABLE : SEARCHES BY QUERY LENGTH (comSCORE)

Subject	Percentage of U.S. clicks by number of keywords			Year - over - year % change
	February 2008	January 2009	February 2009	
One word	21.04%	20.29%	20.48%	-3%
Two words	24.73%	23.65%	23.47%	-5%
Three words	21.84%	21.92%	21.68%	-1%
Four words	8.29%	8.68%	8.72%	5%
Five words	8.29%	8.68%	8.72%	5%
Six words	4.38%	4.65%	4.71%	8%
Seven words	2.29%	2.49%	2.51%	10%
Eight or more words	2.90%	3.43%	3.47%	20%

Note : data is based on four – week rolling periods (ending February 28, 2009; January 31, 2009; and March 1, 2008) from the Hitwise sample of 10 million U.S. Internet users.

Source : Hitwise, an Experian company

TABLE : SEARCHES BY QUERY LENGTH (HITWISE)

In this process results in the satisfactory completion of a task, a positive experience for the user, the search engine and the site providing the information.

1.8 DETERMINING SEARCHER INTENT : A CHALLENGE FOR BOTH MARKETERS AND SEARCH ENGINES

Smart SEO practitioners and the search engines have a common goal of providing searchers with results that are relevant to their queries. Therefore, a crucial element to building an online marketing strategy around SEO and search rankings is to understand your audience. Once you grasp how your target market searches for your service, product, or resource, you can more effectively reach and keep those users.

Search engine marketers need to be aware that search engines are tools—resources driven by intent. Using the search box is fundamentally different from entering a URL into the address bar, clicking on a bookmark, or picking a link on your start page to go to a website; it is unique from a click on the “stumble” button in your Stumble Upon toolbar or a visit to your favourite blog. Searches are performed with intent; the user wants to find something in particular, rather than just land on it by coincidence.

Types of Queries :

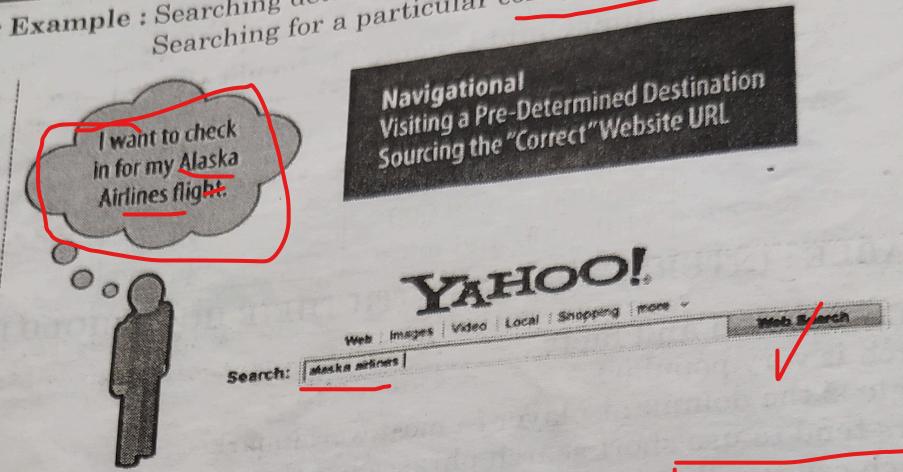
There are mainly three types of queries are available. Which are as below :

- (1) Navigational Queries
- (2) Informational Queries
- (3) Transactional Queries

(1) Navigational Queries :

directly wr
Navigational searches are performed with the intent of surfing directly to a specific website. In some cases, the user may not know the exact URL, and the search engine serves as the “White Pages.”

For Example : Searching details of Indian Airlines
Searching for a particular college like Marwadi



- » **Opportunities :**
Pull searcher away from destination; get ancillary or investigatory traffic.
- » **Average value :**
Generally low, with the exception of navigational searches on the publisher's own brand, where the value is very high as these types of searches tend to lead to very high conversion rates.

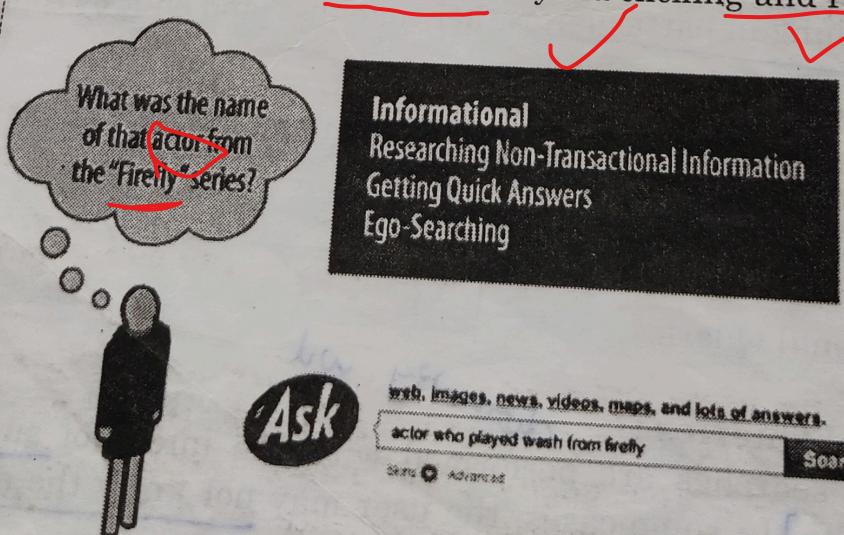
(2) Informational Queries :

Informational searches involve a huge range of queries—for example, local weather, maps and directions, details on the latest Hollywood awards ceremony, or just checking how long that trip to Mars really takes.

For Example : Top ten students of GTU

IIFA Award winner for male category.

Informational searches are primarily non-transaction-oriented (although they can include researching information about a product or service); the information itself is the goal and no interaction beyond clicking and reading is required.



→ Opportunities :

Brand searchers with positive impressions of your site, information, company, and so on; attract inbound links; receive attention from journalists/researchers; potentially convert to sign up or purchase.

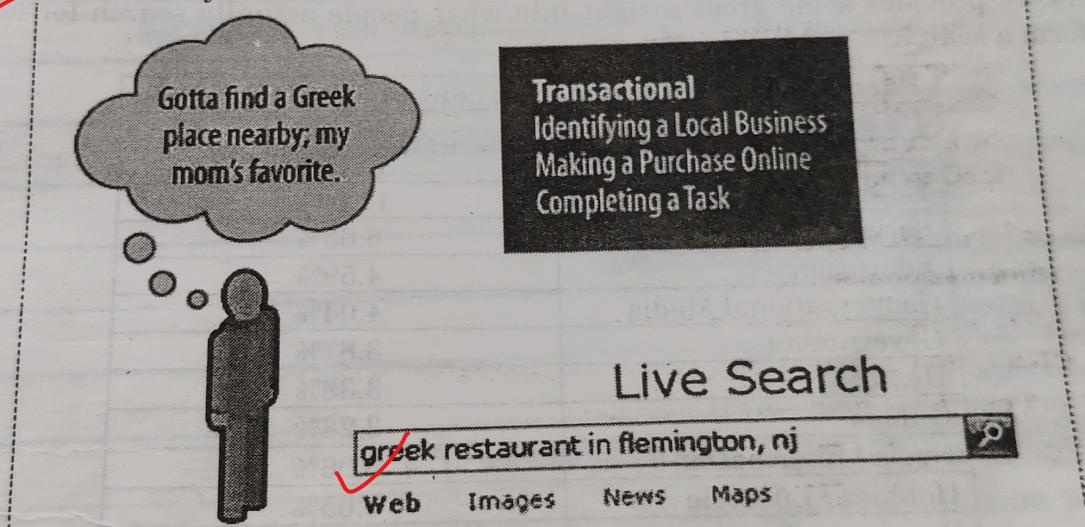
→ Average value :

Middling. Note, though, that informational queries that are focused on researching commercial products or services can have high value.

(3) Transactional Queries :

Transactional searches don't necessarily involve a credit card or wire transfer. Signing up for a free trial account at CookIllustrated.com, creating a Gmail account, paying a parking ticket, or finding the best local Mexican cuisine for dinner tonight are all transactional queries.

For Example : Finding a restaurant at Rajkot
Online Bill Payment



→ Opportunities :

Achieve transaction (financial or other).

→ Average value :

Very high.

1.9 HOW PEOPLE SEARCH ?

One of the most important elements to building an online marketing strategy around SEO is empathy for your audience. Once you grasp what the average searcher, and more specifically, your target market, is looking for, you can more effectively reach and keep those users.

We like to say "Build for users, not search engines." When users have a bad experience at your site, when they can't accomplish a task or find what they were looking for, this often correlates with poor search engine performance. On the other hand, when users are happy with your website, a positive experience is created, both with the search engine and the site providing the information or result.

What are users looking for? There are three types of search queries users generally perform: "Do" Transactional Queries - Action queries such as buy a plane ticket or listen to a song. "Know" Informational Queries - When a user seeks information, such as the name of the band or the best restaurant in New York City. "Go" Navigation Queries - Search queries that seek a particular online destination, such as Facebook or the homepage of the NFL. When visitors type a query into a search box and land on your site, will they be satisfied with what they find? This is the primary question search engines try to figure out millions of times per day.

The search engines primary responsibility is to serve relevant results to their users. It all starts with the words typed into a small box. Search engines invest significant resources into understanding how people use search, enabling them to produce better (i.e., faster, fresher, and more relevant) search engine results.

For website publishers, the information regarding how people use search can be used to help improve the usability of the site as well as search engine compatibility. Data from comScore provides some great insight into what people actually search for when they perform a search.

Parent Category Name	Percent of Total Searches
Directories / Resources	16.60%
Retail	11.86%
Entertainment	11.54%
Services	6.63%
Education	4.59%
Conversational Media	4.04%
Government	3.87%
Health	3.38%
Games	3.26%
News / Information	3.06%
Hobbies / Lifestyle	3.05%
Business / Finance	2.94%
Travel	2.21%
Community	1.94%
Regional / Local	1.87%
Sports	1.78%
Technology	1.73%
Automotive	1.67%
Real Estate	1.43%
Career Services	1.12%
Telecommunication	0.78%
Auctions	0.57%
Portals	0.56%
ISP	0.38%
Gambling	0.27%
Business to Business	0.25%

TABLE : CATEGORY WISE SEARCH PERCENTAGE

~~1.10 HOW SEARCH ENGINES DRIVE COMMERCE ON THE WEB~~

People make use of search engines for a wide variety of purposes, with some of the most popular being to research, locate and buy products. It is important to note that search and offline behaviour have a heavy degree of interaction with search playing a growing role in driving offline sales.

- According to yahoo study in 2007:
Online advertising drives \$6 offline (in stores) for every \$1 spent online. Search Marketing has a greater impact on in-store sales lift than display advertising-three times greater. There is also significant amount of interaction between search and local offline commerce.

74% of respondents used search engines to find local business information versus 65% who turned to print Yellow Pages, 50% who used Internet Yellow Pages, and 44% who used traditional newspapers.

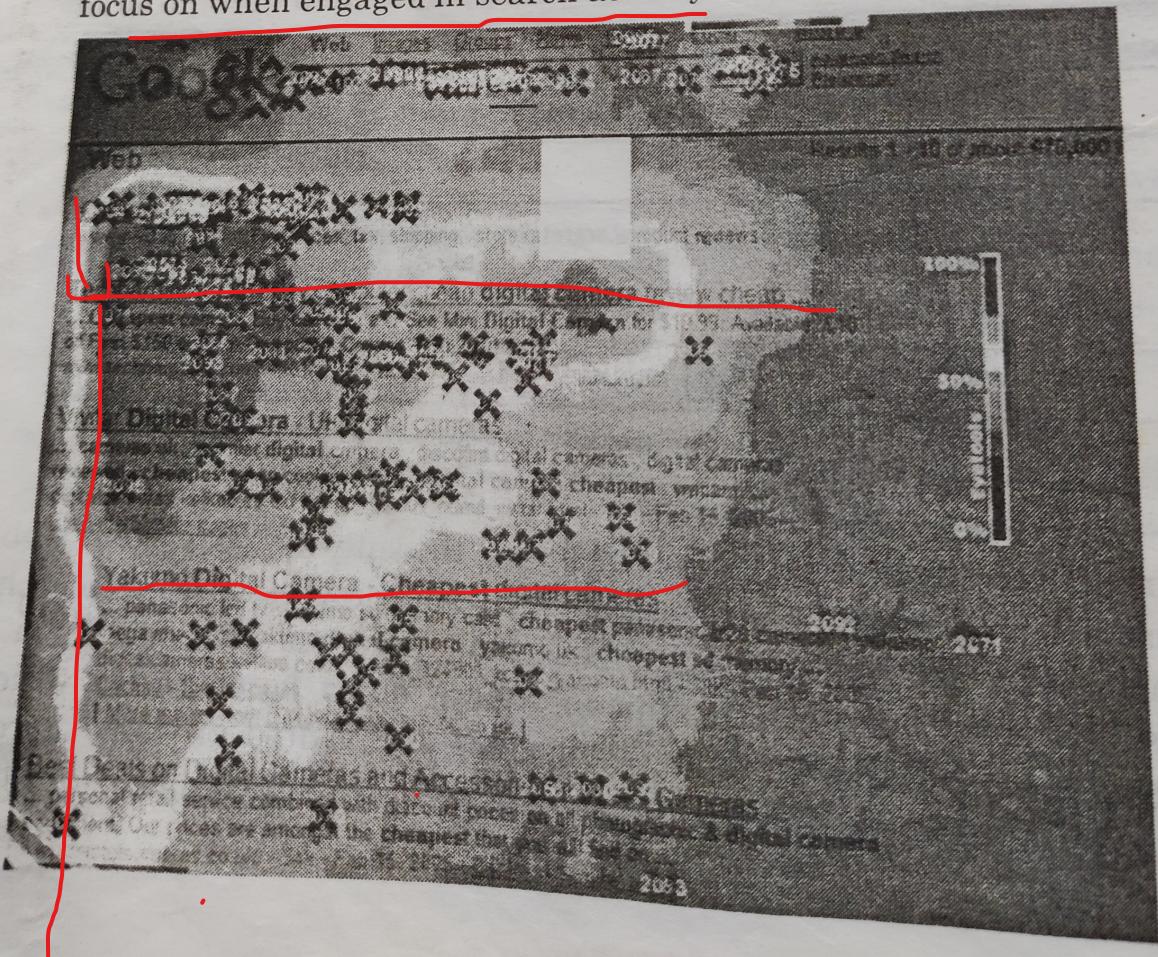
86% surveyed said they have used the Internet to find a local business, a rise from the 70% figure reported the year before.

80% reported researching a product or service online, then making that purchase offline from a local business.

Local search is an increasingly important component of SEO.

~~1.11 EYE TRACKING : HOW USERS SCAN RESULT PAGES ?~~

Research firms Enquiro, Eyetools, and Digidit conducted heat-map testing with search engine users that produced fascinating results about what users see and focus on when engaged in search activity.



The graphic indicates that users spent the most amount of time focusing their eyes in the top-left area where shading is the darkest.

This research study also showed that different physical positioning of on-screen search results resulted in different user eye-tracking patterns. When viewing a standard Google results page, users tended to create an "F-shaped" pattern with their eye movements, focusing first and longest on the upper-left hand corner of the screen;

Moving down vertically through the first two or three results; moving across the page to the first paid page result; moving down another few vertical results; and then moving across again to the second paid result.

In May 2008, Google introduced the notion of Universal Search. This was a move from simply showing the 10 most relevant web pages (now referred to as "10 blue links") to showing other types of media, such as videos, images, news results, and so on, as part of the results in the base search engine. The other search engines followed suit within a few months, and the industry now refers to this general concept as Blended Search.

Blended Search, however, creates more of a chunking effect, where the chunks are around the various rich media objects, such as images or video. Understandably, users focus on the image first. Then they look at the text beside it to see whether it corresponds to the image or video thumbnail (which is shown initially as an image).

Google

map Houston

Suche

Erweiterte Suche

Alles Bilder Videos News Shopping Mehr

Kön Stadort ändern

Des Web Seiten auf Deutsch Seiten aus Deutschland Übersetzte Seiten

Alle Neueste Letzte 24 Std. Letzte 2 Tage Letzte Woche Letzter Monat Letztes Jahr Zeitraum festlegen... Mehr Optionen

Houston, Texas Verlinke Station

Map of Houston, Texas | MapQuest [Diese Seite übersetzen] Map search of Houston, Texas provided by MapQuest. The consumer's choice for online maps and directions.
www.mapquest.com/maps?city=Houston - Im Cache - Ähnliche Seiten

Houston Map - Map of Houston, TX - Yahoo! Travel [Diese Seite übersetzen] Interactive map of Houston, TX - find local attractions, hotels, restaurants, shops, airports and entertainment venues.
travel.yahoo.com/ymap/191532916-map_of_houston_tx - Im Cache - Ähnliche Seiten

Interactive Map of Houston, Texas - TourTexas.com [Diese Seite übersetzen] You can now click & drag the map to move the map image wherever you want. Click here for a static map of Houston, TX area ...
www.tourismontexas.com/maps/houston/index.cfm - Im Cache - Ähnliche Seiten

Map of Downtown Houston [Diese Seite übersetzen] Map Of Downtown Houston
www.visit-houston.com/downtownmap.html - Im Cache - Ähnliche Seiten

Houston TX Map [Diese Seite übersetzen] 30 Nov 2010 Google Map of Houston, Texas, USA ... Click here for more - Houston Texas Time - Houston Airport Houston Map Apple Store-Houston ...
www.greenwichmeantime.com/.../houston/map.htm - Im Cache - Ähnliche Seiten

Interactive Map of Downtown Houston - Marketscenter.net [Diese Seite übersetzen] www.marketscenter.net/ext/houstondowntown/ - Ähnliche Seiten

Houston Maps | Houston Map | VisitHoustonTexas.com | Interactive Map [Diese Seite übersetzen] Houston Interactive Maps The Interactive Map allows you to customize locations that are plotted on the map. Your map will only contain features that fall

1.22

- The first 10 results received 89.71% of all click-through traffic;
 - The next 10 results (normally listed on the second page of results) received 4.71%
 - The third page 2.42%; and
 - The fifth page 1.07%.
 - All other pages of results received less than 1% of total search traffic clicks.
- According to another study :**
- 72% of searchers click on the first link of interest.
 - 25.5% read all listings first and then decide which one to click.
 - Both effects most likely play a role in searcher behaviour.

1.15 CLICK TRACKING

► How Users Click on Results? Natural Versus Paid

The AOL survey data given in the above figure demonstrated that natural results took the lion's share of click results. Further data from the Enquiro, Didit, and Eyetools tracking study shows which results users notice when looking at a search results page.

Let's See it through one table.

✓

Rank	Natural Result Visibility	Paid Result
1	100%	50%
2	100%	40%
3	100%	30%
4	85%	20%
5	60%	10%
6	50%	10%
7	50%	10%
8	30%	10%
9	30%	-
10	20%	-

→ We can identify some Remarkable Points from above table :

- » The natural results is double or more (up to six times) of the visibility of same position in the paid results.
- » For example, in position 5 only 60% of users ever even notice the natural result.
- » But the paid search results is worse, with only 10% of users noticing the result in the fifth position.

→ Some important points to be note down from enquiero study :

- » 85% of searchers click on natural results.
- » The top four sponsored slots are equivalent in views to being ranked at 7-10 natural search in terms of visibility and click-through.

Ch.1 : The Search

- » This me... search co...
- An intere...
- » In spite ... than SP...
- showin... online...
- That i...
- » SEM...
- 87% t...

1.16 PPC AR...

- Clearly similar...
- The RO... date it...
- Howe... search...
- ICrossin... search. Existing sole pa...

» This means if you need to make business case for natural search, then natural search could be worth two to three times your PPC (pay per click) results.

→ An interesting fact :

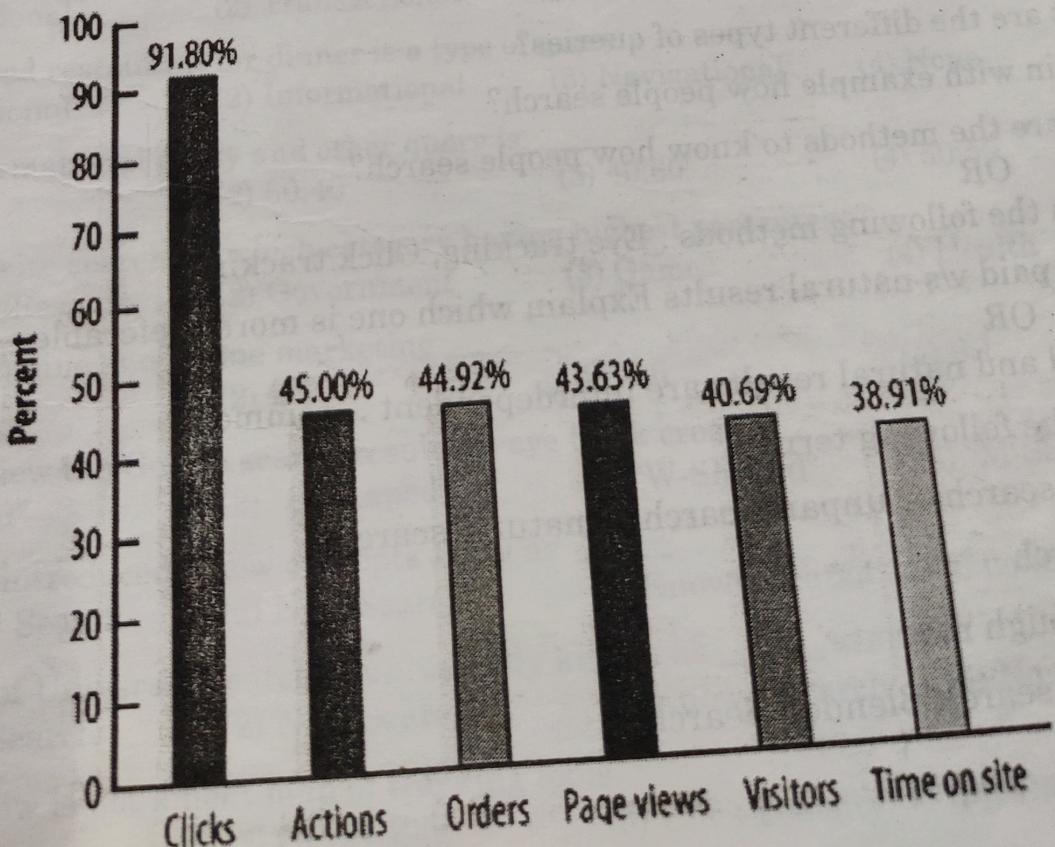
- » In spite of this data, companies are much more likely to spend money on PPC than SEO. For example, on June 30, 2008, Jupiter Research released a report showing that search advertising should continue to be the largest category of online ad spending, growing from \$9.1 billion in 2007 to \$20.9 billion in 2013. That is significant growth.
- » SEMPO data shows that spending on SEO was \$1.3 billion which is 11% and 87% to PPC

1.16 PPC ARE MORE EASY COMPARE TO SEO.

- Clearly, the PPC model is easier for companies to understand because it is more similar to traditional direct marketing methods than SEO is.
- The ROI of PPC can be tracked and demonstrated more reliably than SEO; thus, to date it has been considered more accountable as a marketing channel.
- However, as budgets are tightening and the focus is shifting to the highest ROI search investments, the focus is increasingly on SEO.

ICrossing published a report that showed a strong synergy between natural and paid search. The study shows what happens when you incorporate natural search into an existing paid search campaign and compare its performance to the performance of the sole paid search campaign. The results given in below figure.

Online performance percentage change when integrating natural search and paid search



2.2

2.2

2.1 INTRODUCTION

2.2

2.1 INTRODUCTION

One of the most important things to understand about search engine is that crawlers (or spiders) used to visit all the web pages across the web are software programs. Software programs are only as smart as the algorithms used in implementing them, but still don't have intelligence of human beings. Software programs cannot interpret each of the various types of data that humans can use videos and images. The pages returned by search engine are referred as search engine results pages (SERPs). Each engine results in a slightly different format and include vertical results.

Refer Video in given DVD : What Is Search Engine Optimization - SEO.mp4

2.2 UNDERSTANDING SEARCH ENGINE RESULTS

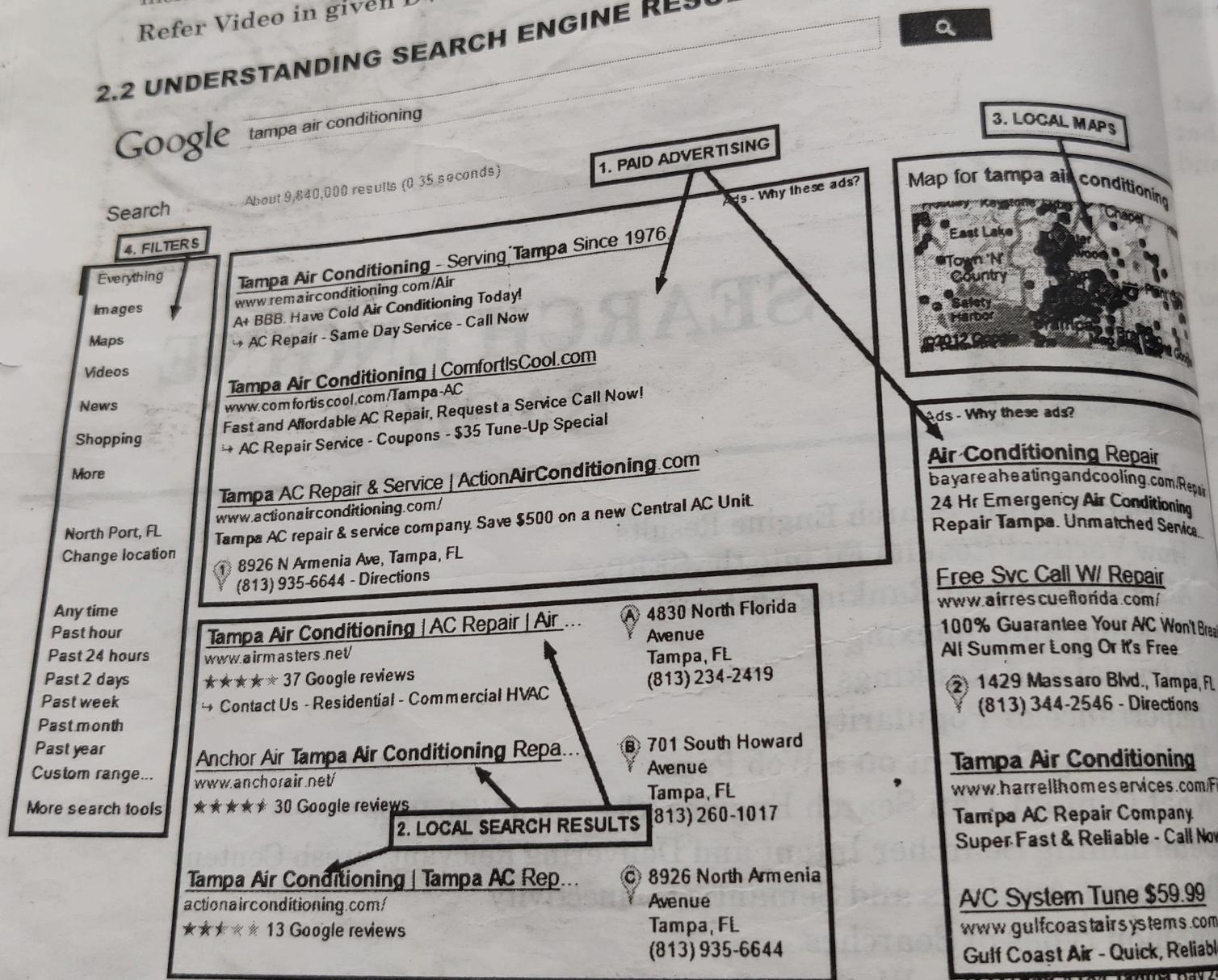


FIGURE : TYPICAL GOOGLE SEARCH QUERY RESULT

Ch.2 : Search Engine Basics

YAHOO!

RELATED SEARCHES

pet supplies plus

discount pet supplies

wholesale pet supplies

petsmart

petco

FILTER BY TIME

Anytime

Past day

Past week

Past month

pet supplies

WEB

IMAGES

VIDEO

LOCAL

SHOPPING

BUS

Search

Options

You can have your text ads here.

Also try: [pet supplies plus](#), [discount pet supplies](#), [wholesale pet supplies](#), more...

Ads related to pet supplies

[PetSmart® Pet Supplies | PetSmart.com](#)

Get Great Deals on Pet Products at the PetSmart® Spring Savings Sale!

[PetSmart.com](#)

Find Your Local PetSmart®

Dog Supplies

Become a PetPerks® Member

Cat Supplies

Stock Up & Save Up to 25%

Orders \$49+ Ship Free

[Pet Supplies - Up To 25% Off Pet Meds & Supplies.](#)

Free Shipping over \$39. Order Now!

[1800PetMeds.com](#)

[Drs. Foster & Smith | DrsFosterSmith.com](#)

Free Shipping on Dog/Cat Healthcare Supply, Flea/Tick & Pet Meds!

Free Shipping - Flea & Tick Control - Save on Pet Meds - What's On Sale

[DrsFosterSmith.com](#)

[PETCO Online Pet Supplies - Shop Online or at 1,000+ Stores.](#)

Free Shipping on Most Orders!

[www.PETCO.com](#)

More Sponsors: [pet supplies](#), [pet grooming](#), [pet health care](#), [pet store](#)

[Pet Supplies near Los Angeles CA 90017](#) (Change Location)

 [Al's Pet Supplies](#)  [info](#)
[local.yahoo.com](#)

Ads

[GPS Pet Tracking](#)

Know where your pet is? You will with GPS. Learn more.
[www.tagg.com](#)

[professional pet grooming](#)

Complete Grooming For Your Pet! Schedule Appointment: 562-219-2896.
[www.whittierdogandcathospital.com](#)

[PetSolutions Pet Supplies](#)

Free Shipping on All \$49+ Orders! Same Day Shipping - Order Today.
[PetSolutions.com/Pet-Supplies](#)

[Supplies Sale](#)

Discount Prices On Cardinal Labs Pet Products. Free S&H Over \$85.
[www.EntirelyPets.com/CardinalLabs](#)

FIGURE : TYPICAL YAHOO SEARCH QUERY RESULT

Web Images Videos Shopping News Maps More | MSN Hotmail Jet f Sign Out Rewards

bing

Web

RELATED SEARCHES

[Museum Of Jurassic Technology](#)

[Fisher Investments On Technology](#)

[Future Technology](#)

[Technology Schools](#)

[Technology Tools](#)

[Technology Jobs](#)

[Technology Videos](#)

[Technology Magazines](#)

SEARCH HISTORY

[Google Search](#)

[Google](#)

[technology](#)

See all

Clear all · Turn off

technology



Web News Videos Images More▼

ALL RESULTS

1-10 of 545,000,000 results · [Advanced](#)

Ads

[Study Technology](#)

ColoradoTech.edu/MS-EIS · Earn Your Masters in Information Systems at CTU Online. Apply Now!

[Technology for Education](#)

www.apple.com/education · With educational apps, iBooks, and iTunes U, iPad changes learning.

Other ideas: [technology news](#) · [types of technology](#)

[Technology - Wikipedia, the free encyclopedia](#)

Definition and usage Science, engineering ... History

Technology is the creation, usage and knowledge of tools, techniques, crafts, systems or methods of organization as means in order to solve a problem or serve some ...

[en.wikipedia.org/wiki/Technology](#)

[technology: Definition from Answers.com - Answers.com: Wiki Q&A ...](#)

Library > Literature & Language > Dictionary (tĕk-nĕl'ĕ-jĕ) n., pl. -gies . The application of science, especially to industrial or commercial objectives ...

[www.answers.com/topic/technology](#)

FIGURE : TYPICAL BING QUERY RESULT

definition

Ad

2.4

For further information view video : Getting Started.mp4

(1) Vertical Navigation :

Each Search Engine offers the option to search different verticals, such as images, news, video, or maps. Following these links will result in a query with a more limited index. In above figure for example, you might be able to see news items about stuffed animals or videos featuring stuffed animals.

(2) Search Query Box :

All of the engines show the query you've performed and allow you to edit or re-enter a new query from the search results page. Next to the search query box, the engines also offer links to the advanced search page.

(3) Result Information :

This section provides a small amount of meta information about the results that you're viewing, including an estimate of the number of pages relevant to that particular query (these numbers can be, and frequently are, wildly inaccurate and should be used only as a rough comparative measure).

(4) PPC Advertising :

The "Sponsored Results," to use Yahoo!'s terms, are text ads purchased by companies that use the various search ad platforms—Google AdWords, Yahoo! Search Marketing, and Microsoft adCenter.

The results are ordered by a variety of factors, including relevance (for which click-through rate, use of searched keywords in the ad, and relevance of the landing page are factors in Google) and bid amount (the ads require a maximum bid, which is then compared against other advertisers' bids).

(5) Natural/organic/algorithmic results :

These results are pulled from the search engines' primary indexes of the Web and ranked in order of relevance and popularity according to their complex algorithms.

This is the area where we need to concentrate throughout the course of SEO.

(6) Query refinement suggestions :

Query refinements are now offered by all the three most popular search engines.

The goal of these links is to let users search with a more specific and possibly more relevant query that will satisfy their intent.

In March 2009, Google has started giving this service of refinements by implementing Orion Technology, which was acquired by Google in 2006. The goal of this enhancement is to provide a wider array of refinement choices. For example, a search on principles of physics will display refinements for the Big Bang, angular momentum, quantum physics, and special relativity.

Note : SERPs (Search Engine Result Pages) are always changing as the engineers at Google / Yahoo always trying new formats and layouts. Thus, Images given above may change time to time.

Ch.2 : Sea

2.3 HOW

For m
(which
to oth
additi

Next

Co

2.8

► **Some Facts and Conclusion :**

- For many types of queries, search engine show vertical results, or instant answer.
- Enter SE1 2HG in Google which is post code of U.K to get the location of it. (Directly in google map)
- Enter temperature and city name in Google, you will get direct answer without opening any website if u want only temperature.
- There is a vast variety of vertical integration into search results means that for many popular queries, the standard set of 10 links to external pages is no longer the rule.
- As a direct consequence, site owners and web marketers must take into account how this incorporation of vertical search results may impact their rankings and traffic. For many of the searches shown in the previous figures, a high ranking—even in position #1 or #2 in the algorithmic/organic results—may not produce much traffic because of the presentation of the vertical results above them.

2.4 ALGORITHM-BASED RANKING SYSTEMS

► **Crawling, Indexing and Ranking**

All the parts of the search engine are important, but the search algorithm is the cog that makes everything work. It might be more accurate to say that the search algorithm is the foundation on which everything else is built. How a search engine works is based on the search algorithm, which is closely related to the way that data is discovered by the user.

In very general terms, a search algorithm is a problem-solving procedure that takes a problem, evaluates a number of possible answers, and then returns the solution to that problem. A search algorithm for a search engine takes the problem (the word or phrase being searched for), sifts through a database that contains cataloged keywords and the URLs with which those words are associated, and then returns pages that contain the word or phrase that was searched for, either in the body of the page or in a URL that points to the page.)

But it even goes one better than that. The search algorithm returns those results based on the perceived quality of the page, which is expressed in the quality score. How this neat little trick is accomplished varies according to the algorithm that's being used. There are several classifications of search algorithms, and each search engine uses algorithms that are slightly different. That's why a search for one word or phrase will yield different results from different search engines.)

Search algorithms are generally divided into three broad categories: on-page algorithms, whole-site algorithms, and off-site algorithms. Each type of algorithm looks at different elements of a web page, yet all three types are generally part of a much larger algorithm.

→ On-page algorithms :

Algorithms that measure on-page factors look at the elements of a page that would lead a user to think the page is worth browsing. This includes how keywords are used in content as well as how other words on the page relate. For example, for any given topic, some phrases are common, so if your web site is about beading, an on-page algorithm will determine that by the number of times the term "beading" is used, as well as by the number of related phrases and words that are also used on the page (e.g., wire, patterns, jump rings, string or stringing, etc.).

These word patterns are an indicator that the algorithm results — that beading is the topic of the page — are, in fact, correct. The alternative, no related patterns of words, suggests that keywords were entered randomly on a page, just for their value.)

The algorithm will also likely look at the proximity of related words. This is just another element of the pattern that validates the algorithmic results, but these elements also contribute to the quality score of a page.

The on-page algorithm also looks at some elements that human visitors can't see. The back side of a web page contains special content designed specifically for web crawlers. This content is called meta tags. When a crawler examines your web site, it looks at these tags as definitions for what you intend your site to be about. It then weighs that against the other elements of on-site optimization, as well as whole-site and off-site optimization, too.)

Whole-site algorithms :

If on-site algorithms look at the relationship of words and content on a page, then whole-site algorithms look at the relationship of pages on a site. For example, does the home page content relate to the content on other pages? This is an important factor from a user's viewpoint, because if users come to your site expecting one thing and then click through a link and wind up in completely unrelated territory, they won't be happy.

To ensure that your web site is what it claims to be, the whole-site algorithm looks at the relationship of site elements, such as the architecture of pages, the use of anchor text, and how the pages on your site are linked together. This is one reason why it's best to have separate web sites if you have a site that covers multiple, unrelated topics or subjects.

How your site is architected — that is, how usable it is for a site visitor, based on the topic it appears to be about — is a determining factor in how useful web site visitors find your site. Understand that one of the most important concepts in SEO is how useful site visitors find your web site and a recurring theme throughout this book is building sites that visitors want to spend time on. Do that and SEO will (usually) fall naturally into place.

→ Off-site algorithms :

I can hear you already. "What does anything that's off my web site have to do with how my web page ranks in SERPs?" The answer is incoming links, which constitute

Incoming links

2.10

Web Searching Technology and Search Engine Optimization

(an off-site factor that will affect your page ranking in sometimes dramatic ways. A good incoming link is the equivalent of a vote of confidence for your site, and a high level of confidence from surfers will also help boost your page ranking.

Notice the emphasis I placed on good incoming link? That's another of those vitally important things you should commit to memory. Good incoming links are those that users willingly provide because they found your site, or a page on your site, useful. These typically are not links that are paid for. Let's go back to the concept that creating a site visitors will find useful is your best SEO tool.

Good incoming links are how visitors show other visitors (and therefore web crawlers) the value they attach to your site. The number of good incoming links you have is directly proportionate to the amount of confidence and trust that visitors appear to have in your site.

In summary, the off-site algorithm adds yet another dimension to how the quality of your page is ranked. Like the other algorithms, it's not a stand-alone measurement, but a component of a larger algorithm that tries to extract the true value of the web page or web site.

→ Additional Algorithms :

Phew, that was a lot of information about search algorithms to take in, and we're not done. Within those three main categories of algorithms are many other lesser algorithms that also contribute to the way your web site and web pages are ranked. Some of the most common types of search algorithms include the following:

→ List search :

A list-search algorithm searches through specified data looking for a single key. The data is searched in a very linear, list-style method. The result of a list search is usually a single element, which means that searching through billions of web sites could be very time-consuming, but yields a smaller search result.

→ Tree search : broad to narrow, narrow to broad

Envision a tree. Now examine that tree either from the roots out or from the leaves in. This is how a tree-search algorithm works. The algorithm searches a data set from either the broadest to the most narrow or from the most narrow to the broadest. Data sets are like trees: A single piece of data can branch to many other pieces of data, which is very much how the Web is set up. Tree searches, then, are more useful when conducting searches on the Web, although they are not the only searches that can be successful.

→ SQL search : see-quel ← not hierarchical

One of the difficulties with a tree search is that it is conducted in a hierarchical manner, meaning it's conducted from one point to another, according to the ranking of the data being searched. A SQL (pronounced see-quel) search enables data to be searched in a nonhierarchical manner, which means that data can be searched from any subset of data.

Ch.2 : Search Engine Basics

→ Informed search : like tree, question

An informed-search algorithm looks for a specific answer to a specific problem in a tree-like data set. The informed search, despite its name, is not always the best choice for web searches because of the general nature of the answers being sought. Instead, informed search is better used for specific queries in specific data sets.

→ Adversarial search : difficult to use, display all possible solution, An adversarial-search algorithm looks for all possible solutions to a problem, much like finding all the possible solutions in a game. This algorithm is difficult to use with web searches because the number of possible solutions to a word or phrase search is nearly infinite on the Web.

→ Constraint satisfaction search :

When you think of searching the Web for a word or phrase, the constraint-satisfaction-search algorithm is most likely to satisfy your need to find something. In this type of search algorithm, the solution is discovered by meeting a set of constraints, and the data set can be searched in a variety of different ways that do not have to be linear. Constraint satisfaction searches can be very useful for searching the Web.

After a short discussion on what is algorithms, let's take a look to how this algorithms works.

It is the most important task for SEO practitioners to understand that how crawling, indexing and ranking works. It helps them in determination of what actions need to taken to meet their goals. The search engines have several major goals and functions. Which includes:

Crawling and indexing the billions of documents (pages and files) accessible on the Web.

Responding to user queries by providing lists of relevant pages.

2.5 CRAWLING AND INDEXING

Imagine the World Wide Web as a network of stops in a big city subway system. Each stop is its own unique document (usually a web page, but sometimes a PDF, JPEG, or other file). The search engines need a way to "crawl" the entire city and find all the stops along the way, so they use the best path available: the links between web pages. For example :

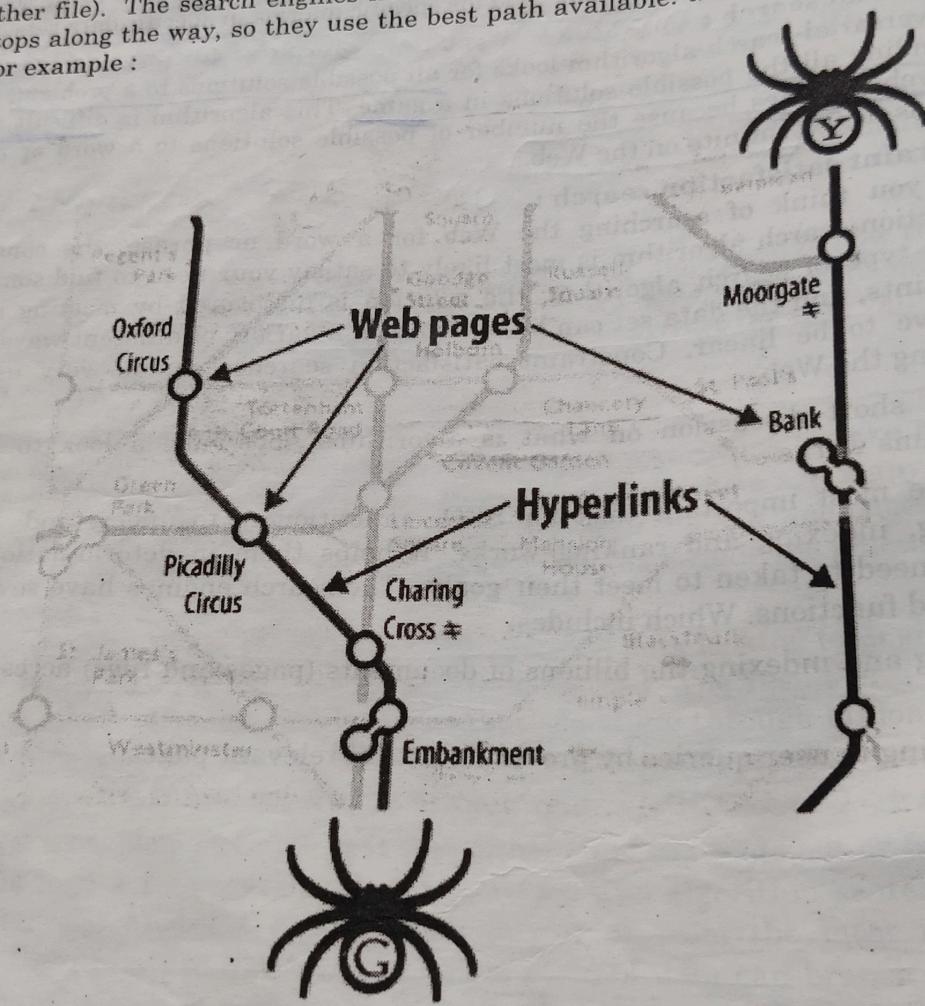


FIGURE : HOW CRAWLER WORKS

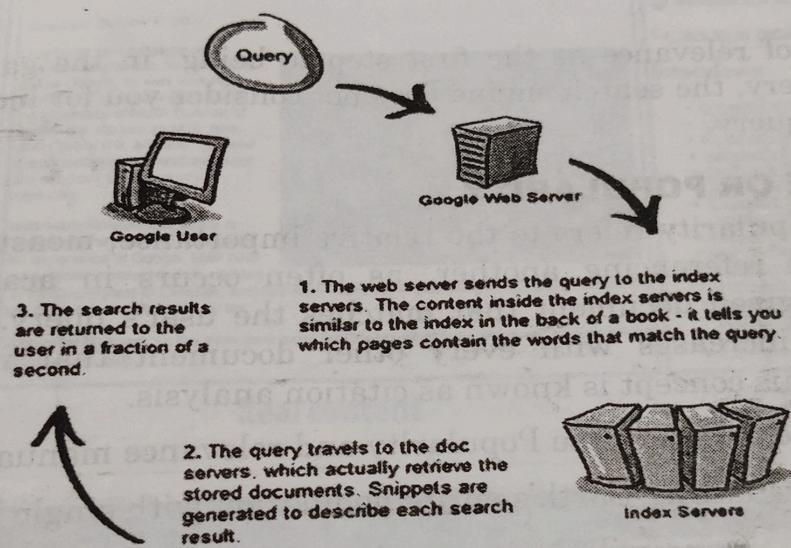
The link structure of the Web serves to bind together all of the pages that were made public as a result of someone linking to them. Through links, search engines' automated robots, called crawlers or spiders (as displayed in above figure), can reach the many billions of interconnected documents.

Once the engines find these pages, their next job is to parse the code from them and store selected pieces of the pages in massive arrays of hard drives, to be recalled when needed in a query. To accomplish the monumental task of holding billions of pages that can be accessed in a fraction of a second, the search engines have constructed massive data centres to deal with all this data.

Life of a Google Query

Life of a Google Query

The life span of a Google query normally lasts less than half a second, yet involves a number of different steps that must be completed before results can be delivered to a person seeking information.



©2010 Google - [Home](#) - [About Google](#) - [Privacy Policy](#) - [Terms of Service](#)

FIGURE : LIFE OF A GOOGLE QUERY

→ AJAX

2.10 DETERMINING SEARCHER INTENT AND DELIVERING RELEVANT, FRESH CONTENT

Modern Commercial search engine rely on the science of information retrieval (IR). Two critical components comprised the majority of search functionality they are :

(1) Relevance and Importance

(2) To measure this factor, search engine perform document analysis and link analysis

2.17 WHERE FRESHNESS MATTERS

- ✓ Generally uses older sources for results. Sometimes need new sources for results. For example, when there is breaking news, such as an **earthquake**, the search engines begin to receive queries within seconds, and the first articles begin to appear on the Web within 15 minutes. Google refers to this concept as **query deserves freshness (QDF)**. Factors affecting fresh content are:

- *Search volume* → *News coverage*
- *Blog coverage* → *Toolbar data*

QDF applies to up-to-the-minute news coverage, but also to other scenarios such as hot, new discount deals or new product releases that get strong search volume and media coverage.

2.18 ANALYZING RANKING FACTORS

SEOMoz.com (now moz.com) periodically conducts surveys of leading search engine optimizers to determine what they think are the most important ranking factors. They are divided into mainly three :

- (1) Positive Ranking Factors
- (2) Negative Ranking Factors
- (3) Other Ranking Factors

(1) Positive Factors :

Following are the list of factors which are considered as positive ranking factors.

- Keyword use in title tag button
- Anchor text of inbound link link
- Global link authority of site
- Age of site
- Link popularity within the site's internal link structure
- Topical relevance of inbound link
- Link popularity of site in topical community
- Keyword use in body text
- Global link popularity of sites that link to the site

(2) Negative Factors :

Following are the list of factors which are considered as Negative ranking factors.

- Server is often inaccessible to crawler
- Content very similar to or duplicate of other web pages
- External links to low-quality/spam sites
- Participation in link schemes or actively selling links
- Duplicate titles/meta tags on many pages

(3) Other Factors :

- Following are the list of factors which are considered as Other ranking factors.
- Rate of acquisition of links
 - Usage data if it advances then user spends more time
 - User Data
 - Google sandbox – Work as a filter

2.19 USING ADVANCED SEARCH TECHNIQUES

With the use of advanced search techniques user can get the required result.

[-keyword] : search for loans –student in google will gives result for all types of loans except student loans

[+keyword] : allows us to combine one or more terms in our searching

["key phrase"] : allows us to search whole phrase like “seo companies”

[keyword OR keyword] : shows result of atleast one keyword

► Advance Google Search Operators :

Operator	Description	Example
site:	Domain restricted Search	site:www.marwadieducation.edu.in
inurl:	The term must appear in the url of the page	inurl:investor
allinurl:	The whole term must be in the url of the page	allinurl:pez faq
intitle:	The search term must be appeared in title tag	movies intitle:hindi
allintitle:	The whole term must be in the title of the page	allintitle:google advanced operators
inanchor:	The term must appear in anchor text of links to the page	restaurants rajkot inanchor:kid-friendly
allinanchor:	The whole term must appear in anchor text of links to the page	allinanchor:useful parenting sites
Operator	Description	Example
intext:	The term must appear in the text of the page.	cricket intext:sachin
allintext:	All query words must appear in the text of the page.	allintext:ingredients olive oil
ext: / filetype: * (wildcard)	Search for particular file type Replace any term with *	Form 1098-T IRS filetype:pdf "Thomas * Edison" will return the result → Thomas Edison → Thomas A Edison → Thomas Alva Edison

related: website	List web pages that are similar or related to the URL.	related:www.way2sms.com
info: / id: aweb	Find info about a page Display Google's <u>cached</u> version of a web page.	info:www.java2s.com cache:www.seomoz.com
Operator	Description	Example
~	Synonyms	<p>~neuroscience Returns results: → Neurophysiology → Neurobiology → Brain → neurology</p> <p>"SciFinder Scholar" ~tutorial Returns results: → SciFinder Scholar help → SciFinder Scholar guide → SciFinder Scholar → Documentation</p>
...	Range Search	14inch...17inch laptops
define	Searches for definitions of words from various web sources	define:combinatorics define passive voice
Operator	Description	Example
movie:	Searches for show times by location or for a specific movie	movie:Iron Man 2
phonebook:	<p>Displays phonebook listing</p> <ul style="list-style-type: none"> • phonebook: search for business and residential listings. • bphonebook: search for business listings only. • rphonebook: search for residential listings only. 	phonebook:sridaran rajagopal
stocks:	Displays the current stock quote	stocks:LMT
book	Gives the full description of given book	book how to win friends and influence people
weather	Gives present weather of given city	weather rajkot
location	Gives location about particular thing for particular city	queen location rajkot

2.19 USING ADVANCED SEARCH TECHNIQUES

With the use of advanced search techniques user can get the required result.
[-keyword] : search for loans -student in google will gives result for all types of loans except student loans

[+keyword] : allows us to combine one or more terms in our searching

["key phrase"] : allows us to search whole phrase like "seo companies"

[keyword OR keyword] : shows result of atleast one keyword

► Advance Google Search Operators :

Operator	Description	Example
site:	Domain restricted Search	site:www.marwadieducation.edu.in
inurl:	The term must appear in the url of the page	inurl:investor
allinurl:	The whole term must be in the url of the page	allinurl:pez faq
intitle:	The search term must be appeared in title tag	movies intitle:hindi
allintitle:	The whole term must be in the title of the page	allintitle:google advanced operators
inanchor:	The term must appear in anchor text of links to the page	restaurants rajkot inanchor:kid-friendly
allinanchor:	The whole term must appear in anchor text of links to the page	allinanchor:useful parenting sites
Operator	Description	Example
intext:	The term must appear in the text of the page.	cricket intext:sachin
allintext:	All query words must appear in the text of the page.	allintext:ingredients olive oil
ext: / filetype: * (wildcard)	Search for particular file type Replace any term with *	Form 1098-T IRS filetype:pdf "Thomas * Edison" will return the result → Thomas Edison → Thomas A Edison → Thomas Alva Edison

<u>related:</u>	List web pages that are similar or related to the URL.	related:www.way2sms.com
<u>info: / id:</u>	Find info about a page	info:www.java2s.com
<u>cache:</u>	Display Google's <u>cached</u> version of a web page.	cache:www.seomoz.com
<u>Operator</u>	Description	Example
<u>-</u>	Synonyms	~neuroscience Returns results: → Neurophysiology → Neurobiology → Brain → neurology "SciFinder Scholar" ~tutorial Returns results: → SciFinder Scholar help → SciFinder Scholar guide → SciFinder Scholar → Documentation
<u>...</u>	Range Search	14inch...17inch laptops
<u>define</u>	Searches for definitions of words from various web sources	define:combinatorics define passive voice
<u>Operator</u>	Description	Example
<u>movie:</u>	Searches for show times by location or for a specific movie	movie:Iron Man 2
<u>phonebook:</u>	Displays phonebook listing <ul style="list-style-type: none"> • phonebook: search for business and residential listings. • bphonebook: search for business listings only. • rphonebook: search for residential listings only. 	phonebook:sridaran rajagopal
<u>stocks:</u>	Displays the current stock quote	stocks:LMT
<u>book</u>	Gives the full description of given book	book how to win friends and influence people
<u>weather</u>	Gives present weather of given city	weather rajkot
<u>location</u>	Gives location about particular thing for particular city	queen location rajkot

2.20 VERTICAL SEARCH ENGINES

The big three search engines offer a wide variety of vertical search products. Like:

» Google :

Google Maps, Google Images, Google Product Search, Google Blog Search, Google Video, Google News, Google Custom Search Engine, Google Book Search, Google Gov't Search, etc.

» **Yahoo!**:

Yahoo! News, Yahoo! Local, Yahoo! Images, Yahoo! Video, Yahoo! Shopping, Yahoo! Audio Search, etc.

» **Bing :**

Bing Image, Bing Video, Bing News, Bing Maps, Bing Health, Bing Products, etc.

► **Image search :**

All three search engines offer image search capability. Basically, image search engines limit the data that they crawl, search, and return in results to images. This means files that are in GIF, TIF, JPG, and other similar formats.



FIGURE : TYPICAL IMAGE SEARCH ON BOSTON RED SOX

Image search engines get a surprisingly large number of searches performed on them. According to comScore, more than 1 billion image searches were performed in October 2008, or a little more than 8.3% of all searches performed in that month. Similar data from Nielsen Online shows image search comprised 6.0% of all search in January 2009. However, since an image is a binary file, it cannot be readily interpreted by a search engine crawler.

► **Video search :**

As with image search, video search engines focus on searching specific types of files on the Web, in this case video files, such as MPEG, AVI, and others.

Web Searching Technology and Search Engine Optimization

A very large number of searches are also performed in video search engines. Hitwise and comScore data shows approximately 125 million searches performed on video search on the major search engine properties in October 2008, and then this number balloons to 2.6 billion searches once you include YouTube which has become the search engine on the Web.

There is significant traffic to be gained by optimizing for video search engines and participating in them. Once again, these are binary files and the search engines cannot easily tell what is inside them. This means optimization is constrained to data in the header of the video and on the surrounding web page.

However, each search engine is investing in technology to analyze images and videos to extract as much information as possible. For example, OCR technology is being used to look for text within images, and other advanced technologies are being used to analyze video content. Flesh-tone analysis is also in use to detect porn or recognize facial features. The application of these technologies is in its infancy, and is likely to evolve rapidly over time.

► News search :

News search is also unique. News search results operate on a different time schedule. News search results have to be very, very timely. Few people want to read the baseball scores from a week ago when several other games have been played since then.

News search engines must be able to retrieve information in real time and provide near instantaneous responses. Modern consumers tend to want their news information now.

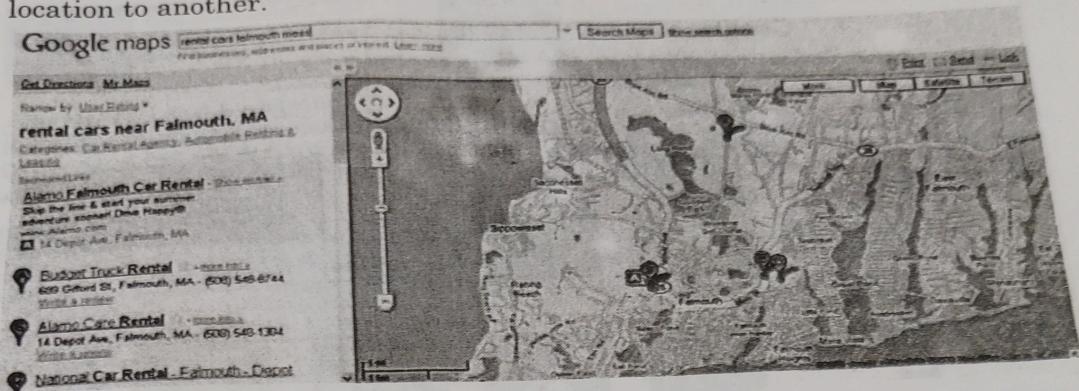
The screenshot shows the Yahoo News homepage with a search bar at the top. Below the search bar, there are news cards for various stories. One card for 'No compromise' over Kirkuk, Iraq Kurdish leader says' is visible, along with other cards for news photos and videos. The right side of the page features sponsored search results for Prince William County VA Real Estate, Reson Auto Insurance, and Bank Central Iraq.

As with the other major verticals, there is a lot of search volume here as well. To have a chance of receiving this volume, you will need to become a news source. This means timely, topical news stories generated on a regular basis.

► Local search/maps :

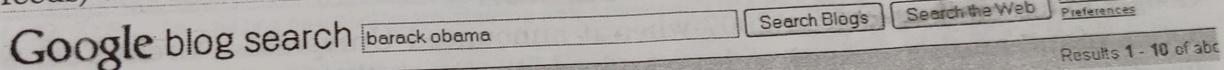
Next up in our hit parade of major search verticals is local search (a.k.a. map search). Local search engines search through databases of locally oriented information, such as the name, phone number, and location of local businesses around the world, or just provide a service, such as offering directions from one

location to another.



► Blog search :

Google has implemented a search engine focused just on blog search called Google Blog Search (misnamed because it is an RSS feed engine and not a blog engine). This search engine will respond to queries, but only search blogs (more accurately, feeds) to determine the results.



Blog results

Browse Top Stories New!

Published
Last hour
Last 12 hours
Last day
Past week
Past month
→Anytime
[Choose Dates](#)

Subscribe:

[Blogs Alerts](#)
[Atom | RSS](#)

Related Blogs: [Barack Obama and Joe Biden: The Change We Need](#)

<http://www.barackobama.com/>
[Change.gov - The Official Web Site of the](http://change.gov) - <http://change.gov/>
[Flickr. Barack Obama's Photostream](http://flickr.com/photos/barackobamadotcom?PHPSESSID=2bae7...) - <http://flickr.com/photos/barackobamadotcom?PHPSESSID=2bae7...>
[Barack Obama : Pictures, Videos, Breaking News](http://www.huffingtonpost.com/news/barack-obama) - <http://www.huffingtonpost.com/news/barack-obama>
[The White House, President Barack Obama](http://www.whitehouse.gov) - [http://www.whitehouse.gov/](http://www.whitehouse.gov)

[Barack Obama's window. 'Prime-time': The Swamp](#)

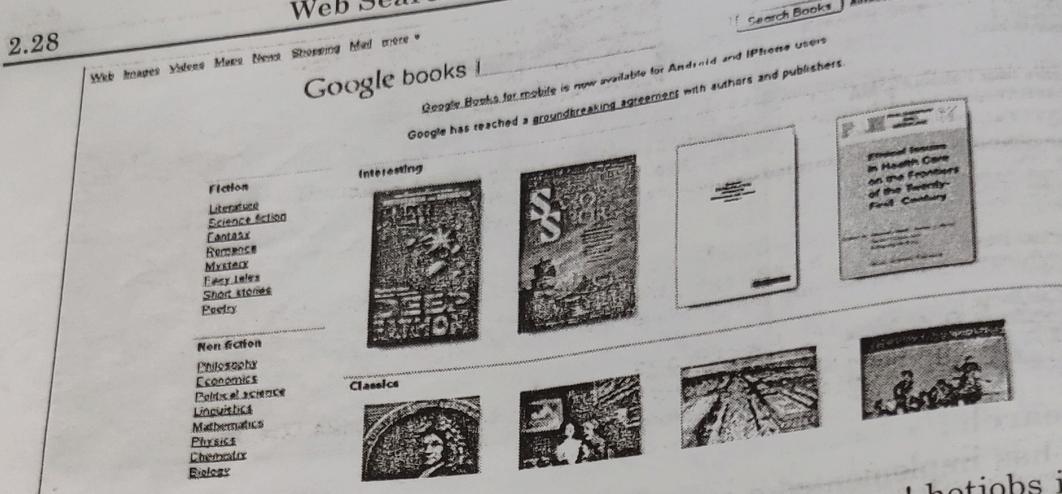
2 hours ago by Mark Silva
Six months in office today, President **Barack Obama** hopes to start drawing on a reservoir of public support for his own leadership as well as public frustration over the state of health care in America to press Congress for sweeping ...
[The Swamp](http://www.swamppolitics.com/news/politics/blog/) - <http://www.swamppolitics.com/news/politics/blog/>

[Barack Obama Twitter Addiction » Right Pundits](#)

6 hours ago by MCCAIN
A **Barack Obama** Twitter account? Surely you are joking! But worse, we at Right Pundits are afraid to report that our president is more infatuated with mind-dumbing technology than almost anyone else in the video-game era. ...
[Right Pundits](http://www.rightpundits.com/) - <http://www.rightpundits.com/> - References
[More results from Right Pundits]

► Book search :

The major search engines also offer a number of specialized offerings. One highly vertical search engine is Google Book Search, which specifically searches only content found within books.



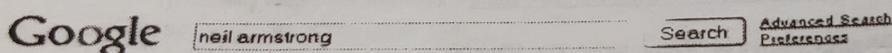
► Job search :

Yahoo! also has a number of vertical search products. Yahoo! hotjobs is an example of a product designed to allow people to search for jobs.

2.21 UNIVERSAL SEARCH/BLENDED SEARCH

- Google made a big splash in 2007 when it announced Universal Search. This was the notion of integrating images, videos, and results from other vertical search properties directly into the main web search results. Other search engines also implemented the same thing before end of 2007. Concept is known as Blended Search.

Note the news results, along with an image at the very top of the results, along with more image results farther down. This information is coming from Google's news search index. If you look farther down in the search results, you will continue to see more vertical results, including video results and a timeline.



[Web](#) [Show options...](#)

News results for neil armstrong

-  [Astronaut moon line was mine: scientist](#) - 14 hours ago
A British scientist claims he came up with astronaut Neil Armstrong's famous moon walking quote while working at Australia's deep-space tracking station. ...
[The Age](#) - 5159 related articles >
[Former Tyler Mayor Layton Recalls Meeting Neil Armstrong](#) - Tyler Morning Telegraph
[Charting nasa's future: to the moon and beyond](#) - 89.3 KPCC - 255 related articles >

Neil Armstrong - Wikipedia, the free encyclopedia

[Neil Alden Armstrong](#) (born August 5, 1930) is an American aviator and a former astronaut, test pilot, university professor, and United States Naval Aviator. ...
[en.wikipedia.org/wiki/Neil_Armstrong](#) - [Cached](#) - [Similar](#)

Apollo 11 - Wikipedia, the free encyclopedia

Comparison between the original and the newly restored Apollo 11 video showing Neil Armstrong making his way to the lunar surface, by climbing down the ...
[en.wikipedia.org/wiki/Apollo_11](#) - [Cached](#) - [Similar](#)
More results from en.wikipedia.org >

Neil Armstrong

Biography of the test pilot who's first space flight occurred in 1966 aboard Gemini 8.
[starchild.gsfc.nasa.gov/docs/StarChild/.../armstrong.html](#) - [Cached](#) - [Similar](#)

Image results for neil armstrong

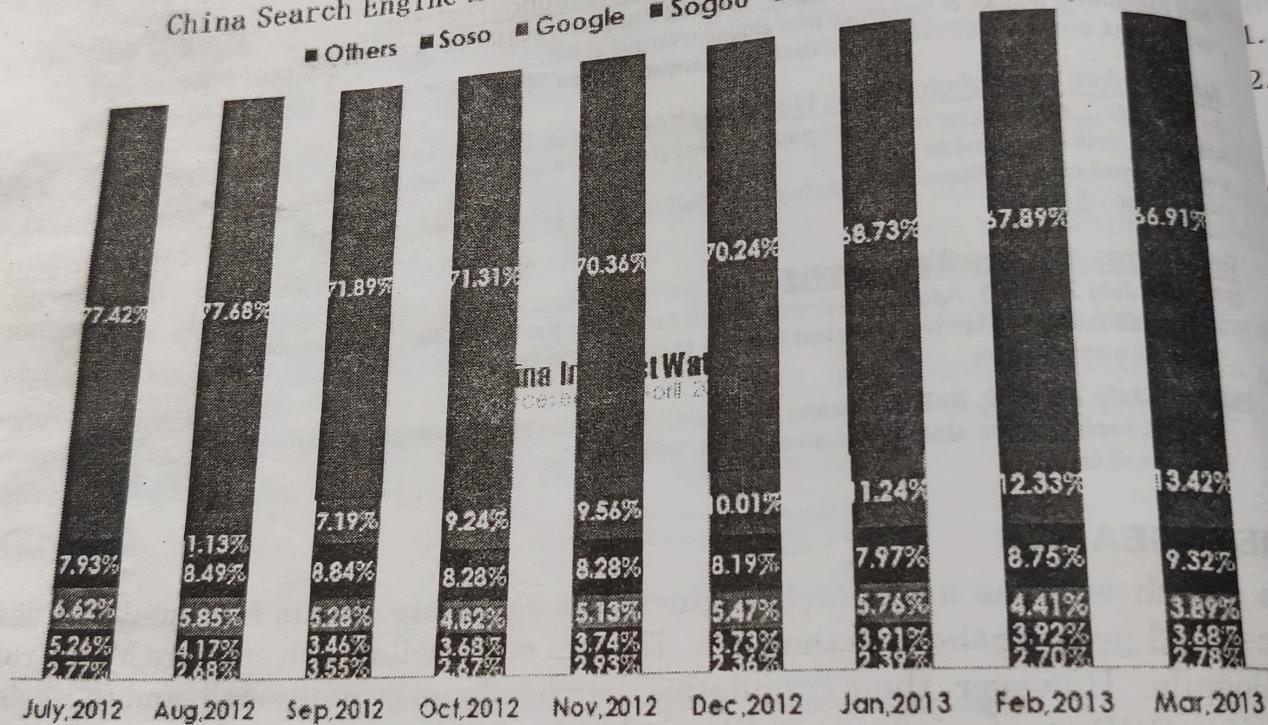


» In addition, some companies offer products that allow anyone to build his own search engine, such as Google's Custom Search

2.23 COUNTRY SPECIFIC SEARCH ENGINES

- » Google is the dominant search engine in many countries but not in all.
- » According to comScore data from May 2013, Google receives 66.7% of all searches performed worldwide.
- » In the asia-specific region, however Google holds a relatively narrow 42.3% to 24.7% over baidu, the largest search engine in china.
- » This is the only regional market in which Google has less than 60% market share.
- » China : Baidu News reported in Q2 of 2013 that Baidu had more than 80% market share in China in Q1 of 2013.

China Search Engine Market Share by Visits Q3 2012 - Q1 2013



- » Russia : Yandex has 60% of all searches in Russia in March 2013
- » South Korea : Naver (<http://www.naver.com>) was estimated about 70%
- » Czech republic : (<http://seznam.cz>) as having more than 45% market share in Czech Republic

► Optimizing for Specific Countries :

One of the problems international businesses continuously need to address with search engines is identifying themselves as "local" in the eyes of the search engines. In other words, if a search engine user is located in France and wants to see where the wine shops are in Lyons, how does the search engine know which results to show?

Owning the country that are targeting engines:

- » Google
 - » Yahoo!
 - » Bing :
- Having ot the site data on Tools.

1. What are
2. How the
3. Explain
4. Explai
5. Write
6. What
7. Wha
8. Exp
9. Ana

Di

10. E

11. F

12. I

13. I

14.

Owning the proper domain extension (e.g., .com.au, .co.uk, .fr, .de, .nl) for the country that your business is targeting. Hosting your website in the country you are targeting (with a country-specific IP address). Registering with local search engines:

- » **Google** : <http://www.google.com/local/add/>
- » **Yahoo!** : <http://listings.local.yahoo.com/csubmit/index.php>
- » **Bing** : <https://ssl.bing.com/listings/BusinessSearch.asp>

Having other sites from the same country link to you. Using the native language on the site (an absolute requirement for usability) Placing your relevant local address data on every page of the site. Defining your preferred region in Google Webmaster Tools.