

MarketLine Case Study

Google Inc.

The world's leading Internet
search engine

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MarketLine

OVERVIEW

Catalyst

Google Inc. was founded in 1998 by Larry Page and Sergey Brin. By 2000 it had become the world's largest search engine. This case study will examine the rise of the Google search engine, how it differs from its competitors, and possible threats it may face going forward.

Summary

- Internet search engines have not been in existence for very long. As the Internet grew in the early 1990s, search engines began to emerge in an attempt to index Internet web pages. The early search engines were essentially a database of filenames.
- Yahoo! was created in 1994, becoming incorporated in March 1995. Yahoo! was different from other search engines in that it provided a description of the page along with the URL. Furthermore, search results were ordered in a hierarchy. Yahoo! became popular very quickly, attracting a number of investors.
- In 1996, Larry Page and Sergey Brin started work on a search program called BackRub. As the BackRub search engine became increasingly popular, Page and Brin renamed it Google. Google filed for incorporation in California, becoming Google Inc. in September 1998.
- Google rapidly rose to prominence, quickly overtaking Yahoo! as the leading search engine.
- Google uses a process called PageRank to keep track of the relevancy of a page. This innovation led to Google achieving better results for search queries than any other search engine.
- Google's obvious lead in terms of accuracy of search results, and the difficulty that its rivals faced in trying to compete, led to some of the most popular search engines switching from their own engines to that of Google.
- While Google rose quickly to become a leading search engine, it needed a way to make money. This has largely been done through advertising.
- Google now faces a fight to maintain market share against its closest competitors, Yahoo! and Microsoft.

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ANALYSIS

Internet search engines grew rapidly

Internet search engines have not been in existence for very long. As the Internet grew in the early 1990s, search engines began to emerge in an attempt to index Internet web pages. Many of these started out as academic research projects, with some becoming hugely successful.

Early search engines were essentially a database of filenames

Archie, the first method of searching the web, was created in 1990 by students at a Montreal university. Archie was essentially a database of web filenames which could be matched with user queries. This was followed by the Gopher in 1991, which led to two new search engines, namely Veronica and Jughead. Similar to Archie, these search programs found filenames stored within the Gopher index. Other early search engines included the World Wide Web Wanderer and the World Wide Web Worm, which also used simple techniques and indexed page titles, headers, and addresses.

WebCrawler was the first Internet search engine to index entire web pages

WebCrawler was developed in 1994 at the University of Washington, later being bought by America Online. Unlike earlier search engines, the WebCrawler enabled users to search for any word contained in a webpage. This set the standard for all major search programs that followed. Lycos was also introduced in 1994, and became a large commercial enterprise. This was followed by numerous search engines including Excite, Infoseek, Inktomi, and Northern Light.

AltaVista was the first efficient search engine

AltaVista was the product of researchers at Digital Equipment Corporation's Network Systems Laboratory and Western Research Laboratory, and was launched in 1995. The search engine was innovative in that it used a rapid crawler that could cover a much larger proportion of the web than had previously been seen. Furthermore, the search was fast, providing results almost instantly. The AltaVista site was a huge success, with 300,000 hits on its first day in operation, increasing to over 80 million hits each day two years later.

In 1996, AltaVista became the sole supplier of search results for Yahoo!

Yahoo! became the most popular search engine

Yahoo! was created in 1994 by Jerry Yang and David Filo, becoming incorporated in March 1995. Yahoo! was different from other search engines in that it provided a description of the page along with the URL. Furthermore, search results were ordered in a hierarchy. Yahoo! became popular very quickly, attracting a number of investors.

The foundations for the Google search engine began in 1996

In 1996, Larry Page and Sergey Brin, students at Stanford University, started work on a search program called BackRub. This search engine was made available to Stanford University students in August 1996. By the end of the year, BackRub was receiving around 10,000 searches each day.

Google became incorporated in 1998

As the BackRub search engine became increasingly popular with Stanford students and with the wider general public, Page and Brin renamed it Google. In August 1998, following a presentation to Andy Bechtolsheim, co-founder of Sun Microsystems, Google received a \$100,000 investment for "Google Inc.," a company that did not actually exist. Consequently, Google filed for incorporation in California, becoming Google Inc. in September 1998.

Google quickly rose to prominence

Google Inc. was quick to receive recognition as a search engine that generates relevant results. PC Magazine named Google as one of its Top 100 Web Sites for 1998. In 2000, Google announced the first billion-URL index, effectively making Google the largest search engine in the world. The search engine and the term "Google" became so renowned that the American Dialect Society named it as the most useful word of 2002. Furthermore, in 2006, the Oxford English Dictionary added "Google" as a verb.

In 2004, the company went public raising \$1.6 billion.

Other search engines have struggled to compete with Google

Google's results were recognized as being highly accurate from early on, with the search engine gaining popularity very quickly. Google has continued to improve, as the index is built upon and PageRank is continuously recalculated. As such, Google's competitors have struggled to match the search engine's accuracy and have fallen behind in popularity.

Google differs from its competitors

Prior to the introduction of Google, search engines worked by using a database of keywords and relying on this to generate relevant results. When a search term was entered into a search engine such as Lycos or AltaVista, the term was compared to the search engine's database of terms. Results were returned based on pages that contained text most closely matched to the search term, with the closest matches being classed as most relevant and featuring higher in the list of results. This process did not always provide logical results.

Google uses a process called PageRank

Page and Brin created software to keep track of the relevancy of a page. Relevancy is calculated based on the links embedded within a page's HTML and by external links to the page. These links are analyzed by a piece of software called a spider, which crawls the web searching for data. The spider creates a list of links directed towards a particular page. Numerical values are then assigned to a page based on the amount of times a particular page is linked to and the number of links it has within it. This system was named PageRank, and has the ability to create an accurate approximation of a page's relevancy. This innovation led to Google achieving better results for search queries than any other search engine.

Other companies began to use Google for their search technology

Google's obvious lead in terms of accuracy of search results, and the difficulty that its rivals faced in trying to compete, led to some of the most popular search engines switching from their own engines to that of Google. The first major search engine to do this was Yahoo!, which switched to the Google technology in June 2000. Yahoo! was struggling to maintain a lead over Google, and Google's search results were far more accurate. As such, Yahoo! decided to enter into a partnership with Google to prevent customers from moving to the Google search engine. Consequently, only two years after it became incorporated, Google appeared to have conquered the market.

Other partnerships have included a tie-up with AOL in 2002, while in 2007 Google announced a partnership with China Mobile to deliver mobile and Internet search services.

Google's prominent position is reflected in its market share

Google quickly gained market share in the search engine sector, becoming the global leader. The company has maintained this top position, gaining market share year-on-year.

Figure 1: Global search engine approximate market share, August 2002 (based on number of searches)

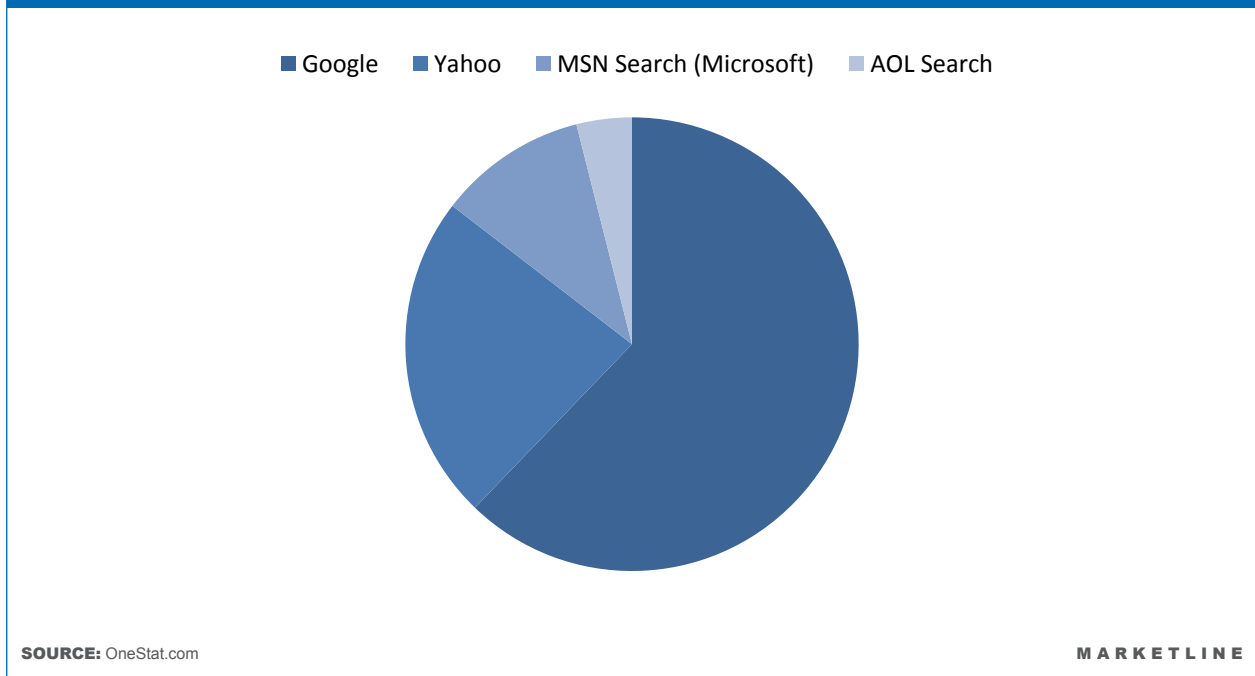
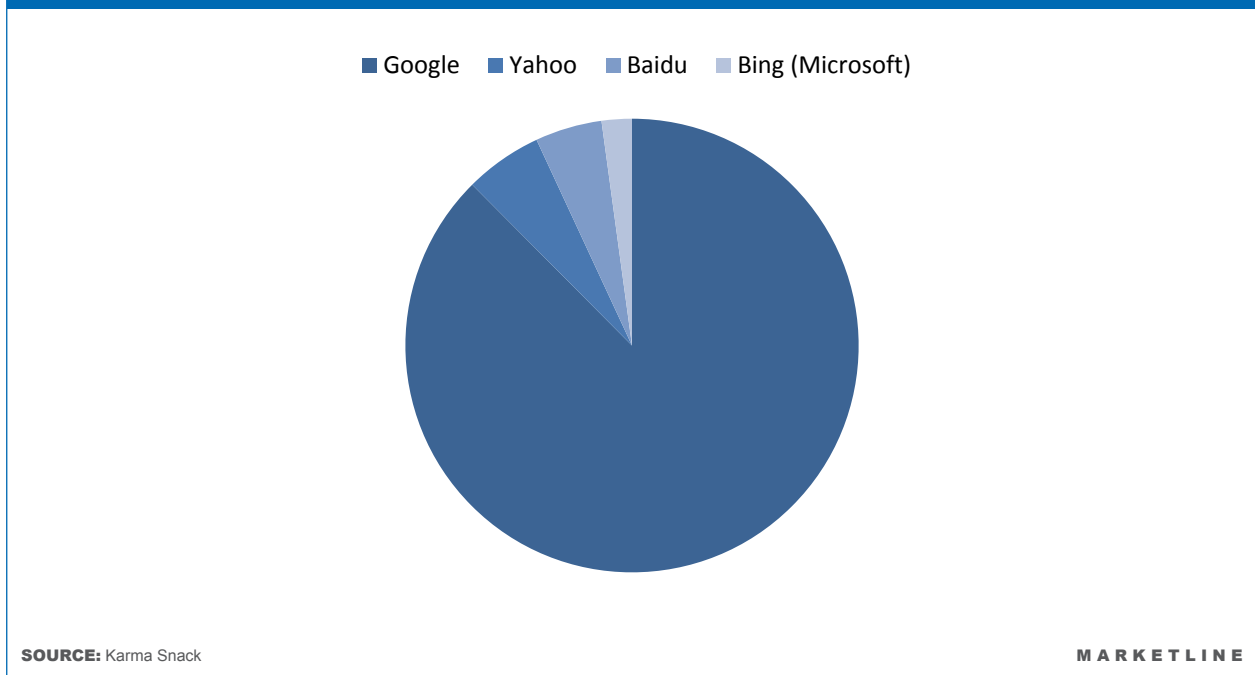


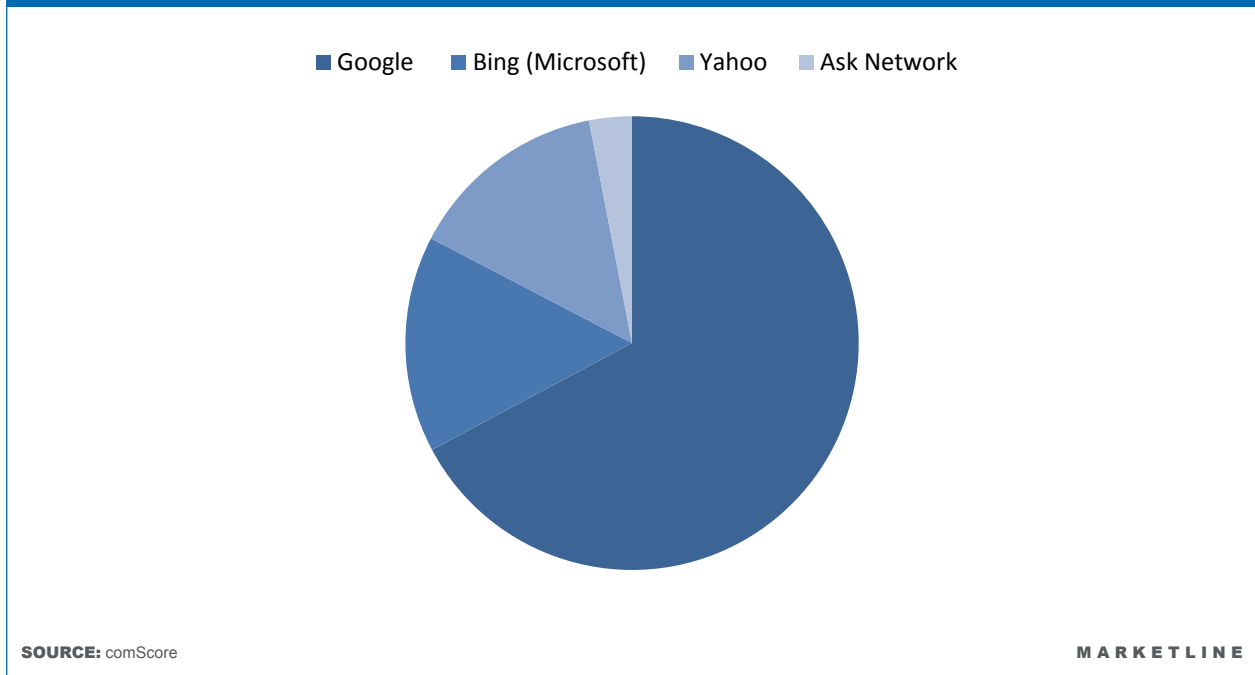
Figure 2: Global search engine approximate market share, February 2012 (based on number of searches)



Google's market share is largest in Europe

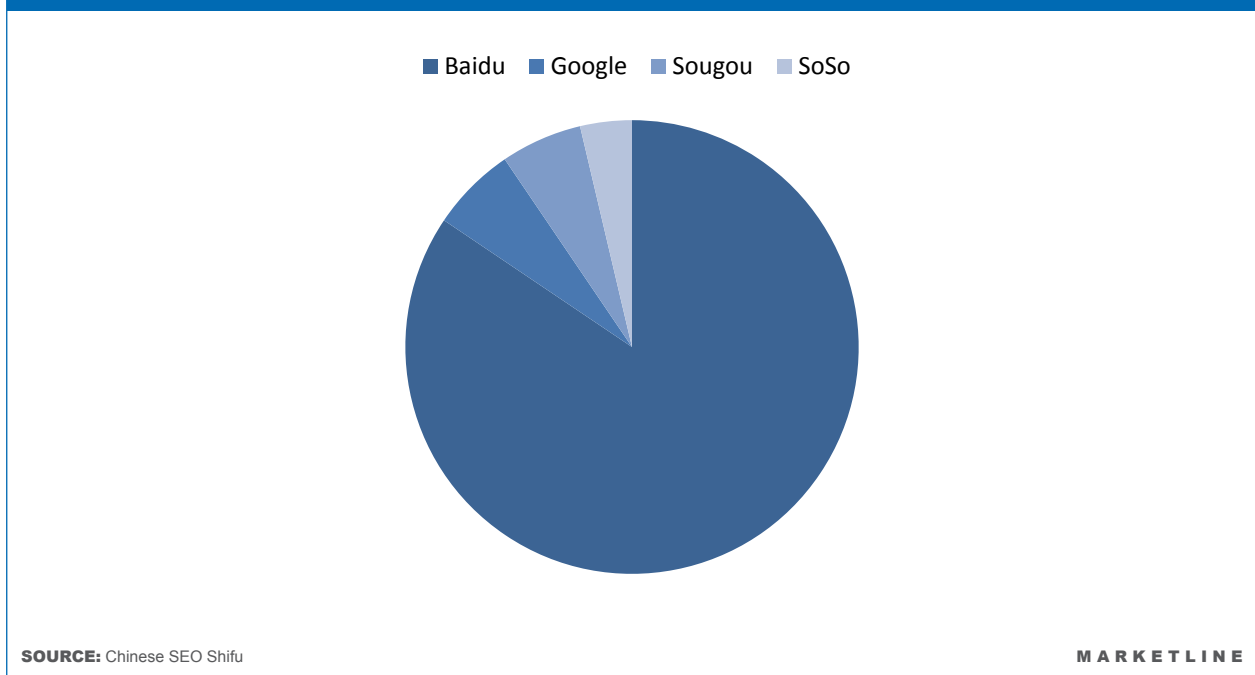
The company's lead in Europe is much more significant than in the US, where companies such as Microsoft and Yahoo! have a fairly significant market share. However, Google is still the dominant search engine.

Figure 3: US search engine approximate market share, January 2012 (based on number of searches)



The search engine faces more threat from its rivals in the US. Moreover, in countries that do not use the Roman alphabet, local search engines tend to be more prominent. For example, Baidu is the dominant search engine in China.

Figure 4: China search engine approximate market share, November 2011 (based on number of searches)



Google's revenues come largely from advertising

While Google rose quickly to become a leading search engine, it needed a way to make money. This has largely been done through advertising.

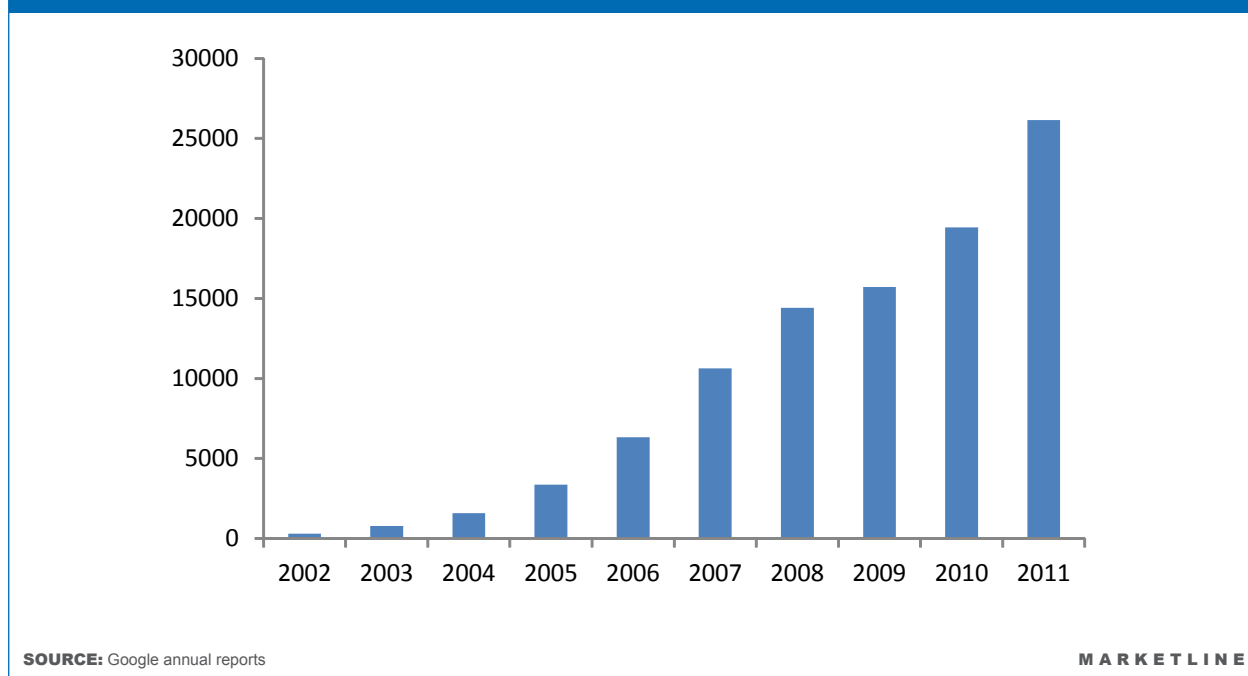
Google introduced AdWords

Initially, the company sold banner advertisements. However, Google's revenue really took off in 2000 with the launch of AdWords. AdWords displays advertisements alongside search results, which enables advertisers to purchase keywords using a bidding process. However, the highest bidder's advert is not automatically placed at the top of the list. Instead, advertisements are ranked according to their popularity.

Google's advertising revenue has grown considerably

Google's revenues have grown considerably since the introduction of AdWords. Revenue from advertising continues to make up a large proportion of total revenues, with 96% of revenues coming from advertising in 2011.

Figure 5: Advertising revenues from Google web sites (US\$ Million), 2002-11 (year-end December)



CONCLUSIONS

Can Google maintain its lead in the market?

Early search engines were very simple programs that only indexed web page titles, headers, and addresses, as opposed to entire web pages. The first competent search engine was AltaVista, introduced in 1995. AltaVista possessed two out of the three qualities that contributed to the later success of Google. Firstly, it indexed a greater proportion of the web than any of the search engines that preceded it, and secondly it delivered search results very quickly. While AltaVista's speed and reach represented a significant change in the market, the introduction of Google, and in particular its PageRank, set a new precedent entirely. This precedent has been extremely difficult for competitors to replicate.

Google now faces a fight to maintain market share against its closest competitors, Yahoo! and Microsoft. Yahoo!'s strategy involves connecting all of its online services, such as its search engine, maps, and so on. Meanwhile, Microsoft is attempting to integrate its Internet searching and desktop so that its search engine will be embedded in all of its software, in the hope that there will no longer be a need for Google.

However, despite the best efforts of its competitors, Google holds the majority of the global search engine market, and this does not look set to change. The company has increasingly diversified and improved its search facility in an attempt to remain ahead of its competitors. This has included the introduction of the Google toolbar allowing the Google search software to be installed on a PC, meaning that users do not even need to visit the Google homepage to carry out a search. A recent innovation has been the introduction of Google Instant in 2010. Google Instant displays results as the user types. Furthermore, Google carries out around 100 quality upgrades to the Google search engine in each quarter. These upgrades remain largely unseen by users, but help to maintain Google's position as the world's leading search engine.

APPENDIX

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Further reading

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MarketLine (2011) Industry Profiles: Global Internet Software and Services

Ask the analyst

We hope that the data and analysis in this brief will help you make informed and imaginative business decisions. If you have any questions or further requirements, MarketLine's research team may be able to help you. The MarketLine Research team can be contacted at ReachUs@MarketLine.com.

About MarketLine

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