

Yahoo!

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Yahoo, the world's largest and most profitable Internet portal began as the hobby of David Filo and Jerry Yang. The name Yahoo is thought by many to stand for "Yet Another Hierarchical Officious Oracle." However, Filo and Yang insist they selected the name because it best described their lifestyles. In the following pages, this paper provided a brief chronology of the events that transformed Yahoo from a simple directory list into the world's largest and most successful Internet portal. This was followed by a discussion of topics that included branding, management team and partners, company culture, competition, infrastructure, and revenue strategies. In conclusion, the paper summarized with a discussion of what could be learned from Yahoo's online presence.

Yahoo!

Yahoo, the world's largest and most profitable Internet portal, began as the hobby of David Filo and Jerry Yang, its founders (Littman 1998). The name Yahoo is thought by many to stand for "Yet Another Hierarchical Official Oracle." However, Filo and Yang insist they selected the name because it best described their lifestyles (Yahoo, 1997). When Yahoo was created in 1994, it was simply a way for Filo and Yang to keep track of their personal interests on the Internet (Kalakota & Whinston, 1997).

As engineering graduate students at Stanford University, both preferred surfing the Internet to working on their doctoral dissertations. When their Ph.D. advisor took a sabbatical in Italy in the spring of 1994, they further increased their exploration of the Internet and its potential. Filo and Yang began by categorizing Internet sites as a way to conveniently track all the sites they had visited. They published this list on the Internet as "Jerry and David's Guide to the World Wide Web." The directory soon became known as the best place to start surfing the Internet.

In the following pages, this paper provides a brief chronology of the events that transformed Yahoo from a simple directory list into the world's largest and most successful Internet portal. This is followed by a discussion of topics that include branding, management team and partners, company culture, competition, infrastructure, and revenue strategies. In conclusion, the paper summarizes with a discussion of what can be learned from Yahoo's online presence.

Chronology

Yahoo, headquartered in Santa Clara, California, has offices in Australia, New Zealand, Canada, Denmark, Sweden, France, Germany, Korea, the U.K., Honk Kong, and Japan. The company is international and currently operates in nine languages and fourteen different countries (Pollak, 1998). In fact, Yahoo is the most popular Internet site in Japan where 10 million people are online. More than 30 percent of Yahoo's traffic originates outside of North America. As the first online guide to the Internet, Yahoo is also the largest portal in terms of advertising, traffic, user reach, and brand recognition.

Yahoo began as an idea of David Filo and Jerry Yang. Filo, 33, is a native of Moss Bluff, Louisiana. He received a B.S. in Computer Engineering from Tulane University and a M.S. in Electrical Engineering from Stanford University. He sleeps every third night. Yang, 30, is a Taiwanese native raised in San Jose, California. He holds B. S. and M.S. degrees in Electrical Engineering from Stanford and likes to play golf in his spare time in spite of his lack of ability. Both are currently on a leave of absence from Stanford University's Electrical Engineering Ph.D. program since April 1995 when they co-founded Yahoo.

During 1994, Filo and Yang converted "Jerry and David's Guide to the World Wide Web" into a customized database. The database (later renamed Yahoo) was capable of

serving the needs of the thousands of closely-knit Internet users that began to use the service. In early 1995, Marc Andreessen, co-founder of Netscape, invited Filo and Yang to host their database on the larger computers located at Netscape. Yahoo was off and running. The following is a brief chronology of the major events in Yahoo's history (Yahoo, 1999).

- January 7, 1996 - Yahoo Chat went online.
- April 11, 1996 - Yahoo made an initial public offering of 2,600,000 shares at \$13 per share.
- April 24, 1996 - Yahoo was first to offer interactive maps.
- April 25, 1996 - Black Rocket began a Yahoo brand-building campaign using television advertising.
- June 5, 1996 - AltaVista was integrated as Yahoo's search engine.
- July 15, 1996 - "My Yahoo" personal Internet pages began focusing on the needs of each user.
- October 1, 1996 - Site traffic reached one billion page views in a three-month period.
- October 2, 1996 - Internet-based driving direction services became available. Yahoo was the only portal to offer comprehensive nationwide service.
- March 31, 1997 - Yahoo was ranked the number one finance source on the Internet.
- May 7, 1997 - Site traffic reached one billion page views in a one-month period.
- June 9, 1997 - Yahoo began offering online stock trading.
- September 22, 1997 - Yahoo expanded its shopping services with convenient access to online merchants with the Visa Shopping Guide.
- October 23, 1997 - Yahoo's acquisition of Four11 allowed it to offer Internet-based e-mail services.
- November 10, 1997 - Yahoo's audience of 25 million exceeded those of leading broadcast and print media.
- November 11, 1997 - The Sabre Group and Yahoo collaborated to provide the Travelocity travel-booking engine on Yahoo.

- November 17, 1997 - CareerMosaic and Yahoo launched an employment site on Yahoo.
- December 2, 1997 - Yahoo teamed up with Autoweb.com and CarPoint to begin an online car-buying merchant program.
- January 7, 1998 - AudioNet and Yahoo provided in-depth Internet broadcasts.
- January 19, 1998 - Yahoo began offering photo album services to users.
- March 31, 1998 - Real-time, multi-player games became available on Yahoo.
- April 7, 1998 - Yahoo launched the world's most comprehensive Internet insurance marketplace.
- April 8, 1998 - Yahoo set the new record of 95 million page views per day.
- May 18, 1998 - Inktomi displaced AltaVista as Yahoo's search engine.
- June 30, 1998 - Yahoo begins offering a complete real estate resource for buying, selling, and renting property.
- August 17, 1998 - A new calendar site allowed Yahoo users to view, edit, and manage their personal calendars from an Internet-connected computer.
- December 2, 1998 - Yahoo announced plans to deliver Internet content to the 3Com Palm VII organizer.
- January 29, 1999 - Yahoo announced plans to acquire GeoCities for \$4.6 billion.
- February 1, 1999 - Yahoo and SecureTax.com collaborate to offer Yahoo users the ability to prepare and file their taxes online.
- February 10, 1999 - Yahoo introduced services to assist small online businesses.
- April 1, 1999 - Yahoo announced plans to acquire Broadcast.com

Branding

Yahoo was the first Internet company to turn its name into a brand (Littman, 1998). In fact, much of Yahoo's success can be attributed to its ability to spread and protect the Yahoo brand. Early on, David Filo and Jerry Yang hired Karen Edwards, former director of marketing for Twentieth Century-Fox's home entertainment, as "brand marketer." Shying away from the larger high-tech ad agencies, Edwards hired Black Rocket of San Francisco.

Black Rocket (known for the "Got Milk?" campaign) engineered Yahoo's famous "Gone Fishing" television ad. In the ad, a wise old angler dips into Yahoo for some fishing tips and then lands one huge fish after another. The ad succeeded in capturing the Internet's spirit without being "techie." From the beginning, Black Rocket understood that if Yahoo was to outgrow its roots as an Internet search company it would have to evolve into a new-media company with mass appeal.

By June 1996, the Yahoo name had become a brand. Although the weeks of TV ads had depleted most of the advertising funds, Yahoo had momentum. Edwards followed the TV ads with posters on construction sites, tie-ins with major concerts, and even its logo on Ben and Jerry's ice cream lids. Yahoo's logo was everywhere. Unlike competitors, Yahoo did not choose to co-brand itself to add content. Co-branding would have required the company to share in the profits. "Yahoo hasn't done that; that's why Yahoo has an 87 percent gross margin, and Excite has a 75 percent margin. If you can stay within your brand and you make it, you get to keep everything," commented Harry Blodget, a senior analyst with New York-based CIBC Oppenheimer Corporation (Littman, 1998).

Management Team and Partners

In spite of the success derived by Yahoo's name and branding strategy, Jerry Yang does not consider it the most important factor in the company's success. "The more I look back," he said, "the more I realize how fortunate we were to find the right partners, the right management. It seemed natural and intuitive then. Now I realize what key parts of our business they are" (Littman, 1998). Karen Edwards and her role in establishing the Yahoo brand is a prime example of having the right management.

In addition to Karen Edwards, Yahoo was fortunate to find the right partners and management team for other areas of the business. Like Jerry Yang and David Filo, many of the Yahoo's executives attended Stanford. For example, Tim Koogle (now CEO), and Tim Brady (now VP of production), were Stanford graduates. To quote Jerry Yang, "Stanford had a huge part in shaping us. We saw Jim Clark (cofounder and chairman of Netscape) coming to the school. Bill Gates came and built his building next to our trailer. The venture capital is there. If you are interested in starting a business, you'll find other people talking about launching companies" (Littman, 1998).

Stanford was also instrumental in luring Yahoo's initial investors. Jerry Yang and David Filo benefited greatly by the Stanford brand of their Ph.D. candidate status. Venture capitalists valued the "peoplebranding" that Stanford attendance provided. When Yahoo's founders made their choice from the many interested investors, Sequoia Capital's Michael Moritz (currently a Yahoo director) was the winner. The media veteran understood Yahoo's potential as a network player in a new mass-market medium. Unlike other interested investors, Moritz believed the advertising model would work on the Internet.

However, Yahoo's biggest and most silent partner was Japan's Softbank Corporation. Softbank invested more than \$65 million from late 1995 through the first quarter of 1996.

This amounted to 31 percent of the company's common stock. Softbank's global presence and Yahoo's international plans proved to be a perfect match.

Company Culture

The work environment at Yahoo is both casual and highly creative. The average employee is 29 years old and enjoys going to work (Littman, 1998). In fact, the company slogan is "Do what's crazy, but not stupid!" Yahoo's management understands the value of creating a fun atmosphere at work. This approach has carried over to the company's branding campaigns. Yahoo's cool California image and bright logo are seen everywhere from parachutes, skateboards, sailboats, and professional hockey rinks, to the office walls and conference rooms at Yahoo headquarters in Santa Clara, California.

Company executives are aware that employees work long hours, and it attempts to create an environment that caters to their needs. Yahoo's internal culture is one of the most important aspects of being an employee. For example, video games scattered around the office allow for fun during work breaks. In addition, the catered lunch program gives employees a chance to gather and talk while eating tacos or hamburgers. Yahoo management strives to keep in touch with the type of people it employs and attempts to create a culture where they feel at home. Evidence of this is the fact that some employees stay around the office after work because it is more fun than being at home.

If the atmosphere is not enough to motivate employees, Yahoo turns employees into owners of the company. Qualified full-time employees working in the United States are eligible for an incentive-based stock option plan (Pollak, 1998). The rewards are based upon reaching targeted goals and obtaining advertising contracts. The increasing value of Yahoo stock has made this incentive very effective.

Another plan allows employees to deduct 15 percent of their earnings to purchase company stock. In addition, the stock price is discounted to 85 percent of the current market value to promote participation. Yahoo also supports a 401(k) profit sharing plan that matches employee contributions at a 25 percent rate. Employee contributions to the plan vest immediately and company contributions vest at a rate of 33.3 percent a year.

Competition

Revenues in the portal industry are expected to grow to \$2.4 billion by 2002 (Charron, 1998). Yahoo's competitors include AOL, Microsoft Start, Excite, Lycos, Infoseek, AltaVista, Snap, and Netscape. In January 1999, Yahoo overtook AOL as the top Internet site with 29.2 million unique viewers (Leone, 1999). AOL, with 28.89 million visitors, was followed by MSN with 20.19 million. Industry analysts predict the marketplace will support only five portals (not the current nine). Although Yahoo, AOL, and Microsoft are sure bets to remain in the competition, the others are looking for media partnerships to ensure their long-term viability.

In addition to being the top Internet site, IDC Research recently found that Yahoo had the largest loyal user base. Yahoo users spend more time at the site each month than the loyal users of other sites do (IDC Research, 1999). Loyal users were defined as those who visit a site at least four times per month. According to IDC, 36 percent of Yahoo users are loyal and spend an average of 161 minutes at the site per month. Netscape's Netcenter came in second with 34 percent of its users classified as loyal.

To maintain its edge in the future, industry analysts are recommending that Yahoo create content for next generation devices such as Internet telephones, set-top devices, and handhelds (Charron, 1998). Yahoo must also spread its brand to other media.

Infrastructure

The hardware and software infrastructure operating behind the scenes at Yahoo is quite impressive. Enterprise servers from Sun Microsystems coupled with Network Appliance file servers are a significant piece of Yahoo's hardware infrastructure. On the software side, the major players are FreeBSD (operating system), Oracle (database), Inktomi (search engine), and Tibco (real-time distribution technology). The following section describes how the products of these companies are used behind the scenes at Yahoo.

Sun Microsystems

Sun Microsystems is a major manufacturer of UNIX-based workstations and servers. Sun has been a major force in open systems. Its computers have always run under UNIX, which was licensed from AT&T and then later purchased outright. Sun is currently the leading provider of network computing systems including workstations, servers, and thin clients (Freedman, 1999). Yahoo employs Sun computers throughout its operations.

One example of Yahoo's use of Sun computers is the Visa Shopping Guide offered on the portal (Network Appliance, 1999). The Visa "Personal Shopper" returns a list with all the pertinent information needed to make a buying decision (i.e. name of the merchant offering the product, the brand type, price, product features, shipping information, and a link to the merchant). Transactions for the heavily loaded shopping service are handled by an Oracle database running on two Sun Enterprise servers (a Sun Enterprise Server 3000 with four CPUs and a Sun Enterprise Server 450 with four CPUs). The application also requires three Sun Ultra IIs. "On peak days, we are answering 300,000 database queries and the numbers are continuing to rise at a rapid rate," said Werner Daghofer, manager of operations. The comparison shopping database currently consists of six gigabytes of information.

Network Appliance

Network Appliance is a computer manufacturer that specializes in file server appliances or filers. Yahoo employs these appliances to deliver fast and reliable data access through their built in Internet caching technology. In the Visa Shopping Guide described above, Yahoo employs Network Appliance filers to improve the performance of the Oracle

database. The devices also provide improved system uptime and maintenance cost-savings over standard database hardware (Network Appliance, 1999).

Oracle

Oracle, founded in 1977 by Larry Ellison, is the world's largest database and application development software vendor (Freedman, 1999). The Oracle database was the first database management system (DBMS) to incorporate the SQL language and to be ported to a variety of platforms. Yahoo uses Oracle databases throughout its operations. The Visa Shopping Guide described above is just one example. Oracle could be described as the heart of Yahoo.

FreeBSD

Free BSD is an example of Yahoo's use of public domain software in its infrastructure (Yahoo, 1998). FreeBSD is an advanced BSD UNIX (Berkeley Software Distribution UNIX) operating system for PC-compatible computers. BSD is a version of UNIX developed by the Computer Systems Research Group of the University of California at Berkeley from 1979 to 1993. BSD enhancements, known as the "Berkeley Extensions," include networking, virtual memory, task switching, and large file names. FreeBSD is distributed free, with a charge only for the media. FreeBSD provides Yahoo with robust network services that maintain good response times with thousands of simultaneous user processes.

Inktomi

Inktomi has the reputation of building a search engine that locates more information with a higher degree of relevance in a shorter period of time (Inktomi, 1999). This ability was a significant factor in Yahoo's decision in May 1998 to switch from AltaVista to Inktomi as its search engine. While AltaVista's search technology is powerful, it only runs on big symmetric multiprocessing (SMP) UNIX computers. On the other hand, Inktomi is able to run on networked UNIX workstations (Maclachlan, 1999). Consequently, Inktomi's technology is more scalable and offers better price performance. The Inktomi engine also powers other leading search sites. These include HotBot, NBC's Snap, GoTo, and @Home.

Tibco

Tibco (The Information Bus Company) invented the patented Enterprise Publish-Subscribe computing paradigm (Yahoo, 1998). This enables Yahoo to publish information to users in real-time. For example, Yahoo uses Tibco's software technology to provide stock quote data. Tibco also provides content aggregation from news and data feeds (i.e. Reuters and Comstock). In addition, Tibco technology normalizes and integrates this information for real-time distribution in Yahoo's pages.

Revenue Strategies

Yahoo's 1998 earnings, totaling \$203.3 million (up from \$70.5 million in 1997), were derived from its strategy of selling banner advertisements on short-term contracts (Pollak, 1999). In 1997, Yahoo began selling a combination of banner advertising and sponsorship contracts. Sponsorships have longer terms than banner ad contracts. Their duration is anywhere from three months to two years. In addition to revenue derived from banner advertising, close to 25 percent of Yahoo's revenue resulted from Internet commerce. In the future, Yahoo is planning aggressive changes that will move the company in several new directions.

At a March 1999 press conference, Yahoo outlined plans that included new revenue streams, acquisitions, a broadband deal, and expansion on the international front (Lipton, 1999). Interested in the revenue potential of the \$162 billion traditional direct marketing industry, the company is developing a new direct marketing service. Yahoo is also considering opportunities that would increase revenue with subscription fees and paid premium services. Fees for premium services would include high-end stock and financial information, auction listings, and technical services for power users.

In a recent interview, Yahoo president Jeff Mallet said the company was looking into charging fees. "If we can do a free service, that is our goal. We'll do everything within our powers to create a free service when people come to Yahoo," Mallet said. "The good thing is we get this critical mass and it gives us greater leverage. It allows us to carry stuff that may have been paid before and not even available before. That is our goal" (Lipton, 1999).

Acquisitions are another important component of Yahoo's plans. The recent purchase of personal-page publisher GeoCities may be the first in a series of acquisitions that make up a multi-brand strategy. The GeoCities purchase provides Yahoo with greater e-commerce potential since a large number of the GeoCities' personal home pages have a business component to them. Yahoo will also integrate GeoCities' user-generated content and personal publishing tools into important areas of Yahoo (Charron, 1999). In addition, the company expects the integration of GeoCities to facilitate e-commerce by generating leads to Yahoo's partnered stores.

Motivated by other portals, Yahoo's plans also include high-speed Internet access. A portal competitor, AOL, recently formed a strategic alliance for similar service with Bell Atlantic. The AOL/Bell Atlantic service will include high-speed digital subscriber line (DSL) connections (Woods, 1999). In response, Yahoo intends to consummate a broadband deal during the last half of 1999. The company will most likely collaborate with @Home cable.

On the international front, Yahoo has an aggressive strategy to attract overseas users. Its plans include localized versions in 18 countries featuring local site directories and local language content. Local staffs will update all content. Yahoo's goal is to attract more than half the surfers in the countries it targets. This will position the company to capitalize on the need for Internet advertising and e-commerce in those emerging markets.

Conclusion

In less than five years, Yahoo grew from the hobby of two Ph.D. students to the world's largest and most profitable Internet portal. A number of lessons can be learned from Yahoo's online presence. One lesson is that it is often better to give than to receive. Yahoo was the first portal to offer its search services free. Consequently, more people visit Yahoo's site than any other location on the Internet. Yahoo's eight million visitors per week is larger than Time magazine's paid weekly circulation (Littman, 1998).

Another lesson that Yahoo's success teaches is that branding is very important. In addition, it pays to have a brandable (i.e. cool) name. The competition (e.g. Excite and Microsoft) learned these facts the hard way. In conclusion, the most important lesson to be learned from Yahoo's success is that finding and keeping the right employees, management, and partners has no substitute.

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