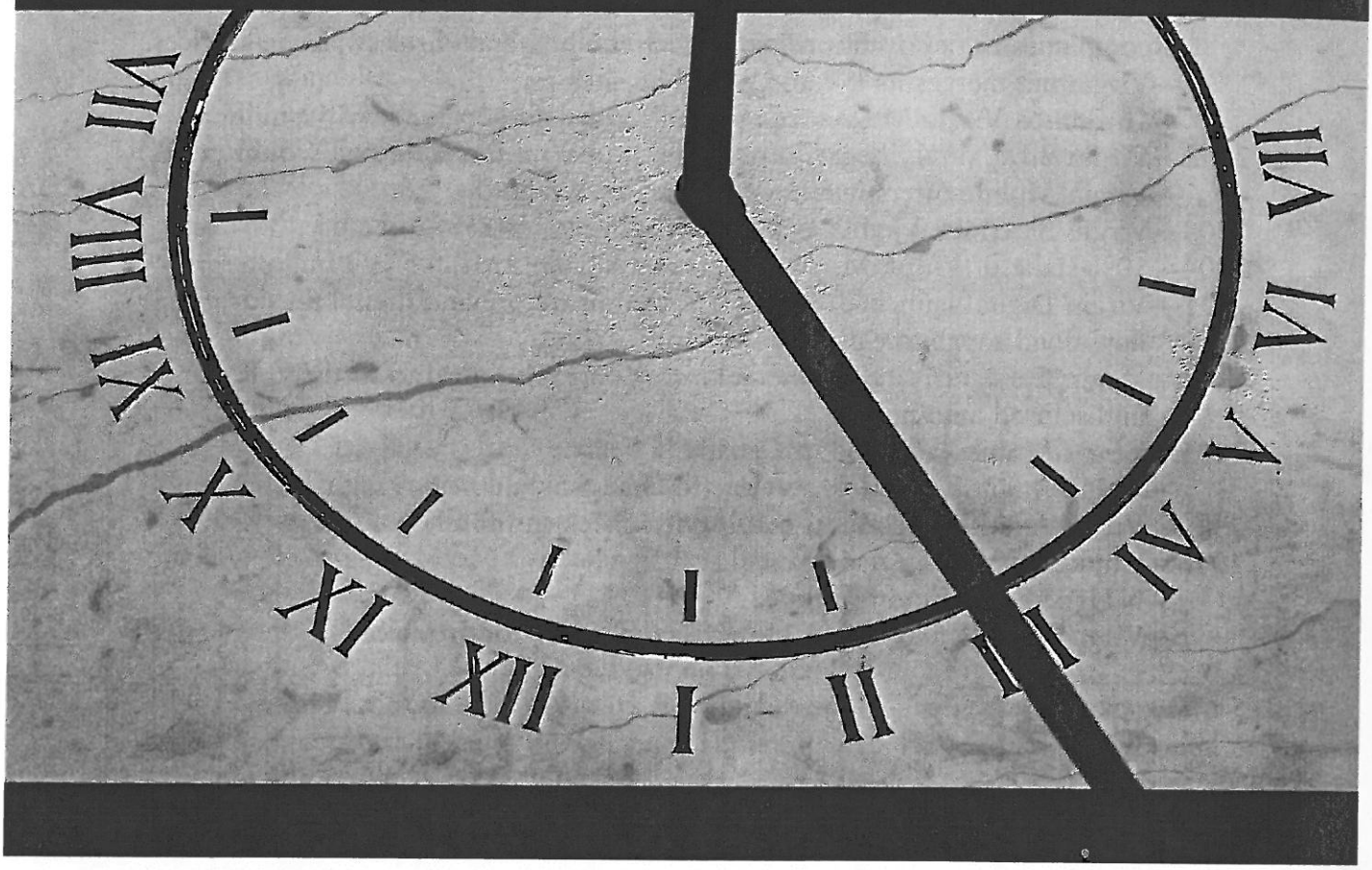
Case 21 Google Inc.: Running Amuck?



July 2009

Google's announcement on July 7, 2009 that it would be adding a computer operating system to its Chrome internet browser set off shock waves through the IT community. The much-heralded battle between Google and Microsoft for dominance of cyberspace had taken a major step closer. This emerging "Battle of the Titans" was a gift for news editors. Stock analysts were less impressed; they were awaiting the announcement of Google's second quarter financial results on July 15. Their key concern was that Google's many ambitious new initiatives were adding cost and distracting management at a time when advertising revenues were being squeezed by the economic downturn. Chris O'Brien of the San Jose Mercury

summed up the feelings of many in a blog entitled "Google's growing identity crisis":

> There are a handful of reasons people generally cite for Google's success. The power of its search engine algorithm. The elegance of a business model that matches text ads to searches. A restless, innovative culture continually striving to improve and evolve its products.
>
> Here's what always struck me about Google: its simplicity. At the start, Google did one thing phenomenally well. Its search engine was so superior that the company's name became synonymous with search itself. And its home page was, and remains, a visual model of simplicity: a sea of white space, the Google logo, a search box, a couple of links—and no ads.
>
> The homepage aside, though, Google increasingly feels like a company running in a thousand directions at once. Over the past year, it has released a steady stream of high-profile products that seem to have little or no relation to the core identity expressed on its corporate homepage: "Google's mission is to organize the world's information and make it universally accessible and useful." The problem is that in expanding into so many different areas—productivity applications, mobile operating system, a Web browser—that the identity of Google itself has become muddled. No doubt, this all follows some clear logic from inside the Googleplex. But from the outside, it's getting harder every day to articulate what Google is. Is it a Web company? A software company? Something else entirely?[1]

For Sergey Brin, one of Google's co-founders, the growing breadth of Google's empire was a source of pride:

> Every minute, 15 hours worth of video are uploaded to YouTube . . . Today we are able to search the full text of almost 10 million books. While digitizing all the world's books is an ambitious goal, digitizing the world is even more challenging. Beginning with our acquisition of Keyhole (the basis of Google Earth) in October 2004, it has been our goal to provide high-quality information for geographical needs . . . Last year, AdSense (our publisher-facing program) generated more than $5 billion dollars of revenue for our many publishing partners . . . In addition to Gmail and Google Docs, the Google Apps suite of products now includes Spreadsheets, Calendar, Sites, and more . . . Google Translate supports automatic machine translation between 1640 language pairs . . .[2]

The concern of many stock analysts was that most of Google's diversifying initiatives did nothing to boost revenue, let alone generate profit. The *Financial Times*' Lex column dubbed Google a "one-trick pony": "Google has what amounts to a license to print money. By inserting itself between the shops and shoppers of the world, the search provider takes a small commission every time it connects the two." Beyond its core search business, Google's activities only added cost:

> [J]ust look at YouTube, the video-sharing website Google bought for $1.8bn—paid mostly in stock—in 2006. The site supplies about 40 per cent of all videos watched online worldwide for free. That generosity comes at tremendous cost, as very few of its videos carry advertising. Credit Suisse estimates YouTube's running costs will be between $500m and $1bn this year, while revenues will only be in the region of $240m. Even with the addition of more professionally created content, the economics appear unsustainable.[3]

TABLE 21.1 Google Inc.: Key financial data

	2004	2005	2006	2007	2008
Income data:					
Revenues	3189	6139	10605	16594	21796
Costs and expenses:					
Cost of revenues	1469	2577	4225	6649	8622
Research and development	395	600	1229	2120	2793
Sales and marketing	296	468	850	1461	1946
General and administrative	188	387	752	1279	1803
Total costs and expenses	2549	4121	7055	11510	15164
Income from operations	640	2017	3550	5084	6632
Interest income and other, net	10	124	461	590	316
Income before income taxes	650	2142	4011	5674	5854
Net income	399	1465	3077	4204	4227
Balance sheet data:					
Cash and marketable securities	2132	8034	11243	14218	15845
Long-term liabilities	43	107	128,	610	1226
Total stockholders' equity	2929	9418	17039	22689	28238

Source: Google, 10-K Report, 2008.

With Google's revenue growth hit by the 2008 recession while its costs continued to rise rapidly, some investors believed that it was time to rein in Google's chaotic expansion and develop a more focused strategy founded upon a clear recognition that the basis of Google's business model was the advertising revenues that flowed through which its dominance of internet word searches. Table 21.1 shows financial data for Google.

Google's Founding

Google was created by Larry Page and Sergey Brin, PhD students at Stanford University. In January 1996, Page's search for a dissertation topic led him to examine the linkage structure of the World Wide Web. Page and Brin developed a page-ranking algorithm that used backlink data (references by a Web page to other Web pages) to measure the importance of any Web page. Although several rudimentary Web search engines were in existence, most selected Web pages on the basis of the frequency with which a particular search word appeared. They called their search engine "Google" and on September 15, 1997 registered the domain name google.com. They incorporated Google Inc., on September 7, 1998 in Menlo Park, California. Google's "PageRank" algorithm was granted a patent on September 4, 2001.

Google met an essential need of the rapidly growing number of people who were turning to the World Wide Web for information and commercial transactions. As the number of web sites grew exponentially, locating relevant web content became a critical need. Page and Brin were not alone in recognizing the potential for a search engine. Among the early crawler-based Web search engines were WebCrawler, Lycos, Excite, Infoseek, Inktomi, Northern Light, and AltaVista. Several of these search engines became popular "portal sites"—web sites that offered users their first

port of entry to the Web. Given that the primary purpose of a portal was to guide users to the information and commercial services offered by the web, other portal sites soon recognized the need to offer a search facility. Yahoo! licensed AltaVista's search engine, then in 1998 replaced AltaVista with Inktomi.

The Google search engine attracted a rapidly growing following because of its superior page ranking and its simple design—it did not compromise its search functionality by attempting to become a portal. In 2000, Google began selling advertisements—paid web links associated with search keywords. These "sponsored links" were brief, plain text ads with a click-on URL, which appeared alongside with Web search results for specific keywords. Advertisers bid for keywords; it was these "cost-per-click" bids weighted by an ad's click-through rate (CTR) that determined the order in which a sponsored links would appear. In offering a Web-based advertising system linking third-party advertisers to a search engine of informational web site, Google's system copied many of the features of the then market leader, Overture. After 2000, Google experienced explosive growth and was boosted in May 2002 by AOL's decision to adopt Google's search engine and its paid listings service.

Page and Brin's initial funding was a $100 000 contribution from Andy Bechtolsheim, co-founder of Sun Microsystems. In June 1999, larger funding was obtained from venture capital firms Kleiner Perkins Caufield & Byers and Sequoia Capital. On August 19, 2004 an initial public offering of about 7% of Google's shares raised $1.67 billion, giving Google a market capitalization of $23 billion.

Google's Expansion, 2004–9

The financial boost provided by Google's IPO fueled even more rapid development of its business. In its core Web search business, Google was continually seeking to improve users' search experiences while finding ways to better monetize its dominance of web search through advertising. However, the most striking feature of Google's development was its determination to grow beyond its core web search business. This expansionist urge reflected the company's *raison d'être*: it had never seen itself just as a supplier of an internet search engine, its declared mission was ". . . to organize the world's information and make it universally accessible and useful." Google's IPO prospectus had elaborated this intent:

> We serve our users by developing products that enable people to more quickly and easily find, create and organize information. We place a premium on products that matter to many people and have the potential to improve their lives, especially in areas in which our expertise enables us to excel.
>
> Search is one such area. People use search frequently and the results are often of great importance to them. For example, people search for information on medical conditions, purchase decisions, technical questions, long-lost friends and other topics about which they care a great deal. Delivering quality search results requires significant computing power, advanced software and complex processes—areas in which we have expertise and a high level of focus.[4]

Google's quest to meet the information needs of society caused it to continually seek opportunities for accessing new information and provide it through additional media channels. As Exhibit 21.1 shows, Google's quest to provide accessibility to the

EXHIBIT 21.2
Google Timeline

January 1996. Larry Page and Sergey Brin begin collaborating on a search engine called BackRub.

September 1998. Google Inc. establishes operations in a friend's garage in Menlo Park, California and hires its first employee.

June 1999. Google obtains $25 million in venture capital funding. Google moves to its new Googleplex headquarters in Mountain View, California.

September 1999. Google.com officially launched.

2000. Continued enhancements to Google including the Google Directory, the ability to search via wireless devices and the first 10 non-English language versions Google officially becomes the world's largest search engine. Google introduces AdWords, a self-service ad program that could be activated online. Introduction of the Google Toolbar allowing users to perform a Google search without visiting the Google homepage.

February 2001. Acquires the assets of Deja.com and begins organizing its huge Usenet archive into a searchable format.

August 2001. Dr Eric Schmidt, former CEO of Novell and CTO of Sun Microsystems, becomes CEO of Google.

September 2001. Google becomes profitable.

December 2001. Launch of Google Image Search and Google Catalog Search (allowed more than 1100 mail order catalogs to be searched). Year-end Google Zeitgeist summarizes search patterns, trends, and top search terms of 2001.

February 2002. Introduction of the Google Search Appliance allowing search to be extended beyond firewalls to company intranets, e-commerce sites, and university networks. Google Compute allows available processing on users' computers to help solve computation-intensive scientific problems.

May 2002. AOL selects Google to provide search and advertising to its 34 million members.

September 2002. Google News launched: access to 4500 leading news sources worldwide.

December 2002. Froogle, a product search service launched.

April 2003. Acquisition of Applied Semantics; launch of Google AdSense: generates revenue through placement of highly targeted ads adjacent to their content.

January 2004. Local Search allows geographically focused web search and personalized search on Google Labs, enabling users to specify their interests and customize their search results.

April 2004. Launch of Gmail, a web-based mail service. Gmail designed to deliver relevant ads adjacent to mail messages.

July 2004. Acquires Picasa, Inc., a digital photo management company that helps users to organize, manage and share their digital photos.

August 2004. Initial public offering of GOOG on NASDAQ through a Dutch auction process.

October 2004. Release of Google Desktop Search. Also Google SMS launched: instant, accurate answers to queries through text messaging, using a cell phone or handheld device. Acquisition of Keyhole Corp., a digital and satellite image mapping company.

November 2004. Google index of Web pages numbers 8 billion.

December 2004. Launch of Google Groups: allows users to create and manage their own email groups and discussion lists. Google Book Search begins scanning of books from many of the world's leading libraries.

January 2005. Launch of Google Mini, search tool for small and medium-sized businesses. Launch of Google Maps providing map views and satellite views.

June 2005. Google Labs offers Personalized Homepages. Launch of Google Earth.

August 2005. Launch of Google Talk: free internet telephony.

September 2005. Release of Google Blog Search.

October 2005. Launch of Google Reader combines blog, Web page and news sources onto a single screen.

November 2005, Launch of Google Base to upload content in a structured format that searchers can then find. Google Analytics replaces "Urchin" as an online advertising management tool.

January 2006. Google Video Store offers range of content using a new Google Video Player. Google domain in China announced.

February 2006. Google Chat: integrates email and instant messaging within a Web browser. Updated version of Google Desktop released. Google Page Creator facilitates simple design and creation of Web pages.

March 2006. Debut of Google Finance: financial and business information.

April 2006. Release of Google Calendar for easy accessing and sharing of personal calendars.

June 2006. AdWords launches click-to-play Video Ads. Launch too of Google Checkout to provide a faster, safer and more convenient online shopping. Google Maps available to businesses for embedding in their own web sites.

August 2006. Agreement with Fox to access their newly acquired MySpace. SketchUp acquired. Partners with EarthLink in a proposal for free WiFi for the city of San Francisco.

November 2006. Google Apps for Education expands offer of Google services to teachers and students. Google for Educators, a new outreach program offers elementary teachers Google Certification through the Google Teacher Academy,

October 2006. Acquisition of YouTube. Release Web-based applications Docs and Spreadsheets. Acquisition of Jobspot, a collaborative wiki platform, which later becomes Google Sites.

December 2006. Release of Patent Search indexing more than 7 million U.S. patents.

January 2007. Partnership with China Mobile announced.

February 2007. Acquisition of Adscape, producer of in-game advertising producer.

April 2007. Acquisition of DoubleClick. Froogle changed to Google Product Search. Acquisition of Zenter, software to create and share online presentations. Acquisition of TiSP, a home broadband service.

May 2007. First steps towards universal search—integrated search of video, news, books, images and local results.

June 2007. Acquisition of Feedburner, provides tools for sitefeed management and analysis.

September 2007. AdSense for Mobile introduced. Presently, a new application for making slide presentations, added to Google Docs.

November 2007. Android, the first open platform for mobile devices, and a collaboration with other companies in the Open Handset Alliance, announced. Google.org announces REC for supporting low cost electricity from renewable sources.

January 2008. Google bids in the 700MHz spectrum auction.

February 2008. Launch of Google Sites (based upon the acquisition JotSpot), allows creation of collaborative web sites with embedded videos, documents, and calendars.

March 2008. Completion of acquisition of DoubleClick.

May 2008. Release of Google Health—allows secure online collection, storage and management of individuals' medical records and health information.

June 2008. Google Finance offers real-time stock quotes. Launch of Google Site Search—site owners can enable Google-powered searches on their own web sites.

September 2008. Announcement of Chrome, new open source web browser. T-Mobile announces the G1, the first phone built on the Android operating system.

February 2009. Google Latitude mobile devices allows sharing your location.

March 2009. Launch of Google Ventures, a venture capital fund to support innovation and new technology.

May 2009. Launch of Sky Map for Android: allows identification of stars and planets via Android phone.

world's information had taken it into new communication media (notably wireless telephony, but also radio, TV and video games) and sources of information beyond third-party web sites.[5] These new sources of information included images (Google Image Search), maps (Google Maps), academic articles (Google Scholar), books (Google Book Search), satellite imagery (Google Earth), news (Google News), patents (Google Patent Search), video (Google Video; YouTube), finance (Google Finance), and Web logs (Google Blog Search).

However, Google's entrepreneurial and technological dynamism also resulted in initiatives that extended beyond the accessing and organizing of information. Since the introduction of Gmail in 2004, Google offered a widening array of software and services for communicating, creating and manipulating 2D and 3D images, producing documents, creating Web pages, managing time and social networking. For example: Google Docs is a suite of software for creating, storing and sharing text documents, spreadsheets, and presentations; Blogger is software that allows individuals to create their own Web logs; Google Groups allows individuals to establish and support communication within a group formed around a particular interest or identity; Orkut is a social networking service; Picasa is downloadable software for organizing, editing and sharing photographs. The Appendix describes Google's products and services.

Most of these additional products and services offered no new revenue opportunities for Google. However, Google was also expanding its advertising-based revenue model. Google's primary source of advertising revenue is AdWords launched in 2000. Advertisers specify the words that should trigger their ads and the maximum amount they are willing to pay per click. When a user searches google.com, short text

TABLE 21.2 Google's revenues ($ millions)

	2006	2007	2008
Advertising Revenues			
Google web sites	6332.8	10624.7	14413.8
Google Network web sites	4159.8	5787.9	6714.7
Total advertising revenues	10492.6	16412.6	21128.5
Licensing and other revenues	112.3	181.4	667.1
Total revenues	10604.9	16594.0	21795.6

Source: Google Inc., 10-K Report 2008.

advertisements appear as "sponsored links" on the right side of the screen. AdWords also places advertisement on third party web sites through the Google Partner Network.

AdSense uses an advertisement placement technology developed by Applied Semantics which Google acquired in 2003. It allows Google to place ads on third party web sites. In 2008, 32% of Google's advertising revenue was derived from partners' web sites, and 68% from its own web sites.

The Appendix explains AdWords and AdSense in greater detail. Table 21.2 shows Google's revenues from advertising.

In 2007 and 2008, Google's diversification efforts took a dramatic new turn with Google's entry into mobile telephony and Web browsers.

Android and Mobile Telephony

In November 2007, Google, in collaboration with its partners in the Open Handset Alliance, announced its Android wireless communication software platform. *PC Advisor* commented:

> Google's announcement of the Android mobile development platform . . . is yet another example of the lengths the company will go to keep its advertising business growing at a jaw-dropping rate. It is also another awe-inspiring—or terrifying, depending on one's perspective—display of the engineering and business resources Google can unleash and of the power it has to influence, disrupt and rearrange markets . . .
>
> "What we have here is Google trying to move the whole mobile internet forward through this alliance," said industry analyst Greg Sterling of Sterling Market Intelligence.
>
> In a nutshell, Google announced a free, open-source application development platform called Android for mobile devices with the intention of eclipsing existing operating systems from Microsoft, Symbian, Palm and others . . .
>
> Android will have a complete set of components, including a Linux-based operating system, middleware stack, customizable user interface and applications.
>
> Google envisions that with Android, developers will flood the mobile market with new applications and online services that can be written once and deployed in many phones, something that, as Google sees it, the current mobile technical fragmentation prevents.
>
> The goal: to radically improve the creation, delivery and provision of mobile online services and applications, in the hope that as people find the experience more satisfying, their mobile web and internet usage will balloon, along with online ad revenue . . .
>
> Ultimately, what is propelling Google in this effort is its core advertising business, which the company recognizes it must extend to the mobile market. A small market today, mobile advertising is expected to attain a significant size in coming years. According to Opus Research, mobile advertising spending in North America and Western Europe will reach a combined $5.08bn by 2012, up from an estimated $106.8m at the end of this year. This represents a compound annual growth rate of 116%. Opus Research, which released the forecast last week, said that improving the mobile user experience will prompt more people to spend more time using the internet via their mobile phones. This in turn will fuel ad revenue growth.

> In the end, independently of what ends up happening, Google's entry into the mobile market is a welcome development, Dulaney said. "We need powerful players from the 'wired' internet market to get into the mobile space to break up the tight control carriers have had on content," Dulaney said. "So far, carriers have controlled all the content and they've been bad at it. Innovation has been stifled."[6]

A few weeks later Google announced its intention of bidding in the Federal Communication Commission's upcoming auction of 700MHz wireless spectrum. The interesting feature of Google's bid was that it had no desire to win the auction. Its intention was to force the major telecom service providers into the auction so that a new section of the wireless spectrum would be developed for the wireless internet service. Google lobbying had already ensured that whoever developed this portion of spectrum would be required to allow users to download any software application they wanted on their mobile device and to use any mobile devices they liked on that wireless network. In January 2008, the FCC announced that AT&T and Verizon had won the auction bidding a total of $16 billion. Many observers believed that the real winner was Google: while AT&T and Verizon would bear the costs of developing the 700MHz waveband, Google would be able to offer its Android system and mobile internet services without any of the upfront costs.[7]

Chrome

Google's announcement of its Chrome Web browser on September 2, 2008, generated huge publicity, but little surprise. It was widely known that founders Brin and Page had wanted to launch a Web browser since Google's early days. For several years Google had been the main source of technical and financial support for Mozilla's Firefox browser. According to the Google's head of product development, Sundar Pichai: "Google's entire business is people using a browser to access us and the web." Google's explanation of its decision to launch its own browser emphasized the improved functionality for users: "Google Chrome is a browser that combines a minimal design with sophisticated technology to make the web faster, safer, and easier," claimed Google's web site. Microsoft's internet Explorer by contrast was limited by the legacy of its 15 year history, which meant that it was optimized for JavaScript or Web 2.0.

However, most observers believed that Google's strategic intent was not simply a superior user experience. An additional motive imputed to Google was its desire to protect the threat posed by the new version of Microsoft's internet Explorer (IE). Version 8 of IE launched in beta mode in August 2008 allowed an "InPrivate" protection mode that would delete cookies and make it more difficult to track users' browsing habits. The result would be to limit Google's ability to use such information for targeted advertising.

Others believed that Google's primary intention was not so much to protect itself against Microsoft as to launch a direct attack upon Microsoft's dominance of personal computing and to speed the transition of computing to a new online environment:

> [Google Chrome] is an explicit attempt to accelerate the movement of computing off the desktop and into the cloud—where Google holds advantage.

And it's an aggressive move destined to put the company even more squarely in the crosshairs of its rival Microsoft.[8]

The announcement 10 months later that Google would add an operating system to its Chrome browser was seen as confirmation that the primary motivation of Chrome was to strike against the core of Microsoft's market strength.

Google's Management and Capabilities

Google's phenomenal growth and capacity for innovation rested upon a management system that was unique, even by the unorthodox standards of Silicon Valley. In his book, *The Future of Management*, Gary Hamel identified several key features of the management system built by founders Larry Page (President of Products) and Sergey Brin (President of Technology), and their "adult supervisor" Eric Schmidt (Chairman and CEO):

1. *Hiring policy.* Google only employs people who it believes to be exceptionally talented: "Google's leaders believe that one exceptional technologist is many times more valuable than one average engineer; hence they insist on hiring only the brightest of the bright—folks out on the right-hand end of the bell-shaped curve. They also believe that if you let one 'bozo' in, more will surely follow. Their logic is simple: A-level people want to work with A-level people—fellow savants who will spark their thinking and accelerate their learning. Trouble is, B-level people are threatened by A-class talent, so once they get in the door, they tend to hire colleagues who are as unremarkable as they are."
2. *A "dramatically flat, radically decentralized" organization:* "In many ways, Google is organized like the internet itself: it's highly democratic, tightly connected, and flat. Like so much of Google's culture, the source of the company's radical decentralization can be traced back to Brin and Page, both of whom attended Montessori schools and credit much of their intellectual independence to that experience. Says Mayer: 'They don't like authority and they don't like being told what to do.' Brin and Page understand that breakthroughs come from questioning assumptions and smashing paradigms."
3. *Small, self-managing teams:* "Roughly half of Google's 10 000 employees—all those involved in product development—work in small teams, with an average of three engineers per team. Even a large project such as Gmail, which might occupy 30 people, is broken into teams of three or four, each of which works on a specific service enhancement, such as building spam filters or improving the forwarding feature. Each team has an 'über-tech leader,' a responsibility that rotates among team members depending on shifting project requirements. Most engineers work on more than one team, and no one needs the HR department's permission to switch teams."
4. *Rapid, low-cost experimentation.* "Evolutionary adaptation isn't the product of a grand plan, but of relentless experimentation . . . Google's 'just-try-it' philosophy is applied to even the company's most daunting projects, like digitizing the world's libraries. Like every new initiative, Google Book Search

> began with a makeshift experiment aimed at answering a critical question; in this case: how long does it take to digitize a book? To find out, Page and Mayer rigged up a piece of plywood with a couple of clamps and proceeded to photograph each page of a 300-page book, using a metronome to keep pace. With Mayer flipping pages, and one half of Google's founding team taking digital snapshots, it took 40 minutes to turn the ink into pixels. An optical character recognition program soon turned the digital photos into digital text, and within five days the pair had ginned up a piece of software that could search the book. That kind of step-wise, learn-as-you-go approach has repeatedly helped Google to test critical assumptions and avoid making bet-the-farm mistakes."[9]

The result was a constant impetus towards creativity, innovation, and entrepreneurial initiative. Indeed, given the caliber and characteristics of Google's employees, it was difficult to see how Google could not be a hotbed for innovation:

> Our employees, who have named themselves Googlers, are everything. Google is organized around the ability to attract and leverage the talent of exceptional technologists and business people. We have been lucky to recruit many creative, principled and hard working stars. We hope to recruit many more in the future. We will reward and treat them well . . . Because of our employee talent, Google is doing exciting work in nearly every area of computer science . . . Talented people are attracted to Google because we empower them to change the world; Google has large computational resources and distribution that enables individuals to make a difference. Our main benefit is a workplace with important projects, where employees can contribute and grow . . . [10]

The culture of creativity and innovation was institutionalized through Google's "70-20-10" rule which stipulated that Google would devote 70% of its engineering resources to developing the core business, 20% to extend that core into related areas, with 10% allocated to fringe ideas.

Underlying Google's capacity for innovation and the effective implementation of new initiatives was a set of resources that few other technology-based companies could match. With an operating cash flow of $7.9 billion in 2008 and a cash pile of $15.8 billion, Google was a financial powerhouse matched only by Microsoft, IBM, HP, and Apple. This financial strength allowed Google to buy its way through acquisition into almost any market or area of technology. Most of the time Google did not need buy its way into new market: like Apple, its brand (valued by Interbrand in 2008 at $25 billion—the world's tenth most valuable) offered it instant credibility. Most important was a user base unmatched by any other IT company. With 776 million unique visitors to its web site every day, it reached an estimated 77% of the world's internet audience daily.

Future Challenges

For all Google's vitality and its manifest destiny to lead the next generation of information technology, there were those—both within Googleplex and outside—who perceived danger in Google's trajectory. Despite a slowing during 2008, Google

was expanding rapidly. Between 2003 and 2007 its revenues had grown from $1.5 billion to $21.8 billion and employees from 1628 to 20222.[11] Coordination was a growing problem; while the majority of Google's employees were concentrated at its Mountain View, California, headquarters, Google had additional research and development and sales and support offices in 18 other cities throughout the U.S., as well as facilities in Argentina, Austria, Australia, Belgium, Brazil, Canada, China, Czech Republic, Denmark, Egypt, England, Finland, France, Germany, Hungary, India, Ireland, Israel, Italy, Japan, Korea, Mexico, New Zealand, Norway, Poland, Russia, Singapore, Spain, Sweden, Switzerland, Taiwan, Turkey and United Arab Emirates.[12]

Growing size and complexity were recognized by Google as significant sources of risk:

> We have experienced rapid growth in our headcount and operations, which has placed, and will continue to place, significant demands on our management, operational and financial infrastructure. If we do not effectively manage our growth, the quality of our products and services could suffer, which could negatively affect our brand and operating results. Our expansion and growth in international markets heightens these risks as a result of the particular challenges of supporting a rapidly growing business in an environment of multiple languages, cultures, customs, legal systems, alternative dispute systems, regulatory systems and commercial infrastructures. To effectively manage this growth, we will need to continue to improve our operational, financial and management controls and our reporting systems and procedures.[13]

As Google increasingly displaced Microsoft as the world's pre-eminent IT company, it would be a target for criticism and regulatory pressures. Under the headline "Is Google Too Powerful?," the potential for Google to dominate the Web and media advertising was noted by *Business Week* early in 2007:

> . . . Google has come to represent all our hopes, dreams, and fears about the disruptive promise and dangers of the internet. As this clash plays out over the next couple of years, the outcome could determine the way we'll entertain ourselves, shop, socialize, and do business on the internet. The overriding question: Will the vast commercial landscape of the Net, like so many other tech markets in the past, condense to one dominant force for the foreseeable future? Will we just Google everything?[14]

By 2009, the dominant concern was less about market power in a traditional sense and more about the sheer mass of personal data that Google had access to. Google's cookies allow it to track every Google user's web browsing. Its online map service, "Street View," allows views inside individuals' home properties and the observation of visitors to those homes. Gmail allows Google an intimate view of personal communications of Gmail's 30 million account holders.

These growing concerns about privacy and market power would impose additional pressures on Google's top management team. Had the time come for Google's leading trio—Brin, Page, and Schmidt—to scale back Google's ambitions and draw boundaries around Google's corporate strategy?

Appendix: Description of Google's business and products (extracts from Google, 10-K Report for 2008)

Overview

Google is a global technology leader focused on improving the ways people connect with information. Our innovations in web search and advertising have made our web site a top internet property and our brand one of the most recognized in the world. We maintain a large index of web sites and other online content, which we make freely available via our search engine to anyone with an internet connection. Our automated search technology helps people obtain nearly instant access to relevant information from our vast online index.

We generate revenue primarily by delivering relevant, cost-effective online advertising. Businesses use our AdWords program to promote their products and services with targeted advertising. In addition, the thousands of third-party web sites that comprise the Google Network use our AdSense program to deliver relevant ads that generate revenue and enhance the user experience . . .

Our Mission

Our mission is to organize the world's information and make it universally accessible and useful. We believe that the most effective, and ultimately the most profitable, way to accomplish our mission is to put the needs of our users first. We have found that offering a high-quality user experience leads to increased traffic and strong word-of-mouth promotion. Our dedication to putting users first is reflected in three key commitments:

- We will do our best to provide the most relevant and useful search results possible, independent of financial incentives. Our search results will be objective and we do not accept payment for search result ranking or inclusion.
- We will do our best to provide the most relevant and useful advertising. Advertisements should not be an annoying interruption. If any element on a search result page is influenced by payment to us, we will make it clear to our users.
- We will never stop working to improve our user experience, our search technology and other important areas of information organization.

We believe that our user focus is the foundation of our success to date. We also believe that this focus is critical for the creation of long-term value. We do not intend to compromise our user focus for short-term economic gain.

How We Provide Value to Our Users

We serve our users by developing products that quickly and easily find, create, organize and share information. We place a premium on products that matter to many people and have the potential to improve their lives.

Some of the key benefits we offer include:

Comprehensiveness and Relevance Our search technologies sort through a vast and growing amount of information to deliver relevant and useful search results in response to user queries. This is an area of continual development for us. When we started the company in 1998, our Web index contained approximately 30 million documents. We now index billions of Web pages and strive to provide the most comprehensive search experience possible . . .

Objectivity We believe it is very important that the results users get from Google are produced with only their interests in mind. We do not accept payment for search result ranking or inclusion. We do accept fees for advertising, but the advertising is clearly marked and separated and does not influence how we generate our search results. This is similar to a newspaper, where the articles are independent of the advertising . . .

Global Access We strive to provide our services to everyone in the world and the Google interface is available in 120 languages . . .

Ease of Use We have always believed that the most useful and powerful search technology hides its complexity from users and gives them a simple, intuitive way to get the information they want. We have devoted significant efforts to create a streamlined and easy-to-use interface based on a clean search box set prominently on a page free of commercial clutter . . .

Pertinent, Useful Commercial Information The search for information often involves an interest in commercial information—researching a purchase, comparing products and services or actively shopping. We help people find commercial information through our search services and advertising products . . .

Multiple Access Platforms The mobile phone is the primary way that many people around the world access the internet. We have continued to invest in improving mobile search and have introduced applications that allow users to access search, email, maps, directions and satellite imagery through their mobile devices.

Improving the Web We want to make the Web experience as good as possible for users around the world. This includes providing platforms for developers to build, deploy and run increasingly rich applications. For users, we are investing in areas to improve their experience in using web-based applications, including making browsers more stable and powerful.

Products and Services for our Users

Our product development philosophy involves rapid and continuous innovation, with frequent releases of early-stage products that we then iterate and improve. We often make products available early in their development stages by posting them on Google Labs, at test locations online or directly on Google.com. If our users find a

product useful, we promote it to "beta" status for additional testing. Once we are satisfied that a product is of high quality and utility, we remove the beta label and make it a core Google product. Our main products and services are described below:

Google.com—Search and Personalization We are focused on building products and services on our web sites that benefit our users and let them find relevant information quickly and easily. These products and services include:

Google Web Search In addition to providing easy access to billions of Web pages, we have integrated special features into Google Web Search to help people find exactly what they are looking for on the Web.

Google Image Search Google Image Search is our searchable index of images found across the web. To extend the usefulness of Google Image Search we offer advanced features, such as searching by image size, format and coloration and restricting searches to specific web sites or domains.

Google Book Search Google Book Search lets users search the full text of a library-sized collection of books to discover books of interest and to learn where to buy or borrow them . . .

Google Scholar Google Scholar provides a simple way to do a broad search for relevant scholarly literature including peer-reviewed papers, theses, books, abstracts and articles . . .

Google Finance Google Finance provides a simple user interface to navigate complex financial information in an intuitive manner . . .

Google News Google News gathers information from thousands of news sources worldwide and presents news stories in a searchable format within minutes of their publication on the Web . . .

Google Video Google Video lets users upload, find, view and share video content worldwide.

Google Blog Search Google Blog Search enables users to search the blogging universe more effectively and find out users' opinions on a wide variety of subjects. The Google Blog Search index includes every blog that publishes a site feed.

iGoogle and Personalized Search iGoogle connects users to the information that is most useful and important to them in an easy-to-use and customizable format . . .

Google Product Search Google Product Search helps users find and compare products from online stores across the web and directs users to where they can buy these products . . .

Google Custom Search Google Custom Search allows communities of users familiar with particular topics to build customized search engines . . .

Google Base Google Base lets content owners submit content that they want to share on Google web sites . . .

Google Webmaster Tools Google Webmaster Tools provides information to webmasters to help them enhance their understanding of how their web sites interact with the Google search engine . . .

Applications

Information created by a single user becomes much more valuable when shared and combined with information from other people or places. Therefore our strategy for products we develop in this space is simple: develop tools for our users to create, share and communicate any information generated by the user, thus making the information more useful and manageable. Examples of products we have developed with this strategy in mind include:

Google Docs

Google Docs allows our users to create, view and edit documents, spreadsheets, and presentations from anywhere using a browser . . .

Google Calendar

Google Calendar is a free online shareable calendar service that allows our users to keep track of the important events, appointments and special occasions in their lives and share this information with anyone they choose . . .

Gmail

Gmail is Google's free webmail service that comes with built-in Google search technology . . . We serve small text ads that are relevant to the messages in Gmail.

Google Groups

Google Groups is a free service that helps groups of people to connect to information and people that have interest in them. Users can discuss topics by posting messages to a group, where other people can then read and respond . . .

Google Reader

Google Reader is a free service that lets users subscribe to feeds and receive updates from multiple web sites in a single interface . . .

Orkut

Orkut enables users to search and connect to other users through networks of trusted friends. Users can create a profile, personal mailboxes, post photos and join or manage online communities.

Blogger

Blogger is a Web-based publishing tool that lets people publish to the Web instantly using weblogs, or "blogs."

Google Sites
Google Sites allows users to easily create, update and publish content online . . .

YouTube
YouTube is an online community that lets users worldwide upload, share, watch, rate, and comment on videos, from user generated, niche professional, to premium videos . . . YouTube offers a range of video and interactive formats for advertisers to reach their intended audience.

Client

Google Toolbar
Google Toolbar is a free application that adds a Google search box to web browsers (internet Explorer and Firefox) . . .

Google Chrome
Google Chrome is an open-source browser that combines a minimal design with technologies to make the web faster, safer, and easier to navigate.

Google Pack
Google Pack is a free collection of safe, useful software programs from Google and other companies that improve the user experience online and on the desktop . . .

Picasa
Picasa is a free service that allows users to view, manage and share their photos . . .

Google Desktop
Google Desktop lets people perform a full-text search on the contents of their own computer, including email, files, instant messenger chats and web browser history . . .

Google GEO—Maps, Earth and Local

Google Earth
Google Earth lets users see and explore the world and beyond from their desktop. Users can fly virtually to a specific location and learn about that area through detailed satellite and aerial images . . .

Google Maps
Google Maps helps people navigate map information . . .

Google Sketchup and Sketchup Pro
Google Sketchup is a free tool that enables users to model buildings in 3D . . . The Pro version of this tool is sold to professional designers and includes additional features.

Google Mobile and Android

Google Mobile
Google Mobile lets people search and view both the "mobile Web," consisting of pages created specifically for wireless devices, and the entire Google index. Users can

also access online information using Google SMS by typing a query to the Google shortcode and checking their email using Gmail Mobile. Google Mobile is available through many wireless and mobile phone services worldwide.

Google Maps for Mobile

Google Maps for Mobile is a free Java client application that lets users view maps and satellite imagery, find local businesses and get driving directions on mobile devices.

Blogger for Mobile

With Blogger for mobile devices, users can take pictures with their camera phones and then post their pictures and text comments to their blog using MMS or email.

Google Gmail, News and Personalized Home for Mobile

Several of our services, such as Gmail, News and Personalized Home are also available as mobile applications.

GOOG-411

GOOG-411 is a free, speech-enabled application allowing users to call 1-800-GOOG-411 to search for businesses by name or category.

Android

Android is a free, open-source mobile software platform which allows developers to create applications for mobile devices and for handset manufacturers to install . . .

Search by Voice

Search by Voice lets users do a Google Web search just by saying what they are looking for . . .

Google Checkout

Google Checkout is a service for our users, advertisers and participating merchants that is intended to make online shopping faster, more convenient and more secure . . .

Google Labs

Google Labs is our test bed for our engineers and adventurous Google users . . .

The Technology Behind Search and Our User Products and Services

Our Web search technology uses a combination of techniques to determine the importance of a Web page independent of a particular search query and to determine the relevance of that page to a particular search query.

Ranking Technology

. . . PageRank is a query-independent technique for determining the importance of web pages by looking at the link structure of the Web.

Text-Matching Techniques

Our technology employs text-matching techniques that compare search queries with the content of web pages to help determine relevance . . . By combining

query independent measures such as PageRank with our text-matching techniques, we are able to deliver search results that are relevant to what people are trying to find.

Infrastructure

We provide our products and services using our homegrown software and hardware infrastructure, which provides substantial computing resources at low cost. We currently use a combination of off-the-shelf and custom software running on clusters of commodity computers . . .

How We Provide Value to Our Advertisers and Content Owners

Google AdWords

For advertisers seeking to market their products and services to consumers and business users over the internet, we offer Google AdWords, an auction-based advertising program that lets advertisers deliver relevant ads targeted to search queries or Web content across Google sites and through the web sites of our Google network, which is the network of online and offline third parties that use our advertising programs to deliver relevant ads with their search results and content . . . AdWords is accessible to advertisers in 41 different interface languages.

Advertisers in our AdWords program create text-based or display ads, bid on the keywords that will trigger the display of their ads and set daily spending budgets. AdWords features an automated online signup process that lets advertisers quickly implement ad campaigns on Google properties and the web sites of our Google Network members. Ads are ranked for display in AdWords based on a combination of the maximum cost-per-click pricing set by the advertiser and click-through rates and other factors used to determine the relevance of the ads. This favors the ads that are most relevant to users, improving the experience both for the person looking for information and for the advertiser who is generating relevant ads . . .

Google AdSense We are enthusiastic about helping content owners monetize their content, which facilitates the creation of better content to search . . . Our Google AdSense program enables web sites that are part of the Google Network to deliver AdWords ads that are relevant to the search results or content on their pages. It also allows offline media companies, such as television and radio stations, to deliver ads and audio ads to the content they provide. We share most of the revenue generated from ads shown by a Google Network member with that member. The key benefits we offer to Google Network members include:

Access to Advertisers Many small web-site companies and content producers do not have the time or resources to develop effective programs for generating revenue from online advertising. Even larger sites, with dedicated sales teams, may find it difficult to generate revenue from pages with specialized content. Google AdSense promotes effective revenue generation by providing Google

Network members access to Google's base of advertisers and their broad collection of ads . . .

Improved User Satisfaction Many web sites are cluttered with intrusive or untargeted advertising that may distract or confuse users and may undermine users' ability to find the information they want . . . Our AdSense program extends our commitment to improving the overall Web experience by enabling web sites to display AdWords ads in a fashion that we believe people find useful rather than disruptive.

Better Storage, Management, Access and Visibility We have developed new storage, management and access technologies to allow content owners and producers to distribute and, if they wish, monetize more types of online and offline content . . .

Syndicated Search We provide our search technology to partners of all sizes, allowing Google search service to be offered through these partners' properties. For commercial partners, we provide an extensive range of customization options.

Display Advertising

Display advertising is internet advertising that typically includes static or animated images as well as interactive audio or video media, such as the banner ads you see on the tops or sides of many popular web sites. Our goal is to make it easy for anyone to use display advertising. We want advertisers to realize a better return on their display advertising campaigns and publishers to maximize the value of the content on their web sites by providing tools, platforms and channels for ad management and delivery.

We completed our acquisition of DoubleClick in March 2008 and are in the process of integrating DoubleClick's online ad serving and management services into Google's advertising solutions. DoubleClick provides Google with a platform for delivering display advertising. DoubleClick also provides services related to the delivery of display advertising, including media planning, buying, implementation and measurement tools for advertisers and agencies and forecasting and reporting tools for publishers. Through these tools we also provide publishers with access to agencies and advertisers to help them sell their advertising inventory and ways to streamline the ad sales process.

We also offer advertising solutions on YouTube in a range of video, static or animated images, and interactive formats.

The Technology Behind Google's Advertising Programs

Our AdWords and AdSense programs serve millions of relevant, targeted ads each day based on search terms people enter or content that they view on the Web. The key elements of our advertising technology include:

Google AdWords Auction System

The Google AdWords auction system lets advertisers automatically deliver relevant, targeted advertising. Every search query we process involves the automated execution

of an auction, resulting in our advertising system often processing hundreds of millions of auctions per day. To determine whether an ad is relevant to a particular query, this system weighs an advertiser's willingness to pay for prominence in the ad listings (the cost-per-click or cost-per-impression bid) and interest from users in the ad as measured by the click-through rate and other factors . . . The AdWords auction system also incorporates the AdWords Discounter, which automatically lowers the amount advertisers actually pay to the minimum needed to maintain their ad position . . .

AdSense Contextual Advertising Technology

Our AdSense technology employs techniques that consider factors such as keyword analysis, word frequency and the overall link structure of the web to analyze the content of individual web pages and to match ads to them almost instantaneously . . . Our display advertising programs provide advertisers and publishers services related to the delivery of branded display advertising. The key elements of our display advertising technology include:

DoubleClick Advertiser Platform

The DoubleClick Advertiser Platform provides tools for media planning, buying, selling, ad delivery, measurement, and optimization . . .

YouTube

YouTube offers video ads solutions to advertisers that provide advertisers with a way to promote their content to the YouTube community as well as to associate themselves with content being watched by their target audience . . .

Google Enterprise

Schools and businesses are increasingly moving towards Web-based applications and away from licensed software. Since Web-based applications require minimal up-front investment, businesses can pay as they use them and download updates.

Google Apps

Google Apps provides hosted communication and collaboration tools for organizations such as businesses, schools and groups. Google Apps includes communication features such as Gmail, Google Calendar, Google Video, Google Sites, and Google Talk and collaboration features such as Google Docs. It is available on an organization's own domain . . .

Google Mini

The Google Mini is targeted at small-and medium-sized businesses who want to let employees and customers search designated documents, intranets and web sites.

Google Search Appliance

The Google Search Appliance is similar to the Google Mini except that it can handle more documents and offers more advanced features. Some advanced features of the Google Search Appliance include integration with advanced corporate security protocols, integration with other enterprise applications, such as content management systems, portals and other systems and real-time search of business applications . . .

Notes

1 "Google's Growing Identity Crisis": Chris O'Brien's blog, July19, 2009, www.mercurynews.com/ci_12853656?IADID, accessed July 20, 2009.
2 Quoted in D. Rowan, "Inside Google: The Man with All the Answers," *Wired,* August 2009, p. 77.
3 "Lex: Google the One-trick Pony," *Financial Times,* April 17, 2009.
4 Google Inc. SEC form 424B3, filed November 23, 2004.
5 At the March 2008 Federal Communications Commission's auctioning of licenses to "C-block" spectrum, Google was one of the bidders. Google was delighted to lose out to winning bids to AT&T and Verizon that together amounted to over $18 billion because the FCC had decreed that the new spectrum owners would be required to open their networks to third-party providers. Hence, Google would be free to offer its wireless service without the need to invest in infrastructure. See: "An Auction that Google was Content to Lose," *New York Times,* April 4, 2008, www.nytimes.com/2008/04/04/technology/04auction.html?_r=1&oref=slogin, accessed October 23, 2009.
6 "Analysis: Google's Android Mobile Strategy Explained," *PCAdvisor,* November 6, 2007, www.pcadvisor.co.uk/news/index.cfm?newsid=11248, accessed July 21, 2009.
7 "Wireless Auction: Google Likely Out, and Happy," *Forbes,* February 6, 2008.
8 "Inside Chrome: The Secret Project to Crush IE and Remake the Web," *Wired Magazine,* October 16, 2008.
9 G. Hamel, *The Future of Management,* Harvard Business School Press, Boston MA, 2007.
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11 These consisted of 7254 in R&D, 8002 in sales and marketing, 3109 in general and administrative and 1857 in operations.
12 Google Inc., 10-K Report to the SEC for 2007, p. 33.
13 Google Inc., 10-K Report to the SEC for 2008, p. 20.
14 "Is Google Too Powerful?" *Business Week,* April 9, 2007.