

# The Google Enigma

by Nicholas G. Carr

01/31/2008

a strategy+business exclusive

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Should innovation-minded managers look at the fast-growing Internet company as a model — or an anomaly?

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**T**his decade's most remarkable business story has been the rise of Google from the dot-com ashes. The company didn't even exist 10 years ago — it was incorporated by its founders, Stanford University graduate students Larry Page and Sergey Brin, on September 7, 1998 — but it is today a juggernaut that is as feared as it is admired. The company's growth has been dizzying, its revenues shooting up from less than US\$500 million in 2002 to more than \$10.5 billion in 2006. And despite a prolonged hiring binge, an aggressive acquisition program, and a multibillion-dollar investment in building data centers, Google remains robustly profitable, earning a net income of \$2 billion on \$7.5 billion of sales through the first half of 2007. Since the company's initial public offering in August 2004, its stock price has risen fivefold.

Whenever a company becomes wildly successful in a brief span of time, it naturally becomes an object of fascination for corporate executives and even the general public. More than that, it comes to be pre-

sented as a new model for business success. Reporters and scholars scour its history and its practices, looking to distill general lessons for other firms to copy. Google is no exception. Over the last two years, the workings of the company's "idea factory," as *Business Week* describes it, have been dissected in cover stories in all the major business magazines, and business school professors have published studies documenting how the company organizes and manages its product development efforts. In his new book, *The Future of Management*, London Business School professor Gary Hamel calls Google "a modern management pioneer" that "has much to teach us about how to build companies that are truly fit for the 21st century."

That's heady stuff, and it's hard not to get caught up in the hype. But business executives have at least two reasons to think twice before leaping aboard the Google bandwagon. First, for all its success, Google is still a young company, and it has yet to be tested by adversity. We don't even know whether its approach to management, and in particular its approach to innovation, is a *cause* of its success or a



*product* of its success — a crucial distinction. Second, we don't know how well Google's example applies to other businesses. Google is certainly a different sort of company, but is it so different as to be anomalous? Is the company an exemplar or a freak?

It's probably too early to answer such questions definitively. But by taking a close look at Google's business model and innovation program, we can discover important clues. And we may even gain a few insights into how our ideas about business innovation are shaped.

### Complementary Advantage

"Some say Google is God," Sergey Brin once said. "Others say Google is Satan." The confusion about Google's identity may not be quite that Manichean, but it does run deep. Despite all the media attention the company has received, it remains an enigma. People can't even agree what industry it's in. The many businesses that see Google as

indeed an entirely new kind of business, one that transcends and redefines all traditional categories. When you boil down Google's business model, however, you find that it's not quite as mysterious as it seems. The way Google makes money is actually straightforward: It brokers and publishes advertisements through digital media. More than 99 percent of its sales have come from the fees it charges advertisers for using its network to get their messages out on the Internet.

Google's protean appearance is not a reflection of its core business. Rather, it stems from the vast number of *complements* to its core business. Complements are, to put it simply, any products or services that tend to be consumed together. Think hot dogs and mustard, or houses and mortgages. (For a general discussion of complements, see my column "Complementary Genius," *s+b*, Summer 2006.) For Google, literally everything that happens on the Internet is a complement to its

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an actual or potential competitor include software houses, advertising agencies, telephone companies, newspapers, TV networks, book publishers, movie studios, credit card processors, and Internet firms of all stripes. Even financial advisors, doctors, and librarians eye the company warily.

The sheer breadth of Google's influence and activity can easily be interpreted as evidence that it is

main business. The more things that people and companies do online, the more ads they see and the more money Google makes. In addition, as Internet activity increases, Google collects more data on consumers' needs and behavior and can tailor its ads more precisely, strengthening its competitive advantage and further increasing its income. As more and more products and services are delivered digitally over computer

networks — entertainment, news, software programs, financial transactions — Google's range of complements is expanding into ever more industry sectors.

Because the sales of complementary products rise in tandem, a company has a strong strategic interest in reducing the cost and expanding the availability of the complements to its core product. It's not too much of an exaggeration to

do it. Those two facts — the vast breadth of Google's complements, and the company's ability to push the price of those complements toward zero — set the company apart from other firms. Google faces far less risk in product development than the usual business does. It routinely introduces half-finished products and services as online "betas" because it knows that, even if the offerings fail to win a big share of

answer is "yes and no."

Most of Google's success and all of its profits can be traced to three innovations: the first a brilliant insight into the organization of information, the second a creative act of imitation, and the third a breakthrough in the engineering of computer systems. The company's founding idea was hatched by Page and Brin in early 1996 when they realized that Web search engines were deeply flawed. In ranking results for a keyword search, traditional engines looked mainly at the content of Web pages, adding up, for example, the number of times the keyword appeared. The Google founders saw that you'd get a much better sense of a page's relevance if you looked at the number and the quality of the other pages linking to it. Links, they realized, were the Web's version of votes: add them up and you'd get a clear picture of the importance and value of sites.

The superior results delivered by Google quickly drew the attention of Web surfers, and in short order it became the dominant search engine. But serving up free search results is not, in itself, much of a business model. And that brings us to the second critical innovation: the development of an auction to sell ads linked to search results. Google did not come up with the idea of letting advertisers bid on search terms. It swiped the concept from another search engine, GoTo. But Google perfected the process. Whereas GoTo ranked its search ads according to the size of advertisers' bids, Google added a second criterion — the likelihood that people would actually click on the ad. That innovation made Google's ads more relevant, increased click-through rates substantially, and, when com-

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say that a company would like all complements to be given away. If hot dogs became freebies, mustard sales would skyrocket. It's this natural drive to reduce the cost of complements that, more than anything else, explains Google's strategy. Nearly everything the company does, including building big data centers, buying optical fiber, promoting free Wi-Fi access, fighting copyright restrictions, supporting open source software, and giving away Web services and data, is aimed at reducing the cost and expanding the scope of Internet use. To borrow a well-worn phrase, Google wants information to be free — and that is why Google strikes fear into so many different kinds of companies.

There's one more twist. Because the marginal cost of producing and distributing a new copy of a purely digital product is close to zero, Google not only has the desire to give away informational products; it has the economic leeway to actually

the market, they will still tend to produce attractive returns by generating advertising revenue and producing valuable data on customer behavior. For most companies, a failed launch of a new product is very costly. For Google, in general, it's not. Failure is cheap.

That makes Google a potentially dangerous model for other businesses. Your company may find itself competing, directly or indirectly, with Google, but unless you make money by selling advertising attached to digital goods, you may not be able to learn much from its example, at least not at a strategic level. The economics of Google's business may simply be too different. By following its lead, you may go broke.

### Lessons from the Googleplex

But what about learning at a more tactical level? Can businesses at least draw some useful lessons from the way Google approaches the difficult process of business innovation? The

bined with Google's superior search results, turned Google's auction into a gold mine.

Google's third great innovation — and it may well be the one most critical to the firm's future success — is the design of its parallel-processing computer system. Housed in scores of data centers around the world and incorporating hundreds of thousands of computers, the system is able to crunch numbers and process searches and other transactions at unprecedented speeds. Because people demand quick responses from the software they use online, Google's system has provided it with a big advantage over rivals like Microsoft and Yahoo. The future competition among these companies will be fought as much on the power and efficiency of their machinery as on the attractiveness of their services.

These innovations represent a remarkable accomplishment. But it's important to remember that they largely predate the formal innovation process that Google developed as it expanded and that is now the source of much of the praise lavished on the company. That process appears to have three key tenets. First, Google believes in throwing lots of people at innovation. Its aggressive recruitment of talented software engineers is legendary in Silicon Valley, and it keeps its workers happy by lavishing them with gourmet food, toys and games, free bus service, and other generous perks. Second, it organizes its product development staff into a lot of small teams and gives them considerable freedom in how they allocate their time and money. In a variation on a practice made famous by 3M, Google allows its engineers to devote 20 percent of their time to

pet projects, with little corporate oversight. Third, the company is fanatical about using computers to monitor and analyze its employees' work as well as its customers' use of its services. Google's CEO, Eric Schmidt, has said its goal is to use "metrics of performance" to "systematize" every aspect of its operations.

The company's innovation system reflects its deep roots in academia. Google operates in much the

Google Answers and Google Video, have been scaled back or abandoned altogether.

Many of the most innovative and successful of Google's new services are, in fact, ones it has acquired rather than created. Those include the hugely popular video-sharing service YouTube, the Weblog publisher Blogger, the virtual globe Google Earth, the online word processor Writely (renamed Google Docs), the wiki developer JotSpot,

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same way that a science department operates in a big research university. It hires the smartest people it can find, allows them to pursue their interests in small collegial teams, and measures the progress and results of their work with scientific precision. In a sense, Brin and Page have tried to recreate the graduate school milieu inside the halls of a for-profit corporation.

But how successful has the academic approach really been in creating thriving new products and services? So far, the record has been less than outstanding. Google has introduced dozens of new services, but with only a couple of exceptions, notably Google Maps, they have failed to capture dominant shares of their markets. Even the company's much-discussed e-mail service, Gmail, lags well behind the industry leaders, Yahoo Mail and Microsoft's Hotmail, in number of subscribers. Some of the company's heavily hyped new ventures, such as

the news syndication service Feedburner, and the Internet phone service GrandCentral. When it comes to innovation, Google is starting to look less like a sower than a harvester, less like an inventor than an exploiter. That's a natural and perhaps necessary progression for a rapidly growing company, but it belies the firm's popular image as a wildly successful innovator.

When it comes to creating hit products, Google may actually be hampered by its unique economics. Because the cost of failure is so low, it can experiment in all sorts of areas and rush new services to market in the early stages of their development. That kind of freedom brings many benefits, but it can also lead to an erosion of discipline. In the absence of strong economic pressures, it's easy for companies like Google to put off making the hard choices and difficult trade-offs that lie at the heart of long-term business success.

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There are signs that Google is coming to recognize this problem. Over the past year, its management has begun tightening the reins on its organization, imposing some restrictions on the company's free-wheeling and free-spending culture. Late in 2006, in what CEO Schmidt called "a big change in the way we run the company," it ordered its innovation teams to focus on fewer initiatives and reduce the overall number of products under development by 20 percent. An exasperated Sergey Brin admitted that he "was getting lost in the sheer volume of the products that we were releasing." And when the company announced disappointing earnings for the second quarter of 2007, Schmidt put the blame on overhiring and announced that the company would be more conservative in expanding its staff in the future. Google is hardly staid, but it is growing up.

### **Fantasy and Stability**

Google's recent moves suggest that, though its business model may be unprecedented, it is not immune to the growing pains that have bedeviled successful young companies in the past. As cash pours in, it is all too easy for a fast-growing startup's founders and executives to become convinced that the old rules don't apply to them — that they are blessed with the Midas touch. Investors and reporters often buy into the fantasy, amplifying management's cockiness. But as discipline weakens, the company inevitably begins to overreach and overspend — until some lapse or failure abruptly cures the hubris and returns everyone to reality.

The fact that Google appears to be following this well-worn path

doesn't take anything away from the company's great accomplishments or the landmark innovations that form the pillars of its success. Nor does it mean that other companies should ignore its example. At the very least, Google's use of powerful computers to collect and make sense of the operational and customer data flowing through the Internet and other networks provides a window into the future of many industries. And, on a related note, the company has created simple but useful systems for sharing information within and between teams, a challenge that has frustrated many firms. Google may not be a perfect model, but it deserves close attention and study.

Above all, Google teaches us, through both its successes and its failures, that smart companies — the ones that are not only consistently innovative but consistently profitable — exhibit three qualities. They hire talented people and give them room to excel. They measure progress and results rigorously and make course adjustments quickly. And they remain disciplined in their work and their spending, curbing the instinct to do too much at once. Of course, that sounds less like a radical rethinking of business verities than a restatement of them. Which brings us to a further lesson: Beware the inevitable hype about how the latest business trend or the newest overnight success "changes everything." Yes, markets and technology change, sometimes with devastating speed, but through the turmoil, the underpinnings of business success remain fairly stable. +

Reprint No. 07404

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*strategy+business* magazine  
is published by Booz & Company Inc.  
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or call 1-877-829-9108.