ANNALS OF COMMUNICATIONS

SEARCHING FOR TROUBLE

Why Google is on its guard.

BY KEN AULETTA

In a suit and tie and with closely cropped gray hair, Mel Karmazin stood out as he crossed the Google campus, in Mountain View, California, on a sunny June day in 2003. Young people in jeans and baggy T-shirts passed him holding their laptops before them like waiters' trays. Google was nearly five years old, and was thought to be merely a search engine. As the C.O.O. of Viacom, Karmazin represented one of the world's largest media companies—the owner of, among other holdings, the CBS network, TV and radio stations, Paramount Pictures, MTV and its sister cable networks, and the publishers Simon & Schuster. Two of Viacom's biggest competitors, AOL and Time Warner, had earlier merged to become the world's largest old-and-new-media conglomerate, and Karmazin was looking for potential partners in the tech world.

Waiting to greet him in a conference room was thirty-year-old Larry Page, one of Google's co-founders. With jet-black eyebrows, short black hair patted down on his forehead, a permanent five-o'clock shadow, dark eyes that often remained fixed on the floor, and wearing a T-shirt and jeans, Page seemed strange to Karmazin. He was resolutely silent throughout the meeting. Sitting next to him was Google's chief executive officer, Eric Schmidt, whose shirt and tie, round glasses, and relative maturity—he was then forty-eight—were more welcoming. "Eric looked like me," Karmazin recalled not long ago. Google's other founder, Sergey Brin, who was then twenty-nine years old, arrived late and rollerbladed into the room, out of breath and wearing a T-shirt and gym shorts.

Schmidt and Brin began by explaining that Google was a "neutral" search engine that promoted no content company and no advertisers, and was intended to make the world's information available without favoritism. The company's algorithms rank those links which generate the most traffic, and are therefore presumed to be more reliable, and they also assign a slightly higher qualitative ranking to more dependable sources—for instance, *Times* stories. By mapping, among other variables, how many people click on a link, and how long they linger there, Google assigns it a value, known as PageRank, after Larry Page.

Of more interest to Karmazin was the company's advertising business, which accounted for almost all its revenues. Google offered a program called AdWords, which allowed potential advertisers to bid to place small text ads next to the results for key search words. Nike and Adidas might, for example, vie for ad space adjacent to keywords such as "sneakers" and "basketball." In a second advertising program, AdSense, Google married Web destinations with advertisers. If Intel wanted to advertise on technology blogs, or a hotel in London wanted to promote itself on travel sites, Google put the advertiser together with the site through a similar automated system. Few ad reps were needed, and there were no negotiations or relationships.

Schmidt, Page, and Brin liked to say that Google would provide an answer to the adman's legendary line: "I know half of my advertising works, I just

GERALD SCARFE

Google has antagonized just about every traditional-media company at some point.

don't know which half." Google and other digital companies rely on what are called cookies, software files that sit on a user's hard drive and keep track of his activities online: search questions asked, Web pages visited, advertisements clicked on, items purchased. And Google offers each advertiser a free online tool that allows the advertiser to assess the over-all effectiveness of an ad by tracking, hour by hour, the number of clicks and sales, the traffic produced by the keywords chosen, and the conversion rate from click to sale. The tens of millions of daily searches that Google performed in 2003 (today the number, according to internal Google documents, is about three billion) provided an enormous trove of data. "Our business is highly measurable," Schmidt said. "We know that if you spend *x* dollars on ads you'll get *y* dollars in revenues per industry, per customer."

Most American media—television, radio, newspapers, magazines—depend for their existence on a long-entrenched advertising model. That model, at which Karmazin excelled, depended on salesmanship, emotion, and mystery. "You buy a commercial on the Super Bowl, you're going to pay two and a half million dollars for the spot," Karmazin told the Google team. "I have no idea if it's going to work. You pay your money, you take your chances." To turn this lucrative system over to a mechanized auction posed a serious threat. "I want a salesperson in the process, taking that buyer out for drinks, getting an order he shouldn't have gotten." He added, "You don't want to have people know what works. When you know what works or not, you tend to charge less money than when you have this aura and you're selling this mystique."

The Google executives thought Karmazin's method manipulated emotions and cheated advertisers. Just as egregious, it wasn't measurable and was therefore inefficient. They were convinced that they could engineer a better system.

By then, Karmazin knew there was probably little that he and Google could do for each other. "I was selling twenty-five billion dollars' worth of advertising," he recalled. "Did I want someone to know what worked and what didn't?" Karmazin looked at his Google hosts and proclaimed, only half in jest, "You're fucking with the magic!"

Eleven years after Google's birth, we no longer search for information on the Web: we Google it. AdSense, which last year delivered more than five billion advertising dollars to Web sites, and AdWords, which has become a vehicle for advertisers to reach an online audience, have fostered the growth of the Web. Google search takes in about four of every ten online advertising dollars, and last year Google's revenues exceeded twenty-two billion dollars, more than two-thirds of the thirty billion in total U.S. newspaper advertising projected for this year. Google has reinforced the notion that traditional media now want to combat: that digital information and content should be free and that advertising alone should subsidize it.

To many, Google appears impregnable. But at one point few thought that the Big Three auto companies would ever falter, or the original three television networks, or A.T.&T., I.B.M., or AOL. "There is nothing about Google's model that makes it invulnerable," Clayton Christensen, a professor at the Harvard Business School and the author of "The Innovator's Dilemma," says. "Think I.B.M. It had a seventy-per-cent market share of mainframe computers. Then the government decided to challenge it. Then the P.C. emerged." Seemingly overnight, computing moved from mainframes to P.C.s. For a long while, Microsoft seemed unstoppable, only to be diverted by government intervention and the development of Linux and open-source software. "Lots of companies are successful and are applauded by the financial community," Christensen says. "Then their stock price stalls, because they are no longer surprising investors with their growth. They try to get big too fast. They need to get in the market quickly to figure out the right strategy to succeed. Again, look at Microsoft. No one can fault the company for not investing in growth ideas. But none of these have grown up to be the next Windows, because they are not disruptive innovations." Maybe, he added, we are now beginning to "see this at Google."

Danny Sullivan, the editor of the Web site SearchEngineLand.com, who plays the role of the search industry's impartial umpire, believes that by 2007 Google had entered its awkward teen-age years. "The story of Google today is perhaps the adolescent period it is going through," he said. "How does it deal with the challenges of the growth it is going through? You are going to go through this wave of people leaving Google. They don't need to work there anymore. And it's not going to be fun, which will change the culture."

Spurred by Page and Brin, Google engineers usually start with a single question: Why must we do things the way they've always been done? With that question in mind, Google launched a blizzard of new products: Google Maps, to offer directions; Gmail, to send and store e-mail; Google Books, to digitize twenty million books and make them available for search or sale; Google Health, to organize personal medical records online; a series of energy-saving and energy-measurement initiatives; an operating system for wireless devices called Android; new software applications available with "cloud computing"; and Google TV, Audio, and Print Ads, with the purpose of selling television, radio, and newspaper advertising more cheaply. Google also announced two large acquisitions: in 2006, it bought YouTube, for $1.65 billion, and the following year DoubleClick, among the world's foremost digital-ad companies, for $3.1 billion. Around that time, Google started referring to itself not as a "search company" but as a "media company."

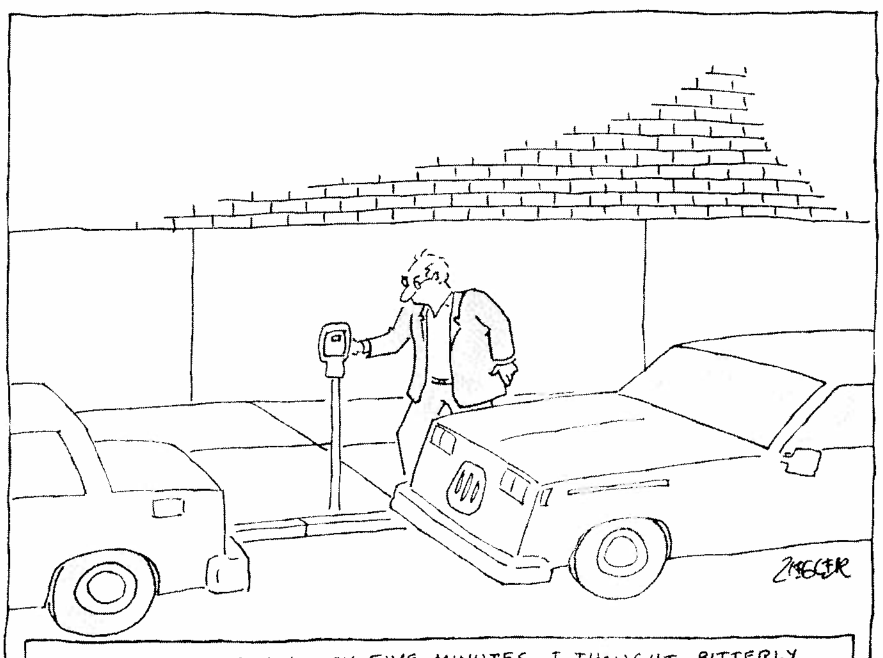
In its pursuit of expansion, Google has had to set aside old alliances. Jeff Bezos, who founded Amazon in 1994, was one of four initial investors who put up approximately two hundred and fifty thousand dollars each to support Google in 1998, when Page and Brin's office was in a Menlo Park garage. "There was no business plan," Bezos said. "They had a vision. It was a customer-focussed point of view." Their idea for a neutral, algorithm-based search engine wasn't the selling point, Bezos told me. "I just fell in love with Larry and Sergey." (According to a knowledgeable source, Bezos owned 3.3 million shares of Google stock in 2004, when the company went public. Bezos declines to say how much stock he owned, or whether he still owns it, but, at today's prices, those shares would be worth about $1.5 billion.) Now Google plans to compete with Amazon to sell electronic books, and Amazon has joined Microsoft and Yahoo in protesting that Google's effort to digitize the world's library might constitute the basis of an e-book monopoly. Both companies have also ventured into cloud computing, which allows a user to access data stored in a remote server from anywhere; it could reduce corporate costs, because companies could outsource their data storage; and it could subvert more expensive boxed software sold by Microsoft. All these software applications can function on a browser, Christophe Bisciglia, who was then the chief of Google's cloud-computing division, said last year. So in the future "the browser becomes the operating system." Google introduced its own browser, Chrome, in 2008.

Google was also directly competing with Apple and its C.E.O., Steve Jobs, who is a personal hero of Brin and Page's. In 2005, Google acquired Android, a mobile software company that was founded by Andy Rubin. Google hoped to claim a bigger slice of the mobile-phone business, which, according to Schmidt, had about two and a half billion users worldwide—more than twice the P.C. market—in 2007, a number that, it was estimated, would expand by a billion more in three to four years. A smart phone like Apple's iPhone, with its easy access to the Internet, delivered fifty times as many search queries as the typical mobile phone, according to Google. But many of Google's programs functioned poorly on mobile phones, and telephone companies, not consumers, decided which applications would appear on the phones. Rubin, who is now the vice-president of mobile platforms for Google, set out to make Android an open-source operating system—any software designer could see the source code and offer improved software applications. This was a direct assault on the telephone companies, and on Apple, which decided what software applications could be displayed for consumers and which phone company (A.T.&T.) could sell the iPhone. "Unless there is a vender-independent software solution, the consumer isn't going to be well served," Rubin says. "What I mean by 'vender-independent' is not a single source. Microsoft was a single source." Android, he continued, was trying to avoid what happened in the P.C. business, "so we don't end up with this monopoly." That is why, he said, Android is a system that "no single entity can own."

This challenge to Apple risked causing turmoil at the most senior levels of Google. In August, Schmidt resigned from Apple's board, in what was characterized as a mutual decision. Three other Apple directors may have to make the same choice, including Arthur Levinson, who also holds a seat on Google's board; former Vice-President Al Gore, who is a longtime Google adviser; and, perhaps most disruptive of all, Bill Campbell, the chairman of Intuit. He spends two days each week at Google, unpaid, and may be closer to Schmidt, Page, and Brin than their own directors (Schmidt calls him his "consigliere"; other Google executives call him the Coach); and he is also a pivotal director at Apple and one of Steve Jobs's few intimates. In the spring, Campbell told friends that if he was compelled to make a choice he would regretfully sever his ties to Google. By late summer, he expected that he would not have to choose.

"Once you get to a certain size, you have to figure out new ways of growing," Ivan Seidenberg, the C.E.O. of Verizon, says. "And then you start leaking on everyone else's industry. And when you do that you sort of wake up the bears, and the bears come out of the woods and start beating the shit out of you." In 2007, Seidenberg began to worry about Google entering the mobile-phone business. Other industries were alarmed, too. Newspapers, whose projected 2009 ad revenues will be roughly half the revenues they collected in 2000, are angry—as are magazines—and claim that Google search and Google News link to their content without paying for it. Television networks and movie studios are concerned that YouTube is building an audience partly with their content. Advertising and marketing agencies believe that Google intends to supplant them. Book publishers say that Google Books will monopolize the digital rights to all books ever published. Even Microsoft is unnerved. Bill Gates told *Fortune*, in 2005, that Google was "more like us than anyone else we have ever competed with." A number of media companies are actively lobbying Washington to monitor Google's activities.

In some cases, Google's expansion has been hampered. The Federal Trade Commission held up the acquisition of DoubleClick in 2007, and the following



TEN CENTS FOR A LOUSY FIVE MINUTES, I THOUGHT, BITTERLY REFLECTING ON A GENTLER TIME, WHEN A SINGLE DIME USED TO GET ME PARKING AND A NEWSPAPER WITH ENOUGH LEFT OVER TO BRIBE THE METER MAID TO LET ME OFF EASY ON MY VERY FIRST PARKING VIOLATION.

year the Justice Department threatened anti-trust charges until Google agreed to relinquish its advertising agreement with Yahoo. Federal courts will decide the fate of Google's bid to digitize books, and in May Christine A. Varney, the new head of the Justice Department's antitrust division, announced that her department would more rigorously monitor large tech firms.

There is a common belief at Google that the Obama Administration and the Democratic leadership in Congress are more sympathetic to Silicon Valley companies and technology issues. Eric Schmidt is an economic adviser to Obama, and other Google executives, such as David Drummond, the chief legal officer and senior vice-president of corporate development, were early and fervent Obama supporters. But Democrats traditionally favor more regulation, not less, and Google has powerful rivals that command attention in Washington. Google also touches on issues—privacy, concentration of power, copyright—that tend to draw scrutiny. And Google has other governments to contend with. The European Commission held up the DoubleClick merger, and France and others have raised objections to Google's proposed settlement with American publishing companies and authors. (Both the Europeans and the Justice Department have requested modification of the agreement.) China, which has the world's largest Internet audience, censored Google's search engine this summer and, early this year, blocked YouTube for several days.

As Google moves beyond search, it has antagonized just about every traditional media company at one time or another. Seated one afternoon in the small, bare conference room steps from the modest glass-walled office that Page shares with Brin, I asked Page whether it was inevitable that Google would sometimes bump into traditional media.

He quickly corrected me. "I would say, always," he said, with a subdued but not gleeful chuckle.

"Google's become a big company," Paul Buchheit, the engineer who came up with Google's slogan "Don't Be Evil," says. Buchheit left Google in 2006 and later started the aggregator Friendfeed.com (which was bought by Facebook). "It's a very different environment," he says. "You become distant from the users. When you get bigger, some engineer comes up with this crazy project, but he's four or five layers from Larry. These layers in between are going to throw up all sorts of weird barriers."

The company has always had an unusual management structure. Schmidt, who has an engineering Ph.D., is widely respected for both his technological and his management prowess, but every major decision is made by him, Page, and Brin, and requires a two-out-of-three vote. This can slow down the process, as can the fact that executives often don't know where the founders are, or if they will attend meetings. To a certain extent, Schmidt defends this management chaos, saying that it allows flexibility. Page describes his and Brin's role as supplying the "big picture"—and the big imperatives. In Page's view, Moore's law—devised by Gordon Moore, of Intel—is a good example of goal-driven innovation. "'We're going to double the performance' "—of transistors on a chip—" 'every eighteen months, and let's get organized to do it.' They spent billions of dollars doing that. If you didn't have Moore's Law, you wouldn't have that advancement." He added, "People think it's this wild statement about how the universe is, but it's actually a management innovation." The pressure to double performance helps assure it.

Nevertheless, even admirers criticize Google's organization. "While Google's success is hard to dispute, I don't think it is a particularly well-managed company," the Morgan Stanley analyst Mary Meeker says. In 1995, Meeker co-wrote an influential report on the emerging Internet economy and was dubbed Queen of the Internet. "Part of the problem was that Larry and Sergey didn't need to care about the numbers because growth was so steady and the company's competitive position was so strong they didn't feel they had to," she told me. Last year, a senior Google executive, who has since left the company, observed that until late that year Google never had a systematic process for developing an annual budget or allocating capital across businesses; instead, budgeting was merely a simple forecast for each of the products.

Meeker offers another caution: the power and the precariousness of a culture shaped by its founders. When founders stay involved in the enterprise—she cited Steve Jobs, of Apple, and Larry Ellison, of Oracle—they often maintain the core values and mission of the business. When Jobs and Ellison lost focus, they watched their companies suffer, but they also learned and grew from their early mistakes. Page and Brin have yet to "experience nasty failure," Meeker noted, and its concurrent ability to teach. Both have young families—Brin's son was born last December, and Page expects his first child before the end of the year—and incomprehensible wealth. Their hobbies—travel, photography, kite-surfing, and, in Page's case, learning to pilot a helicopter, and, in Brin's, building a kite-powered sailboat—take up increasing amounts of time.

Losing sight of priorities is not an uncommon problem in Silicon Valley. In 2006, a Yahoo senior vice-president wrote an internal memo that, when leaked, became known as the Peanut Butter Manifesto. It read:

> We lack a focused, cohesive vision for our company. We want to do everything and be everything—to everyone. . . . I've heard our strategy described as spreading peanut butter across the myriad opportunities that continue to evolve in the online world. The result: a thin layer of investment spread across everything we do and thus we focus on nothing in particular.

Google's dominance in search gives it more of an inherent focus than Yahoo has. At the same time, there is an unwillingness to choose among the company's approximately hundred and fifty products. "That can be stated as criticism, but it can also be stated as strategy," Schmidt said. "The goal of the company is customer satisfaction. You should think of Google as one product"—customer satisfaction. Still, a former Google executive observed, "Google could do fewer products and make fewer investments. They are doing too many and peanut-buttering everything." The former executive added, "They've never had to make hard choices. The company is so successful that it can do anything. They think they can make energy. Why? They have passion. That's what makes Google great. The question is, when things get hard, can they make tough decisions?"

So far, search is one of the only Google products to have turned a profit. Even YouTube, which in early 2008 accounted for one of every three videos viewed online, made no money. Its bandwidth and computer costs climbed, and it was beginning to pay for some content. Early this year, three senior Google executives said that YouTube lost money in 2008, and that these losses would grow in 2009, with revenues initially projected at about two hundred and fifty million dollars and losses totalling about five hundred million. Irwin Gotlieb, the C.E.O. of GroupM, the world's largest media-buying and investment firm, said, "They'll never make money on YouTube." Online display ads would annoy viewers, he said, and most advertisers sought predictably ad-friendly settings, something that a site dominated by user-generated content could not guarantee. But Schmidt was convinced that YouTube could be profitable, and last year he dispatched Google executives to YouTube's headquarters and directed them, in his words, to "start working on monetizing it."

"What Google should fear most of all is hubris," Yossi Vardi, an Israeli entrepreneur who funds start-ups and is a friend of Page and Brin, said last year. "If you are successful and young and everything plays in your direction, you feel you can do anything." A Microsoft executive observed, "People dislike Google for the same reason they disliked us: arrogance."

Of course, arrogance and rigor can seem like two sides of the same coin. Barry Diller, the C.E.O. of I.A.C., a diverse collection of Internet sites, including Ask.com and Match.com, recalled visiting Page and Brin in the early days of Google. Diller was disconcerted that Page, even as they talked, stared fixedly at the screen of his P.D.A. "It's one thing if you're in a room with twenty people and someone is using his P.D.A.," Diller recalled. "I said to Larry, 'Is this boring?'"

"No. I'm interested. I always do this," Page said.

"Well, you can't do this," Diller said. "Choose."

"I'll do this," Page said matter-of-factly, not lifting his eyes from his handheld device.

"So I talked to Sergey," Diller said. "I left thinking that more than most people they were wildly self-possessed." Later, Diller said, he came to think that what might be construed as rudeness was also purpose.

"Maybe the unseen hand of the market will change the diaper."

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By 2008, Google had had to cope with management upheaval, as senior executives, content with their new wealth or uncomfortable with the company's growing pains, began to leave. Among the most prominent was Sheryl Sandberg, the vice-president of global online sales and operations. Sandberg, who had previously worked as chief of staff for Treasury Secretary Lawrence Summers, under President Clinton, was an early hire, and helped build the AdWords and AdSense divisions. "The idea had many parents, but the execution was hers," Roger McNamee, a venture capitalist and investor in Facebook and Google, who is a close friend of Sandberg's, says. Her title did not reflect her importance, he added. She oversaw four thousand employees, and AdWords and AdSense, which yielded almost all the company's revenues. McNamee arranged a meeting between Sandberg and Mark Zuckerberg, the founder of Facebook. In March, 2008, Sandberg accepted the job of chief operating officer at Facebook. In an effort to keep her, Google offered her the C.F.O. job, but she declined. "She wanted to be a C.O.O.," Schmidt said. "Sheryl is a super executive. But we didn't want to have a C.O.O."

Sandberg's move drew attention to Facebook and highlighted some of the strains at Google. Facebook wasn't making money, but Google hadn't, either, in its first four years. Facebook had a hundred and twenty-four million unique visitors worldwide in May, 2008, according to ComScore, an increase of a hundred and sixty two per cent over the previous May. By August of this year, Facebook had almost four hundred million users. Coach Bill Campbell, asked whether Facebook was a threat, responded, "Anybody that gets a widely accepted user platform is to be worried about. It could be the start page for people who use the Web." And while Google can offer advertisers a broader base of data, social networks like Facebook, Twitter, and Ning retain more in-depth information about individuals and their community of friends. Who wouldn't prefer the recommendations of friends over Google's algorithms? Little wonder, as a senior Google executive confides, that Google tried, and failed, to acquire Twitter in the spring of 2009.

In response, Google could turn to the extensive consumer data that it collects each day. The more "personalized" this data, as Eric Schmidt said, the better the search answers. "When I decide to go to the movies, I'd like to rely on the recommendations of friends," Schmidt said. "How do we capture that? The more we know who you are, the more we can tailor the search results." Page and Brin often say that their ideal is to devise a program that provides a single perfect answer.

This preoccupation with mathematical efficiencies triggers various alarms. Nicholas Carr, in his book "The Big Switch," writes that Google would like to store as much information as possible about each individual—what might be referred to as "transparent personalization." This would allow Google to "choose which information to show you," reducing inefficiencies. "A company run by mathematicians and engineers, Google seems oblivious to the possible social costs of transparent personalization," Carr writes. "They impose homogeneity on the Internet's wild heterogeneity. As the tools and algorithms become more sophisticated and our online profiles more refined, the Internet will act increasingly as an incredibly sensitive feedback loop, constantly playing back to us, in amplified form, our existing preferences." Carr believes that people will narrow their frame of reference, gravitate toward those whose opinions they share, and perhaps be less willing to compromise, because the narrow information we receive will magnify our differences, making it harder to reach agreement.

And when a company retains so much data and also proclaims, "We are in the advertising business," as Eric Schmidt does, the fear of invasive data collecting increases. As Google's growth slows, it may become difficult for the company to resist advertisers who hope to reap the benefits of its mass of data. The question will certainly arise: Is the advertiser or the user Google's real customer? "I don't think I'm worried about that changing at Google," Brin said. "I see other Web sites making tradeoffs that I wouldn't." He was referring to Web sites that allow "pop-ups and pop-unders," or online publications that allow "eight columns of ads on the side and one teensy article."

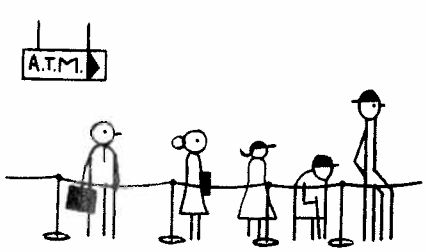
At the same time, Brin and Page can seem indifferent to users' anxieties. In 2007, at Google's annual Zeitgeist conference, a gathering of Google business partners, public intellectuals, traditional-media executives, and technologists, Brin declared that "the No. 1 privacy issue we deal with is that there is some information about someone on the Web . . . sometimes it's not true and people just publish stuff." The No. 2 privacy issue, he said, was "various things where people get their machine hijacked or somebody . . . breaks into various accounts of theirs." Concern about the information collected on cookies he dismissed as "sort of Big Brother-type fears"—in other words, paranoia. Page agreed: "Sergey is just saying there are practical privacy issues that are different from the ones debated."

Google was not immune to the economic downturn. At the end of 2008, Bill Campbell said that the "most significant thing that happened at Google" in the previous six months was "the realization that there was a flattening of the business." He noted that Schmidt instituted a weekly review of "expenses relative to revenue." Last year, the now departed senior Google executive credited the new senior vice-president and chief financial officer, Patrick Pichette, "for forcing the company to focus on priorities" and "allocate capital based on the relative returns of different projects." The founders' push to expand into a multitude of businesses, after being subjected to a budget analysis, was scaled back.

Pichette—who, at Bell Canada, that country's foremost telephone company, had slashed two billion dollars from operating costs—started at Google in 2008. He disagrees with the idea that his timing might not have been ideal. "When everything runs well and works perfectly, at least according to financial results, you don't take the time to ask tougher questions, because you don't have to," he said. "When you're growing so fast that you're running out of desks, if you talked to people about waste and inefficiencies they wouldn't have listened to you. It would have been the wrong question to ask at that time."

Google hired only ninety-nine new employees in the fourth quarter of 2008, fewer than it added in a week at the start of the year, bringing its full-time employment total at the end of 2008 to 20,222; this number soon dipped below twenty thousand. The company laid off some of its ten thousand contract workers and about four hundred employees, including the two dozen full-time employees at its Phoenix office, which was eliminated. After Pichette discovered that in some cafeterias a third of the food was being thrown out at the end of each day, cafeteria hours were reduced and menus pared. Google also shut down a few sites, including Lively, its virtual world. Although Tim Armstrong, then Google's president of advertising and commerce in North America, boasted in September, 2008, that Google Print Ads had "seventy per cent of newspapers in the U.S. as clients," the company found it difficult to provide its clients with a measurable return on their ads; as a result, the venture, according to an advertising executive, wound up selling mostly hard-to-sell or what are called "remnant" ads, and often at below-market rates. Just months after Armstrong's announcement, the program was ended. Google Audio Ads was soon dramatically scaled back as well, and the company cut two hundred sales and marketing jobs.

As Google learned to say no, there was frustration among employees. The founders had sold Google's mission as making the world a better place, not just making money. At one of the companywide meetings that Page and Brin usually preside over each Friday afternoon, Brin read aloud a text message from an employee in London concerning the closing of the Phoenix office: "What of people in Phoenix who can't relocate? If we don't take care of them, shame on us as a company!" Brin allowed Alan Eustace, senior vice-president of engineering and research, to answer. Google, Eustace said, would strive to find openings for those wishing to relocate; for the others, Phoenix was "a robust area for jobs." Brin and Page said nothing, but they seemed uneasy. Associates said that the two were increasingly distressed by Google employees' sense of entitlement.



Whatever obstacles arise, there's little doubt that Google will remain a dominant force. While rivals like Steve Ballmer, the C.E.O. of Microsoft, may label Google "a one-trick pony," Schmidt has a ready rejoinder: "I like the trick!" Google's search engine was responsible for ninety-eight per cent of the company's twenty-two billion dollars in revenues and $4.2 billion in net profits last year, and Google today accounts for almost seventy per cent of the world's Internet searches. Schmidt added, "The Google model is one-trick to the extent that you believe targeted advertising is one trick." And if Google can find a way to sell advertising on YouTube, on mobile phones, and through its cloud-computing programs, Schmidt says, Google could become the first media company to generate a hundred billion dollars in revenues, more than twice as much as any of the world's biggest media companies: Time Warner, the Walt Disney Company, and News Corp.

Google's achievement of this goal depends in no small measure on the restless, we-are-never-satisfied energy of its founders and its engineers. Al Gore recounted a conversation he had with Brin and Page several years ago in the conference room near their office. Gore raised specific concerns about aspects of search quality. "They had to go to another meeting," Gore recalled, "and said, 'If you can stay, Al, we'd like to bring in the search-quality researchers and specialists in charge of this part of the business.' Ten of them came in. Larry and Sergey left. I spent another three hours. And then, when it was over, I gave Larry and Sergey an oral report."

Some weeks later, Gore said, laughing, "I went up to their office and found that all ten of these people had been moved in. All ten of them!" He described how Page and Brin had had to cram twelve computer monitors into their office, and "move around some of their toys—a remote-control helicopter, flying messenger boards . . ." The researchers and specialists stayed—until Brin and Page "satisfied themselves that they had an ongoing system for maintaining hyper-vigilance." He added, "I defy you to think of any other executives in the world who would bring a team like that into their personal office for weeks on end."

In many ways, Google remains a company apart. Although earlier this year it experienced its first quarter-to-quarter revenue decline since going public, its net income rose nine per cent in the first quarter and eighteen per cent in the sec-

"We need a better piling system."

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ond; new cost controls eliminated more than two hundred million dollars in expenses, and its stock price approached five hundred dollars per share. One analyst projected that its revenues for 2009 would drop by thirty-one per cent over last year, but would still grow by four per cent. Google has continued its investment spending on research and development and on its data centers, into which it put a total of $2.8 billion in 2008. While much of the Valley has been scaling back, Google decided to use a hundred million dollars to start a venture-capital fund, Google Ventures, to invest in start-ups. And the pressure that Schmidt applied to YouTube is beginning to pay off. Last April, YouTube made ad-sharing deals with the Universal Music Group, with several Hollywood studios, and with CBS to produce professional content for the site. The senior Google executive, who is familiar with the numbers, said in July that YouTube losses for the year would probably shrink from five hundred million dollars to between fifty million and two hundred million.

A large part of the company's stability comes from the unusual closeness between Page and Brin. Susan Wojcicki, in whose garage the company got its start, and who is now an influential Google vice-president, believes that they give each other strength "to be different. They think alike. They have a shared vision. So when things get tough they are able to support each other in being different."

"We agree eighty to ninety per cent of the time," Brin says of his relationship with Page. (Page says that it's more like two-thirds of the time, but that usually only small things cause disagreement.) "If we both feel the same way, we're probably right," Page said to me. "If we don't agree, it's probably a toss-up. If we both agree and nobody else agrees with us, we assume we're right!" He added, "It sounds like a tough thing to say, but that's sort of what you need to do to make progress."

Terry Winograd, a professor of computer science who was Larry Page's graduate adviser and mentor at Stanford, says that Page and Brin "are utopians," who believe deeply that "if people have better information they will live better lives. They are technological optimists in the sense of saying, 'Let's produce this technology and things will work out.'" For the first four years of Google's life, they resisted advertising, despite the urging of the two venture capitalists, John Doerr and Michael Moritz, who had invested in Google and were upset that it was bleeding money. Brin and Page insisted that traditional banner ads would offend their users. They believed that if they built search traffic they would eventually engineer a way to make money; in the meantime, they hoped to improve people's lives through information. In describing a trip that he and his wife, Anne Wojcicki (Susan Wojcicki's sister), made to Africa, Brin seemed to be imagining a future in which knowledge transcended the limitations of the marketplace. "One day in Zambia the driver was telling me how he was trying to get all the parts to a computer," Brin said. The driver couldn't locate some parts he needed, and those he could find were five times as expensive as they were in the U.S. "He was trying to get a DVD-ROM drive. I said, 'In the U.S., they cost about thirty dollars.' He said, 'What?' He was about to spend two hundred dollars on a DVD-ROM. Imagine if there was good-quality information there. Imagine if there was an active retail market. He would have been able to get that DVD-ROM drive for forty bucks. He'd be more efficient at his job, and it would help communities as a whole." He added, "I certainly believe that information and commerce create value, rather than displace it."

It's clear that Google, with its democratization of information and impact on other companies, has changed the landscape of American business. "Fifteen to twenty years ago, entrepreneurs would have said, 'I want to be the next Bill Gates and Microsoft,'" Michael Moritz, who, along with his company, made billions by investing in Google, said to me. "Today people's great ambition is to be the next Google. They went from zero to twenty billion dollars in revenues in four hundred weeks! Google has become the front door to the world for many people, the place they go for information. It is probably the most visible service concocted by mankind." He paused. "Was Henry Ford more recognized in 1925? I doubt it." ♦