

# Google Gets Ready to Rumble With Microsoft

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Tim Bower

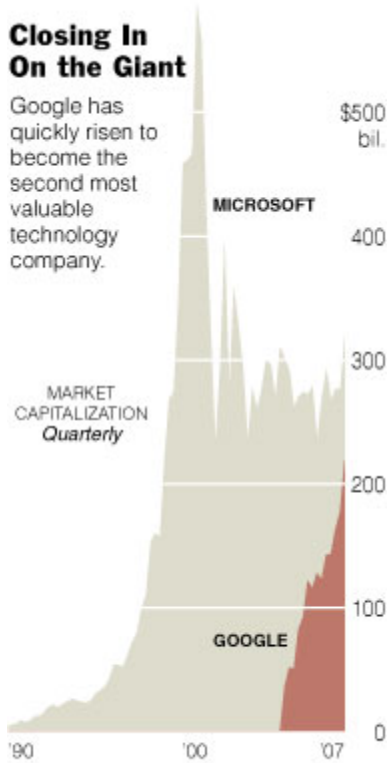
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## Closing In On the Giant

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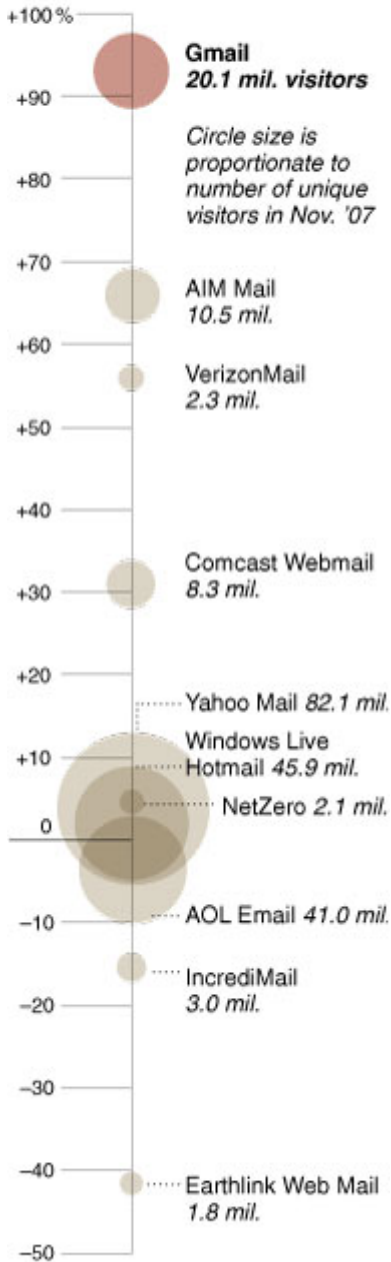
Lou Dematteis/Microsoft, via Reuters

Jeff Raikes of Microsoft, right, with Bill Gates, says Google's initiative is focused "on trying to undermine Microsoft."

## Growth Spurt

Gmail has been growing faster than any other leading e-mail site, nearly doubling its visitors in a single year.

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Google's chief executive, Eric Schmidt, says 90 percent of computing tasks can migrate online.



Jim Wilson/The New York Times

About 2,000 companies join Google Apps each working day, says Dave Girouard.

A CEREBRAL computer-scientist-turned-executive, [Eric E. Schmidt](#) has spent much of his career competing uphill against [Microsoft](#), quietly watching it outflank, outmaneuver or simply outgun most of its rivals.

At [Sun Microsystems](#), where he was chief technology officer, Mr. Schmidt looked on as [Scott G. McNealy](#), the company's chairman, railed against Microsoft and its leaders, [Steven A. Ballmer](#) and [Bill Gates](#), as "Ballmer and Butthead." During a four-year stint as chief executive of [Novell](#), Mr. Schmidt routinely opined that it was folly for any Microsoft rival to "moon the giant," as he put it; all that would do, he argued, was incite Microsoft's wrath.

Then, six years ago, Mr. Schmidt snared the C.E.O. spot at [Google](#) and today finds himself at the helm of one of computing's most inventive and formidable players, the

runaway leader in Internet search and online advertising. With its ample resources and eye for new markets, Google has begun offering online products that strike at the core of Microsoft's financial might: popular computing tools like word processing applications and spreadsheets.

The growing confrontation between Google and Microsoft promises to be an epic business battle. It is likely to shape the prosperity and progress of both companies, and also inform how consumers and corporations work, shop, communicate and go about their digital lives. Google sees all of this happening on remote servers in faraway data centers, accessible over the Web by an array of wired and wireless devices — a setup known as cloud computing. Microsoft sees a Web future as well, but one whose center of gravity remains firmly tethered to its desktop PC software. Therein lies the conflict.

But in a lengthy interview at Google's campus here, Mr. Schmidt, 52, follows past practices. He soft-pedals. As he coyly describes a move that most of the industry views as Google's assault on Microsoft, he does his best to say that it is something entirely other than that.

No, he says, there was no thought of a Microsoft takedown when, earlier this year, Google introduced a package of online software offerings, called Google Apps, that includes e-mail, instant messaging, calendars, word processing and spreadsheets. They are simpler versions of the pricey programs that make up Microsoft's lucrative Office business, and Google is offering them free to consumers.

Still, Google Apps aren't anything other than a natural step in Google's march to deliver more computing capability to users over the Internet, Mr. Schmidt says.

"For most people," he says, "computers are complex and unreliable," given to crashing and afflicted with viruses. If Google can deliver computing services over the Web, then "it will be a real improvement in people's lives," he says.

To explain, Mr. Schmidt steps up to a white board. He draws a rectangle and rattles off a list of things that can be done in the Web-based cloud, and he notes that this list is expanding as Internet connection speeds become faster and Internet software improves. In a sliver of the rectangle, about 10 percent, he marks off what can't be done in the cloud, like high-end graphics processing. So, in Google's thinking, will 90 percent of computing eventually reside in the cloud?

"In our view, yes," Mr. Schmidt says. "It's a 90-10 thing." Inside the cloud resides "almost everything you do in a company, almost everything a knowledge worker does."

Mr. Schmidt clearly believes that the arcs of technology and history are in Google's corner, no matter how hard he tries to avoid mooning the giant. Microsoft, of course, isn't planning to merely stand still. It has spent billions trying to catch Google in search and Web advertising, so far without success. And the companies are also fighting it out in promising new fields as varied as Web maps, online video and cellphone software.

“The fundamental Google model is to try to change all the rules of the software world,” says David B. Yoffie, a professor at the [Harvard](#) Business School. If Google succeeds, Mr. Yoffie says, “a lot of the value that Microsoft provides today is potentially obsolete.”

At Microsoft, Mr. Schmidt’s remarks are fighting words. Traditional software installed on personal computers is where Microsoft makes its living, and its executives see the prospect of 90 percent of computing tasks migrating to the Web-based cloud as a fantasy.

“It’s, of course, totally inaccurate compared with where the market is today and where the market is headed,” says Jeff Raikes, president of Microsoft’s business division, which includes the Office products.

TO Mr. Raikes, the company’s third-longest-serving executive, after Mr. Gates and Mr. Ballmer, the Google challenge is an attack on Microsoft that is both misguided and arrogant. “The focus is on competitive self-interest; it’s on trying to undermine Microsoft, rather than what customers want to do,” he says.

Microsoft, Mr. Raikes notes, has spent years and billions of dollars in product development and customer research, studying in minute detail how individual workers and companies use software. What they want, he says, is the desktop programs and features of Microsoft Office, and the proof is in the marketplace. “I mean, we have more than 500 million people who are using Microsoft Office tools,” he says.

Indeed, Microsoft is the wealthy incumbent with a huge lead in the market for personal productivity software, with a share of more than 90 percent. But the Google challenge, industry analysts say, is not so much a head-to-head confrontation with Microsoft in its desktop stronghold as it is a long-term shift toward Web software, which operates with different principles and economics.

Analysts note that Google is a different competitor from others Microsoft has dispatched in recent years: it is bigger, faster-growing, loaded with cash and a magnet for talent. And the technology of the Google cloud opens doors. Its vast data centers are designed by Google engineers for efficiency, speed and low cost, giving the company an edge in computing firepower and allowing it to add offerings inexpensively.

“Once you have those data centers, you want to go out and develop complementary products and services,” says Hal R. Varian, a former professor at the University of California, Berkeley, who is Google’s chief economist. They can be offered free or at minimal cost to users, he says, because they bring more traffic to Google, generating more search and ad revenue.

Google, it seems, has a promising opening against Microsoft. But tilting at a giant and taking down a giant are very different things.

Microsoft, of course, isn’t standing still. Just as it squelched the first Internet challenge in the 1990s by linking Web browsing software to its mainstay products, it is now adopting

a similar strategy for cloud computing by adding Internet features to its offerings. It is moving cautiously on this front, however, to avoid eroding the profitability of its desktop franchise.

More than any other Google foray, providing Web-based software to workers for communication, collaboration and documents promises to be the acid test of how far Google can go beyond Internet search. Will two of its formulas — its distinctive, hurry-up model of building products and services, and its rapid-fire approach to recruiting and innovation — succeed in new arenas?

Google's quicksilver corporate culture can be jarring for some employees, even for Mr. Schmidt. He recalls that shortly after joining the company and its young founders, [Sergey Brin](#) and [Larry Page](#), he was frustrated that people were answering e-mail on their laptops at meetings while he was speaking.

"I've given up" trying to change such behavior, he says. "They have to answer their e-mail. Velocity matters."

VELOCITY does, indeed, matter, and Google deploys it to great effect. Conventional software is typically built, tested and shipped in two- or three-year product cycles. Inside Google, Mr. Schmidt says, there are no two-year plans. Its product road maps look ahead only four or five months at most. And, Mr. Schmidt says, the only plans "anybody believes in go through the end of this quarter."

Google maintains that pace courtesy of the cloud. With a vast majority of its products Web-based, it doesn't wait to ship discs or load programs onto personal computers. Inside the company, late stages of product development are sometimes punctuated by 24-to-48-hour marathon programming sessions known as "hack-a-thons." The company sometimes invites outside engineers to these sessions to encourage independent software developers to use Google technologies as platforms for their own products.

New features and improvements are made and tested on Google's computers and constantly sprinkled into the services users tap into online. In the last two months alone, eight new features or improvements have been added to Google's e-mail system, Gmail, including a tweak to improve the processing speed and code to simplify the handling of e-mail on mobile phones. A similar number of enhancements have been made in the last two months to Google's online spreadsheet, word processing and presentation software.

Early this month, Google released new cellphone software, with the code-name Grand Prix. A project that took just six weeks to complete, Grand Prix allows for fast and easy access to Google services like search, Gmail and calendars through a stripped-down mobile phone browser. (For now, it is tailored for [iPhone](#) browsers, but the plan is to make it work on other mobile browsers as well.)

Grand Prix was born when a Google engineer, tinkering on his own one weekend, came up with prototype code and e-mailed it to Vic Gundotra, a Google executive who

oversees mobile products. Mr. Gundotra then showed the prototype to Mr. Schmidt, who in turn mentioned it to Mr. Brin. In about an hour, Mr. Brin came to look at the prototype.

“Sergey was really supportive,” recalls Mr. Gundotra, saying that Mr. Brin was most intrigued by the “engineering tricks” employed. After that, Mr. Gundotra posted a message on Google’s internal network, asking employees who owned iPhones to test the prototype. Such peer review is common at Google, which has an engineering culture in which a favorite mantra is “nothing speaks louder than code.”

As co-workers dug in, testing Grand Prix’s performance speed, memory use and other features, “the feedback started pouring in,” Mr. Gundotra recalls. The comments amounted to a thumbs-up, and after a few weeks of fine-tuning and fixing bugs, Grand Prix was released. In the brief development, there were no formal product reviews or formal approval processes.

Mr. Gundotra joined Google in July, after 15 years at Microsoft. He says that he always considered Microsoft to be the epicenter of technological development, but that the rise of cloud computing forced him to reconsider.

“It became obvious that Google was the place where I could have the biggest impact,” he says. “For guys like me, who have a love affair with software, being able to ship a product in weeks — that’s an irresistible draw.”

Another draw is Google’s embrace of experimentation and open-ended job assignments. Recent college graduates are routinely offered jobs at Google without being told what they will be doing. The company does this partly to keep corporate secrets locked up, but often it also doesn’t know what new hires will be doing.

Christophe Bisciglia, a 27-year-old engineer, qualifies as a seasoned veteran at Google, having worked there for four years. Mr. Bisciglia has done a lot of college recruiting in the last two years and has interviewed more than 100 candidates.

“We look for smart generalists, who we can be confident can fulfill any need we have,” he explains. “We hire someone, and who knows what need we’ll have when that person shows up six months later? We move so fast.”

MR. SCHMIDT readily concedes that cloud computing won’t happen overnight. Big companies change habits slowly, as do older consumers. Clever software is needed — and under development, he says — to overcome other shortcomings like the “airplane issue,” or how users can keep working when they find themselves unable to get online.

Yet small and midsize companies, as well as universities and individuals — in other words, a majority of computer users — could shift toward Web-based cloud computing fairly quickly, Mr. Schmidt contends. Small businesses, he says, could greatly reduce their costs and technology headaches by adopting the Web offerings now available from Google and others.

“It makes no sense to run your own computers if you are a small business starting up,” he says. “You’d be crazy to buy packaged software.”

Still, in order to succeed, Google needs to win a broad array of converts, including corporations. That effort is led by Dave Girouard, the general manager of Google’s enterprise business, who joined the company in 2004, shortly after it decided to move beyond its search business and consumer focus.

Gmail, introduced just after Mr. Girouard arrived, illustrates Google’s strategic evolution as well as its increased willingness to take on Microsoft.

Paul Buchheit, a Google engineer, started on what became Gmail as far back as 2001. At the time, there was resistance inside the company to the project. Back then, Google was providing search service for [Yahoo](#), a useful source of revenue for the young start-up, and Yahoo had its own Web e-mail system. Another concern was straying into Microsoft’s territory.

“Definitely one of the reasons people thought it was a bad idea is that it could incite Microsoft to destroy Google,” recalled Mr. Buchheit, who left Google last year and now works for a start-up.

Gmail, a full-fledged Web offering built by Google, took time to develop. Features had to be added and tested, and hundreds of Google engineers had to use it and approve. The company’s arsenal of data centers — highly efficient and designed by Google engineers — had to be equipped to offer ample free storage for users.

And as Google grew in size, profitability and stature during those years, riling a giant was less of a worry. By the time Gmail was ready, Mr. Buchheit says, “Google was much more established, and they were more comfortable competing with Microsoft.”

In the corporate market, Google sees itself as a powerful agent of change, breaking down old barriers. “For the last 30 or 40 years, there has been this huge Chinese wall between business and consumer technology,” Mr. Girouard says. “That was historical and no longer valid.”

Google’s push into the business market began in earnest only this year, but Mr. Girouard is already encouraged by the results. About 2,000 companies are signing up for Google Apps every working day, he said. Most are trying the free version. That’s fine, he says, because those users also generate more search-related advertising revenue for Google. After a 60-day free trial, companies with more than 50 users are beginning to sign up for the Google Apps Premier Edition at a charge of \$50 a year per user, which includes customer support.

These applications are minimal, task-oriented tools that lack many of the features in Microsoft Office, but, Google managers say, most people use only a fraction of those fancier features anyway.

“If you’re creating a complex document like an annual report, you want Word, and if you’re making a sophisticated financial model, you want Excel,” Mr. Girouard notes. “That’s what the Microsoft products are great at. But less and less work is like that.”

Google’s entry, he says, has ignited interest in bringing cloud computing into corporations. Senior technology managers of large corporations, he says, are “talking to us every day of the week about where Google is going and what we can do.” A few large companies, notably [General Electric](#) and [Procter & Gamble](#), have said publicly that they are at least trying out Google Apps.

Next year, Mr. Girouard predicts, “a lot of big companies” will be adopting Google Apps for tens of thousands of workers each.

Microsoft dismisses Google’s optimism as wishful thinking. Microsoft’s competitive tracking of the corporate market, says Mr. Raikes, the leader of the Office business, finds nothing like the momentum for Google that Mr. Girouard portrays. “It is not in any way, shape or form close to what he is suggesting,” Mr. Raikes says.

COUNTLESS decisions by corporate technology managers, office workers, university students and rank-and-file computer users of all kinds will ultimately determine Google’s success. How easy and inexpensive will it be to do e-mail, word processing, spreadsheets and team projects on Web software? Will high-speed network connections soon become as ubiquitous and reliable as Google seems to assume? Will companies, universities and individuals trust Google to hold corporate and personal information safely?

At the corporate level, inexpensive, low-stress e-mail is the initial lure of Google Apps. About 160 employees of BankFirst Financial Services, a small bank in Macon, Miss., have been using Gmail for about two months, happily substituting it for an older system that had been overwhelmed by heavy traffic and spam. Bank workers are also using Google Apps’ instant messaging and calendar features to get immediate answers to customer questions and to set up meetings online.

But BankFirst isn’t using Google’s online word processing, presentation and spreadsheets, a package known as Google Docs. Like so many other companies, it still relies on the Microsoft Word and Excel programs for those tasks. “I really don’t see us migrating from that,” says Josh Hailey, the bank’s computer network manager.

According to [Compete.com](#), a research firm, Google Docs is gaining popularity. It had 1.6 million users in November, seven times as many as a year earlier. That’s a nice lift, but the Microsoft Office suite, containing programs like Word and Excel, is nearly two decades old and runs on some 500 million PCs. The reality is that even if Mr. Schmidt and Google are right about the potential of cloud computing in the workplace, Microsoft is still seen inside most companies as the safe choice.

Another crucial battleground for both companies is the university market, where the stakes are less about making money and more about winning the loyalty of students who

might become valuable customers later in life. Google and Microsoft each offer free Web-based e-mail to universities, for example.

When [Arizona State University](#), one of the nation's largest with 65,000 students, decided last year to choose a new e-mail system, it had concerns about the security and privacy of student information and messages stored on Google servers. "It's like the virtue of banks over mattresses," explains Adrian Sannier, the university's chief technology officer. "You feel like keeping the money in your mattress and defending it with your own gun is the right thing to do." But Arizona State decided that Google, with all its expertise, could do a better job than the university's own technology department.

Microsoft, Mr. Sannier notes, also offered free Web e-mail to Arizona State, but for an online service the university decided Google was the smarter choice because the company is totally committed to Web software. "We saw Microsoft as a company that is divided on the issue of cloud computing," Mr. Sannier says.

The university's switch to Google-hosted e-mail has gone smoothly, and Mr. Sannier estimates that the school is saving \$500,000 a year by not handling e-mail itself. Students, he added, also get more than e-mail. They have access to Google Apps, and thousands of them, he says, now use Google's Web software for calendars, word processing and spreadsheets.

To be sure, Microsoft is not ceding cloud computing to Google. It is investing heavily in huge data centers and Web software. Inside Microsoft, there are engineers and product managers who sound a lot like Googlers.

Ellie Powers-Boyle, 25, a graduate of [M.I.T.](#), works on Microsoft's Web e-mail products. In the last three years, she says, there have been a dozen significant upgrades of the Web e-mail product, and she has worked on three or four new features each time. "We iterate quickly," she says. "For someone of my generation, the whole idea of waiting years to see if you made the right product makes no sense."

The challenge for Microsoft is not the ability to do much of what Google does. Instead, the company faces a business quandary. The Microsoft approach is largely to try to link the Web to its desktop business — "software plus Internet services," in its formulation. It will embrace the Web, while striving to maintain the revenue and profits from its desktop software businesses, the corporate gold mine. That is a smart strategy for Microsoft and its shareholders for now, but it may not be sustainable.

Assuming that competition heats up, Office may continue to be an outstanding product, but Microsoft may not be able to charge as much for it — just as low-cost personal computers eventually undercut the mainframe business, and traditional publishing and media companies have grappled with Internet distribution. The traditional products remain popular, but they become much less profitable.

FOR its part, Google faces its own set of challenges: competition from Microsoft and from Web-based productivity software being offered by start-ups like Zoho and Transmedia as well as more established players like Yahoo. A recent report by the [Burton Group](#), a technology research firm, concluded that it was “unclear at this point whether Google will be able to capitalize on the trends that it’s accelerating.”

Is Google “really committed to the productivity of information workers?” asks Chris Capossela, a vice president in Microsoft’s Office group. “Boy, there’s no question that we are. No customer on the planet thinks about Microsoft without thinking about Office. It’s part of the DNA of Microsoft.

“Needless to say, we are going to do everything we can to remain the leader in this space,” he adds. “And whoever comes our way, we’ll certainly be waiting for them.”