Google's 'search czar' in touch with world's curiosity

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Like few other people on the planet, Google's Ben Gomes knows what interests the world.

Gomes is the engineer in charge of improving what you see when you Google. From one of the most important but little-known offices in the Googleplex in Mountain View, Gomes is responsible for shaping the automatic suggestions users get as they begin typing a query, and the few lines of text and links they get back, which Google calls "the snippet." He sees the digital torrent of Google's 1 billion daily search queries.

The interaction between user and search engine defines what Google is all about, and company co-founders Larry Page and Sergey Brin have put Gomes in charge of improving that dialogue.

"I think of Ben as our diplomat," said Marissa Mayer, Google's vice president of search products and user experience. "It's Google; it's search. There's a lot of big personalities; there's a lot of opinions, and Ben is the reasonable one that can help build the bridges. When we look back, there was a point where Larry and Sergey really felt like we needed to name a search czar. ... And there was only one natural choice -- this was back in 2002 -- and that was Ben."

Despite the wave of Google products like Gmail, Android smart phones and digital maps, Google's touchstone remains search, which according to estimates by the research firm IDC accounted for 92.5 percent of Google's $6.8 billion in revenue in the second quarter. The history of

Google search can be told through the evolution of technical features like the snippet, but it is also the story of the dogged behind-the-scenes work of engineers like Gomes, who is little known outside the Googleplex.

Gomes shares an office with three key search engineers, including one he has known since they were 13-year-old friends in Bangalore, India -- Krishna Bharat, the inventor of Google News.

In Bangalore, Gomes and Bharat were similarly turned toward science and math by one committed high school chemistry teacher. As teenagers in the 1980s, they competed to teach themselves programming on a ZX Spectrum, a boxy little British computer similar in appearance to a Commodore 64.

"We were trying to write code without any programming information, just trying to guess," said Gomes, now 41. Trying to teach himself electronics as a seventh-grader, the only book Gomes could find was a college-level textbook. "I stared at that book for weeks, hoping that somehow I would understand something there. But it was way beyond me."

Growing up in Bangalore, Gomes' main access to information was the two books a month he and his mother, a schoolteacher, could each borrow from the British Consul library.

He was the first in his family to attend college. When Gomes talks about his passion for working on products that can open the world's store of knowledge, even to poor boys and girls in India, it's easy to hear the echo of a kid growing up in a poor nation, trying to teach himself computer programming without a manual -- or a Google -- to explain it.

Because of Google's tremendous growth since 2002, the title "search

czar" is no longer relevant to how the company manages search. What Gomes does now is oversee what computer scientists call "UI," or user interface. In refining snippets and tracking user habits, Gomes and the teams of search engineers oversee what could be the world's largest psychology experiment.

For a large share of its traffic, Google is constantly experimenting with small parts of how it displays search results to see whether those tweaks improve people's experience. To speed users to their results a few milliseconds faster, for example, Google does lab studies to track how users' eyes travel on a page, so it can place information in the best spot on the page.

"That part of it, how the brain works, and how the conscious and subconscious part fit together, and help us build a better product, I find really fascinating," said Gomes, whose doctoral thesis was on modeling computers to mimic human thought.

Google's trademarked PageRank system, first developed by Page and Brin at Stanford, generally gets the credit for making Google a search juggernaut. PageRank's innovation was to index and rank search results based on the number of other sites that linked to a website.

But Gomes says there's another half of Google search that has been given too little credit. That process is based on a long-existing concept in computer science called "Keyword In Context," which automatically creates a few lines of text that shows users the context of the keyword they Googled.

"Every other search engine at the time gave you the first two lines on the page. What Google did was it showed you the lines on the page that were relevant to your query," Gomes said. "And you might think this is a small change, but it is so much harder to do."

Not only does Google have to find the most relevant Web pages from a query, but it must then search within those pages and automatically build a custom snippet that shows how the keyword occurred on the page.

Gomes and Bharat were involved in two of the first three patents assigned to Google. But they share a modest office, indistinguishable from surrounding offices, with two other senior Google search engineers -- Matt Cutts, who heads Google's anti-spam efforts; and Amit Singhal, who rewrote Google's search algorithm in 2001 to allow it to handle hundreds of millions of queries a day, and who remains in charge of the algorithm -- Google's crown jewels.

Singhal, one of four among Google's 22,000-person work force who carries the title Google Fellow, scoffs at the suggestion that it is one of the most important rooms at Google. But it would be hard to find a more crucial room in the Googleplex.

It doesn't look different from any other Silicon Valley office -- a little cluttered, photos of kids and relatives, a small telescope that points toward the busts of explorers and scientists in Google's courtyard below.

"I'm always honored to be in that office," said Cutts, a native of Kentucky. "The guy who invented Google News is right behind me, and I can turn around and ask him questions, and Amit basically leads all the search ranking efforts, and Ben is all the front end and the UI and the things that people actually see, and I'm just sort of like, 'Wow.' "

Cutts is not exactly a laggard. Because of Google's dominant market position, he is perceived by many as the person with the most power over the industry of search engine marketing (SEM) -- the Internet businesses that specialize in manipulating search keywords and Web links so their clients rank higher in Google results. Cutts holds so much sway that at the Search Engine Strategies conference attended by 6,000 people in San

Francisco last week, an SEM company from Nashville, Tenn., distributed foam stress relief balls that had only Cutts' face on them. No identifying caption was needed.

Gomes, Bharat, Singhal and Cutts have all been with Google for roughly a decade. Mayer, who joined Google in 1999 just a few months earlier, says they are among Google's early core who helped create the corporate culture that employees sum up with the word "Googley."

The four engineers, who describe themselves as friends, say they share an office because it's better for brainstorming -- and vigorous debates about each other's projects. That, they said, is definitely Googley.

Bharat and Gomes found their way from Bangalore to Silicon Valley separately. After earning his doctorate at University of California-Berkeley, Gomes was working at Sun Microsystems in 1999, trying to make its Java software run faster. Bharat tracked down his boyhood friend and told him about a startup he'd joined in Mountain View that Bharat believed would become the world's top search engine.

Gomes, who lives in Palo Alto, Calif., hasn't completely embraced the California outdoor lifestyle of running and rock climbing. "I don't like sweating," he said. Instead, he's a lover of reading, cinema and debating politics, and he believes writing computer code is not all that different from creating art.

"You see something coming alive in front of you, and it really is alive -- it does things," Gomes said of programming. "People working on computers often are characterized in a certain way, and I don't think that captures that joy of creation."

This past Christmas, Gomes' girlfriend surprised him with a gift she'd found on eBay -- a ZX Spectrum.

"It was," he said, "the most awesome present."