

Economists round out tech giants' workforces

December 16 2010, By Mike Swift

In addition to software engineers, computer scientists and web designers, Silicon Valley giants ranging from Yahoo to Google to eBay are scrambling to hire economists, a little-known and increasingly valuable weapon as these companies create new businesses and fine-tune existing ones.

In the wake of the example of University of California-Berkeley economist Hal Varian, who helped [Google](#) perfect the auction process behind its multibillion-dollar search advertising revenue stream, big Internet companies are competing to woo [economists](#) away from universities, or work with them on specific projects.

Yahoo has been among the most aggressive, but [eBay](#), Amazon.com, [Facebook](#) and other companies also are recruiting practitioners of what used to be called "the dismal science." Illustrating how crucial companies think those skills are, [Microsoft CEO](#) Steve Ballmer personally recruited economist Susan Athey from Harvard.

"Other companies have recognized that economists really have a lot to contribute," said Varian, who joined Google full-time in 2007 after working as a consultant for the search giant since 2002. Google has 10 economists, statisticians and other quantitative analysts on Varian's staff, and is looking to hire more.

Internet companies see the economists as critical in their efforts to fine-tune advertising networks that serve millions of online ad impressions a

day, and to better understand e-commerce platforms with tens of millions of buyers and sellers, as well as to determine if new businesses or new approaches will be effective.

For instance, Yahoo's economists have been searching out a holy grail of advertising - tangible evidence that online ads actually make people buy stuff in a real-world store. And Google needs to understand non-Internet markets like transportation and retail as it tries to move into the sale of airline tickets and local ads. "To match up buyers and sellers, you need to understand where the buyers are coming from and the sellers are working from," Varian said.

Economists have "the ability to look at past data and predict what would happen if you change the game," said Athey, who has returned to Harvard but continues to work with Microsoft as a consultant. With Internet companies inventing new businesses and impinging on more existing markets, economists "can think rigorously and conceptualize new problems," she said.

Yahoo chief economist Preston McAfee, who joined the Sunnyvale, Calif., company from the California Institute of Technology in 2007, has long believed that economics could be a practical discipline, like engineering. McAfee now heads a team of seven Ph.D. economists and five game theory/algorithmic scientists, who work with software engineers to create products that aren't just smart, but are also savvy.

"Engineers are pretty nice people, and they assume the rest of the world is pretty nice like them," said McAfee. "But that's not the way most people are. And if you build (software) assuming that's the way people are, it will get heavily spammed. So one of the roles that economics plays at Yahoo and other tech companies is to be just a little more suspicious about human nature."

Yahoo also wants to prove to big brand advertisers such as Procter & Gamble that its display advertising actually works. Yahoo economist David Reiley recently studied more than 1 million Yahoo users who, matched by their e-mail addresses, were also shoppers at a major national retailer. Online display advertising increased total revenues by about 5 percent for the retailer among shoppers exposed to an online ad.

Eric Brill, eBay's vice president of research, said the company's executives are excited about how economists can help untangle the intricacies of its vast online market.

"What a lot of us are realizing more and more is that the ecosystem is much, much more complicated than what we had thought," Brill said.

Varian was dean of the School of Information Management and Systems at Berkeley in the mid-1990s when he encountered a former Berkeley Ph.D. named Eric Schmidt, then an executive at Sun Microsystems. In 2002, Schmidt invited Varian, who was stepping down as dean, to do a temporary tour at a start-up he had joined as CEO. It was called Google.

One of Varian's first jobs was to polish Google's nascent search advertising, in which advertisers bid for keywords that bring up their text ad when someone uses Google to search for that term. Search advertising has since transformed Google into a corporate colossus.

"Eric Schmidt said, 'Take a look at this ad auction,' " said Varian, "and I sat down to try to model the behavior of that auction, and wrote the first model ever of what I call a position auction.

"At that time, I talked to my fellow economists and said, 'You know, there really are some interesting things going on here,' and they would say, 'Is that economics?' And now, of course, years later, people say, 'Wow, how did you know that was going to be so big?' And the answer

is, I didn't. I just thought it was really interesting and it turned out to be big."

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