



The Race to Improve Search Engines -- and Their Business Models

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Consumers these days swim in an alphabet soup of digital devices -- PCs and PDAs, DVRs and iPods, MP3 and DVD players. And each device delivers a host of programming that is not easily enjoyed on the others. Try reading a blog on your iPod or watching *The Sopranos* on your Blackberry.

This diversity means that market power will continue to reside with firms that can help consumers find and organize content for their preferred device -- in other words, search engines, according to panelists at the 2006 Wharton Technology Conference.

"Soon search will be included with TV programming," predicted Bradley Horowitz, head of technology development for Yahoo's search and marketplace group. "The channels of today are artifacts of the analog age. In the future, you will have billions of TV channels. There will be a Quentin Tarantino channel, so you can watch what he is watching. You will also have a friends-and-neighbors channel." In addition, "there will be voice response in phones, so you can ask your phone a question."

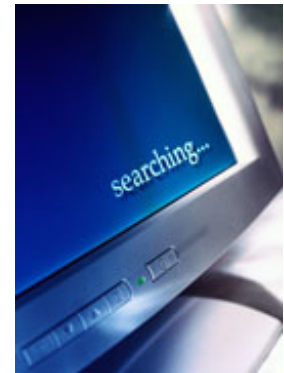
Of course, all of that searchable content will come at a price. And chances are that it will be paid in much the same way that programming is funded today -- via advertising. "Ads work with search because you are at a decision point when you search for something," said Matthew Glotzbach, director of project management for Google's enterprise group. "You are just a click or two away from a transaction."

Advertising opportunities should grow as search engines improve; better search technology should yield more relevant results, including ads. If, for example, someone searches for "mushrooms" because he wants to add truffles to a dish, he will probably make a purchase if one of his top hits is a gourmet store, not a site on a university program that studies fungi. And businesses will advertise if they believe that searches will direct customers to them.

Speakers at the conference disagreed on how exactly these improvements will arise. Saleel Sathé, lead product manager for Microsoft's MSN Search, argued that the challenge is enticing consumers to provide more information in their searches. That way, a search engine can better tailor its results. "The average query today is only 2.5 words," he pointed out. "If you went to the library and asked a librarian for help, you wouldn't give only 2.5 words."

But Perry Solomon, senior director at the U.S. division of Norway-based Fast Search & Transfer, a search firm, countered that search engines will evolve in ways that spare users from having to be more explicit. "Search will begin to distinguish between expressed needs and implicit needs. Implicit needs are things like recommendations based on your purchase history."

That's already happening on e-commerce sites like Amazon and iTunes, which make suggestions based on customers' prior buys. As search engines advance, they will integrate what consumers buy on e-commerce sites with what they seek on their search engine. Combine the two, and the engine should know that people who buy lots of cook books probably want information on cuisine, not travel, when they search for "France."



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On the Caffeine Trail

Another improvement -- to both users' results and companies' bottom lines -- will arrive with local search, i.e., searches confined to a single city or even neighborhood. "It's going to be huge," predicted Michael Brady of Fast Search & Transfer. "Yellow Pages are a \$14 billion a year business in the U.S. All the direct mail you get now is soon going to be driven by local search."

The utility of local search will grow when combined with technologies like mobile phones that can pinpoint a person's location. In theory, a local search on a mobile phone could help someone find, say, a restaurant in a strange city -- "like when I needed a Starbucks close to my hotel this morning," quipped Google's Glotzbach. Already, Blackberry users can retrieve maps using a Google service, he noted.

Local search will probably move away from the page-ranking algorithms on which today's engines depend, Horowitz said. Page-ranking, pioneered by Google, produces results based on how many other web pages link to a page. That puts power in the hands of technicians, called web masters, who create and maintain websites and links. But if someone wants to find a "reputable plumber in Philadelphia," he is more interested in his neighbors' opinions than those of web masters, Horowitz argued.

Another promising new field is enterprise search -- search by employees within the confines of a single company. Like any new area, it presents opportunities and obstacles. Employees searching their company's network, for example, should be able to trust results in a way that they can't trust hits on a public search engine; they shouldn't find "spooft" sites and bogus entries. But it's unclear who will pay for enterprise searches. Corporations probably won't want to fund a capability that, on public sites, people get for free. Yet at the moment, they also seem unlikely to welcome advertising onto their private networks.

Google's Glotzbach predicted that the benefit of having someone else pay via ads would trump their reservations. "Five years ago, people would have said that hosted applications for critical business data wouldn't work," he pointed out. "Now you've got salesforce.com, Oracle and SAP in that niche. Companies decided that it was worth the risks."

Enterprise search also could present enticing new opportunities for advertisers and thus for firms selling the ads. "Imagine how much some companies might pay to target ads to only Fortune 500 CIOs," Glotzbach said.

Search refinements aren't the only ways in which firms like Yahoo, Google and Microsoft continue to vie for and, more importantly, try to retain online users. They are offering all sorts of new services to entice users to spend more of their time at their sites. "We are all fighting for attention," Horowitz said. "If we can get your attention, we will find ways to monetize that." Yahoo, for example, has recently been luring web surfers with Flickr, a photo-sharing site, and del.icio.us, a social-networking site. "We have been running, in essence, a live experiment with users" on those sites.

Barriers to Better Connections

Of course, online activities are only as good as the devices on which they are conducted. Today one of the biggest obstacles to effective searches and content management, in general, is that many electronic tools and toys operate as little islands. Users can't easily transfer programming between them or use content intended for one on another.

As consumers become comfortable using and creating different kinds of content, they are going to demand better links, said Sanjay Chheda, vice president of OEM device solution sales for Microsoft. "Today, tens of millions of people are ripping CDs to their PCs and then loading them onto their personal devices. They are doing podcasts. They are taking digital pictures. They are going to want access to all of

that content on all of their devices -- at home, in their car and on their phone."

For that to happen, companies will have to agree to build devices around standard data-storage and transfer formats, just as personal computing coalesced around Microsoft's Windows operating system. "There's no way content can move without one company staking out a format," he said. "Where there is fracturing in the market, it will work against the consumer."

The lack of standards isn't the only barrier to better connections. Any file-transfer technology needs to afford some sort of protection for the intellectual-property rights of content creators and also security for users. Until digital property rights are resolved, content creators will be wary about making their programming widely available. And until security is assured, consumers will be cautious about embracing new technologies. "Opening up your home network to you also means opening it up to others," Chheda cautioned.

Foy Sperring, a senior vice president at Audible, an online seller of book recordings, predicted that these barriers would be overcome quickly. Sperring, whose company already supports 200 different devices and 30 manufacturers, also speculated that the digital devices would soon get smarter. "In the future, your content will follow you. You will be listening to a book at home and then you go out and get in your car and start driving, and it will start up just where you left off."

Satellite radio receivers already work much this way. Users can elect to purchase receivers that they can dock at home, in their cars and even in portable boom boxes. iPods, too, have spawned a host of accessories that allow them to be used in concert with car and home stereos.

Sameer Mithal, a principal with Boston-based Adventis Consulting, which specializes in media and telecommunications, predicted that mobile phones would be the device that many consumers would end up using as a gateway to their personal digital domains. Many developing countries already have more mobile phones than landlines, he pointed out. And mobile phone makers are experimenting with all sorts of combinations of capabilities, marrying voice service not only with shortwave radios and digital cameras, but also music players and even global positioning systems.

If phones do end up dominating, a battle for content control will likely ensue between the wireless-service providers and content creators, Mithal said. "When you go online with your phone, you see a bunch of content. Cell-phone providers are like AOL in the early days of the web, trying to control their users' experience. But a number of other companies are trying to get around that content deck.

"In the U.S., 90% of phone-delivered content is still controlled by the wireless carriers," he noted. "They take about 50-60% of the revenue, while the content owners get 15-25% and middle players get the balance. In Europe, mobile operators tried to control the content, but they have already gotten away from it. There, the operator gets 20-30%, and the content guys get 20-30%. That's where it's headed here, too."

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