INTERVIEW

“Google’s rise has been phenomenal.”

- Hemant K Bhargava

In the interview, Hemant K Bhargava, Professor of Computer Science and Management at the Graduate School of Management, provides perspectives on the phenomenal rise of Google in the past decade and examines the reasons for the company’s success. He further comments on the challenges which Google can face going forward and the strategies which the company may deploy to mitigate those challenges.

- From a humble beginning, within a decade, Google has grown into one of the most recognized brands in the world. How do you perceive this phenomenal rise?

Google’s rise is indeed phenomenal. In fact, I’d say that Google became a phenomenon within just three to five years of its beginning, not 10. But, a rapid rise is not unprecedented or shocking for technology companies. Examples that come to my mind are Cisco, Oracle, Microsoft, all of which became major players within a short time span. In the Internet arena, MySpace, YouTube, and FaceBook acquired tens of millions of users within just a few years.

Now, within the technology world, very rapid growth curves are not terribly surprising for products that experience ‘positive network effects’ – where the user’s value for the product rises with the number of users (for example, if a lot of people I know use Skype for computer-to-computer voice/video communication, then I will have greater value for Skype).

When the number of early adopters crosses a threshold, the product suddenly becomes attractive to lots of other non-adopters – not because of its features alone, but because the ‘network benefit’ is now quite high. As more people adopt the product, the network benefit increases even further and attracts the next batch of fence-sitters, and so on. This logic holds good for other products such as FaceBook that we use to interact or network with others. So one can expect very rapid adoption for network goods, due to this virtuous cycle of positive network effects.

But what makes Google’s rise especially astonishing is that it happened so fast. That is, the value of Google search, for me, doesn’t have much to do with whether you are using Google or Yahoo! or MSN. So, it really was quite a feat for Google to have become a very popular search engine very quickly. Today, Google has over half of the search market, and receives over 50,000 search requests per minute! So, undeniably, Google has become a globally recognized brand for the quality of its products, and for the number of its users.

- What according to you, lies behind this feat? In other words, how did Google become a phenomenon so rapidly despite not benefiting from network effects?

Well, I think it’s a combination of a few things. First, some serendipity ... at Stanford in the 1990s, both Sergey Brin and Larry Page (later, founders of Google) were interested in data mining and large-scale computing. Now, at that time, designing search engines was about ‘information retrieval’ techniques (a fairly traditional area in Computer Science), but Brin and Page’s interests led them to an innovative way of building large-scale Web search engines, specifically to the very successful concept of ‘popularity ranking’ (intuitively, a Web page...
INTERVIEW

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About the Interviewee

has a high PageRank if a lot of other Web pages refer to it). Second, Google adhered to a core, basic principle of information systems design: Keep It Simple, Stupid (KISS).

Google’s search interface was, and still is, one of the best examples of simple, elegant, uncluttered design. Just compare the 1999 versions of the search start pages of Yahoo! (the then established player) and Google (the newcomer), and Yahoo!’s search start page today. While this might look like a minor thing, it illustrates the elegance and clarity in all aspects of Google search technology.

Third, Google has developed innovative ways of putting thousands of PCs to work together, which enables them to deliver great search performance (how quickly you got your search results). Fourth, they have better ‘crawling’ technology so a Google search covers more pages than anybody else.

So, all of these things put together ensure that Google has a very high quality, arguably the best, search product. In fact, one might argue that the reason they have not captured the other half of the search market, is simply ‘lock-in’ effects: Some people choose Yahoo! search or MSN search simply because they are wedded to Yahoo! or MSN for other purposes (e.g., Internet portal or operating system).

But there is a second key aspect of Google’s phenomenal rise. Google actually makes money, lots of money, due to Internet search, even though it charges its users nothing. Google makes its money from advertisers, who value the user traffic that Google brings in: These advertisers pay Google for the right to appear prominently (as sponsored results) alongside the main search results. This is where Google was actually able to exploit network effects. Google actually serves two sets of markets (or networks): advertisers and searchers. Advertisers clearly value a search engine that has lots of search users, so here we have a positive network effect.

However, users do not necessarily like more ads, creating a possibility for a “negative network effect” here: if so, the search engine’s efforts at increasing advertising revenue will conflict with their goal of attracting more users. The pioneers of search advertising—such as GoTo.com, Overture.com, and then Yahoo.com—matched advertisers to search results based purely on how much the advertisers bid per click for the search word. This promoted
About the Organization

Google Inc. is an American public corporation. The company was founded by Larry Page and Sergey Brin and it was first incorporated as a privately held company on September 4, 1998. Google earns revenue from advertising related to its Internet search, e-mail, online mapping, office productivity, social networking, and video sharing services as well as selling advertising-free versions of the same technologies. The company’s market capitalization as on January 22, 2009 is $96.472 bn with an operating income of $6.632 bn.

advertisers who were not too relevant to the user, and the net result was that the publisher earned lower overall revenue per display opportunity despite selling to the highest bidders.

Google, on the other hand, was able to make the network effects kick in positively due to its innovative approach for allocating and choosing advertisers. For each search query, Google chose advertisers based on a product of their bid price and their estimated relevance (which, as a good search engine, Google was able to compute quite well). This ensures that Google’s sponsored results are, relatively speaking, quite good and relevant to your search. And, therefore, having more advertisers actually creates more value for users – and of course generates higher profits for Google.1

What are the challenges the company is facing now?

Well, for one, the challenges of a relatively mature company. Growth is harder to achieve when you’ve already captured a big chunk of the market. Other firms (especially in the media and advertising industries), which saw Google as a partner, now see it as a competitor. Talent is harder to come by and harder to retain. For example, Google was the place to work a few years ago, but now some of its employees have started leaving for younger firms such as FaceBook. And, the one big thing a lot of observers criticize Google for: it is a one-trick pony. Nearly all Google’s revenue comes from search advertising. So, if there is a downturn in advertising or the overall economy, as is happening now, Google might be hit quite adversely.

How do you see the future of Google in the next decade?

Well, who knows? Ok, there are two categories of possibilities, the more predictable ones, and the surprises.

First, I think Google will continue to do quite well in its core business. Unlike the obvious view of Google as a search engine company, I actually think that Google is really a company that has a new approach for managing advertising: that is, how to select, price and place the ‘correct’ ads next to other content. One of the core, back-end products of Google is its computerized system that runs the online, continuous, real-time auctions for the selection, allocation, and pricing of ads against search queries. This is quite a revolutionary approach compared to the way advertisements are priced and sold for newspapers, magazines, radio, or television.

So, I would expect Google to leverage its core competence towards running the business of advertising in this broader playground of traditional media. Another evolutionary step

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1 The technical details of these two allocation approaches are described in one of my publications (“Implementing Sponsored Search in Web Search Engines: Computational Evaluation of Alternative Mechanisms”, in the INFORMS Journal on Computing, with a version available on SSRN.com).
for Google would be to move from text search to multimedia search (imagine, you could input a piece of music or an image or video, and get back corresponding search results in those forms).

Second, Google is not a one-trick pony. There are a number of experimental products that Google has been developing – mostly kept under wraps or, at least until now, not monetized. Examples are Froogle, Google Scholar, Google Books, Checkout, Google Earth, Google Apps, etc. Many of these services are notable not necessarily for the end product, or for how much market share Google has captured, but for the technology that lies under the hood. Someday, Google might choose to capitalize on these technologies.

Even more than that, there are the innovations that Google has made in order to become a successful search/ advertising company. For example, as I mentioned earlier, Google has excelled at how to obtain high-performance computing out of thousands of simple, inexpensive PCs, something that demonstrates prowess in areas such as distributed systems, networking, and parallel computing.

Google has one of the best approaches for energy management for their server farms. Energy is going to be one of the biggest issues the IT industry will be facing and Google might well be able to make a business out of this expertise. Put all these things together, and you might even see Google emerge as a provider of integrated network-based computing services. Or, consider Google’s recently introduced browser, Chrome. Chrome is much more than a Web browser. It is a potential operating system and if offers Google a powerful way to gather data about user behavior, both of which create new revenue possibilities.

- **What kind of strategies is Google pursuing to uphold its business?**

I’m not quite privy to all this, but Google is certainly becoming a little more matured and a little more aggressive, and perhaps even a little more traditional, in how it manages its business, in how it deals with financial analysts, etc. And as I mentioned earlier, Google is also quietly developing a diversity of intellectual property, which could be tapped for commercial purposes, if necessary. I understand Google is also developing political clout which is necessary, for example, to maintain its commercial and strategic interests (e.g., in dealing with the continuing browser wars – how users get their default Web browser which becomes the gateway to various monetizable activities).

- **Any other comments?**

I think Google and a number of other technology companies (before and after Google) offer us academics an exciting new laboratory and playfield for studying new business and competitive strategies that are unique for technology companies – network effects, platform competition, business models, etc. At the University in California, and near Silicon Valley, we teach an MBA course called “Competitive Strategies in Technology Industries” at DC Davis, and I look forward to more companies such as Google!

Interviewed by Sanjoy De, Senior Analyst, The Icfai University Press, Hyderabad.

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