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A Report on Google Stock

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23 Reasons Google Could Become a Penny Stock

by Steve Baba, Ph.D.

Steve Baba has a Ph.D. in Economics from the University of Maryland, has written Internet business plans, and is the author of Business Domain Names, a free ebook on www.seemly.com (PDF, 250K). Steve is a minor partner with his brother in www.Shrewd.com, a new price comparison service that finds low prices for new and used books, CDs, videos and other products. Shrewd.com's free price comparison service has both a website and a phone-based service similar to calling Moviefone – but for book prices, CD prices and video prices.

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Google Stock Report

Google is a great website, but a lesson of the dotcom bubble is that a great website is not always a great business. Google's expected IPO has attracted enormous, one-sided, positive buzz from Google fans, techies nostalgic about the boom years, and day traders hoping for quick profits. For balance, below is a summary and analysis of Google's many potential business challenges, several of which could turn Google into a penny stock.

I am not arguing that Google will definitely become a penny stock, only that there is a significant risk of Google joining the dot-com graveyard. The potential rewards of purchasing Google stock may justify the risk, but the risk should be evaluated, and the smartest investors may sell Google ahead of the market if risks develop.

While covering 23 potential business challenges, I have chosen to not comment on the alleged weakness or strengths of Google's management, corporate governance, corporate culture, lawsuits or the IPO process. In addition to being well-discussed elsewhere, Google's management, culture, corporate governance or the IPO process can be improved if necessary.

23 Reasons Google Could Become a Penny Stock

1. Companies that grow quickly by viral marketing, also known as word-of-mouth advertising, can fall just as quickly by competitors' viral marketing. Most people heard about Google from a friend or saw a coworker using Google. Google did not have to advertise on television or mail billions of sample CDs. While viral marketing is a marketer's dream since it costs nothing, viral marketing is also a marketer's nightmare since it also costs competitors nothing. Google was fortunate that viral-marketing chain-reaction conditions, one person telling another or just observing a Google search, who tells/observes another and so on, exist for search engines. But the same viral-marketing conditions also exist for Google's competitors.

2. Companies that grow quickly from free publicity can also fall quickly by competitor's free publicity. People who did not learn about Google from a friend or coworker, likely learned about Google from the press. Since virtually everyone online uses a search engine, there are many newspaper, magazine, and website articles about search engines, which are avidly read by computer enthusiasts. When Microsoft announced its new redesigned search engine, most computer enthusiasts learned of it within days. I was informed of Microsoft's new search engine by an online newsletter, by TV, and by a newspaper within a day. Granted, Microsoft has a large, efficient publicity department with the best press contacts, and a new, unknown competitor might only receive a fraction of the publicity Microsoft obtained. It was the combination of free publicity and free word of mouth that led to Google's quick marketing success, but it's a combination that Google's competitors can also use.

3. Switching costs and brand loyalty of search engine users are low. Just as people quickly switched to Google, people can quickly switch to a competitor. It's difficult to think of a product or service with lower switching costs. Trying a new soft drink may cost a dollar, and the drinker loses the refreshment of his usual drink if he does not like the new drink. But it costs nothing to try a new search engine. If a customer does not like the search results, he can go back to his usual site. Many computer enthusiasts actually enjoy trying new websites, making the switching costs negative, which is extremely uncommon. In other words, customers are not locked into a search engine by an investment of time or money.

In contrast to eBay, there are no network economics for search that would lock users into Google. In contrast to MS Office, there are no compatibility issues, such as sharing compatible documents, which would lock people into Google. In contrast to the time spent learning how to use MS Office, there is little time spent learning how to use Google to lock people into Google. Granted, a few power users purchase books on Google or have learned how to do advanced Google searches from websites, but most users perform the basic search by just typing words into the search box and have never or rarely read

any of Google's instructions. In contrast to Amazon, there is no reliable distribution service that maintains customer loyalty.

As a thought experiment, imagine how little brand loyalty there would be if automobiles were free and car companies dropped free new cars off at your house for you to try. The only things that would keep people from switching cars would be inertia and image. The inertia of changing search engines is small: typing in a new domain name and performing a few comparative searches. Competitors will offer incentives to overcome the small inertia, which are discussed later.

Some people have argued that Google's cool, hip, do-no-evil image will keep people from switching to a competitor. If it weren't for Microsoft's image problems (monopolist, enemy of open source, compensated by the Gates Foundation), I would totally discount Google's image as a significant competitive advantage. The quality of search and everything else being equal, some people may choose Google over Microsoft to stick it to Bill Gates. But I don't foresee 1) image being enough to change a user's decision unless everything else is equal, or 2) Google having a sustainable image advantage. I doubt it could come to this, but competitors could compete with Google on image. Despite having a Ph.D., if I were to choose a product on image, I would not choose the image of, for lack of a better word, the geeks at Google.

4. A winner-take-all business, also known as a contest business model, is only profitable if you are the winner, as Google is today. But a winner-take-all business leaves the second or third place companies, such as Altavista, struggling for survival. For a few low-cost products/services that people use only one of, people choose the best product and don't bother to compare the nominal cost. Since most search engines are free, people naturally choose the best, free one – the key being “one.” People usually only use one search engine, their favorite, for a search. The second favorite search engine receives little traffic. If someone builds a search engine only slightly better than Google, Google could quickly become the second favorite search engine and lose market share as rapidly as AltaVista.com lost market share.

5. While Google is free to searchers, a price of zero, profit-lowering price-competition is still possible with a negative price. It is possible to have a negative price or pay users to use a service. For example, iWon.com pays users with a chance of winning. Currently, Google provides iWon.com's search results, but in my opinion Google provides iWon with an inferior display (but same order) of the search results for obvious competitive reasons. During the dot-com boom, a few companies paid users or offered free computers, which was known as pay-for-surfing. It is possible to pay users a percentage of advertising revenue, but this has moral hazard problems in that people could click on advertisements only for the money. Companies could also compete by donating a larger percent of revenue to charity, such as 10%, not the one percent Google plans to donate, which might also strip Google of any image advantage.

6. In addition to price competition, search engines can compete for users by offering less advertising. People prefer less advertising and switch to sites with less advertising. Less advertising obviously lowers revenue. Many people like Google because Google is not cluttered with banner advertising and the ads are clearly separate from the search results. Google places a few ads above the search results and on the right margin. A competitor could place ads only on the top, giving the right margin to additional content the searcher wants. This useful content, in the place of ads, could include a longer description of the websites, thumbnail pictures of the websites, a directory listing of the websites, evaluations of websites, the statistics of each website or any other useful information.

7. Search engines also compete on the quality/ordering of the search results. A competitor could develop a better, patentable search algorithm, as some hopeful inventors claim to be working on. There are a number of ways to determine which web pages should be listed first in search results. Hoping that better pages have more links, Google and other search engines count links. Some search engines count bookmarked (favorite) pages. Thinking that people would spend more time reading better pages, some search engines track the amount of time people spend reading each page. Artificial intelligence

rules can evaluate the quality of each page, but this is largely experimental. Each method has weakness and can be exploited by search engine optimization.

A leading scholar could write the best web page on George Washington, but since it takes years for a significant number of people to link to the site, the best site can have a low ranking for years. A commercial site, such as a George Washington Motel can obtain a higher rank by hiring a search engine optimizer to instantly create or exchange links. Since each method has weaknesses, a combination of methods is used. As with most evaluations (including evaluating stock), using a variety of criteria or rules yields better results than using just one criterion (buying stock solely because of current profits). Since using multiple criteria works better than one criteria, a breakthrough on one method or criteria only raises the average, overall performance slightly. It would take a huge breakthrough, such as in artificial intelligence, to leapfrog Google quality, and Google can try to match (copy, reverse engineer) or license breakthroughs. The difficulties of developing an artificially intelligent search engine are discussed in topic 22.

8. The search engine industry may be in a temporary disequilibrium, and the long run equilibrium, dominance by Google or highly competitive industry, is unknown. Just as investors have noticed that Google is profitable, so have competitors and potential competitors. It's one thing to have fended off competitive challenges for years and remain profitable. It's another thing to stumble on a new opportunity and not know if competitors will compete the profits away. (In a lawsuit, Overture claims that Google stumbled across their patented advertising process.) Looking at potential competitors we have the usual suspects, Yahoo, Microsoft and any number of new entrants.

9. Microsoft and Yahoo might actually try and compete with Google. Until recently, Yahoo was hampered by an old directory model and Microsoft's (outsourced) search was so bad that it attracted the attention of the FTC for being misleading. Yahoo's and Microsoft's past or present efforts to profit by mixing content with ads left Google with a reputational advantage that Google rightly deserves. Just evenly competing with Google could split the search market with one third for each, less than Google has now. In

addition to reducing Google's market share, competition also competes away profits as companies compete for users. In addition to Yahoo and Microsoft, smaller competitors also want a piece of the pie and the following technological trends make it easier for smaller companies.

10. The rapidly declining cost of technology, computers, storage, and bandwidth (Moore's Law), will reduce the cost of entry for competitors. Just as a desktop computer that would have cost \$4,000 a few years ago can be purchased for \$400, a similar fall in server prices lowers the cost of running search engines and websites in general. In the future, any two graduate students may be able to start a search engine from their dorm room without venture capital. Gigablast.com is an example of a search engine developed by one person that uses only eight fairly standard desktop PCs. While Gigablast.com is impressive for a one-person company, Gigablast.com is no threat to Google today. Google (and all computer users) also benefits from the declining cost of computer hardware, but the fact remains that with lower costs of entry, there can be more competitors.

11. Any competitor can outsource software deployment to India, Russia or China, which will reduce the cost of entry for competitors enabling new competitors. While offshoring sometimes involves communication problems, programming search or database indexes does not require close coordination with an American headquarters, an American marketing team or an American logistics operation. A team of Russian or Chinese programmers coding a search engine could work largely on their own. Coding a search engine is largely a mathematical, database or programming challenge, which offshore programmers can do as well as American programmers can. Google can also reduce software costs by outsourcing, but the fact remains that with lower costs of entry, there will be more competitors. Foreign owned competitors would also enjoy the same low-costs.

12. There is open source competition. Open source also reduces the cost of entry for competitors, enabling new competitors. Google's own directory is open source – a

modified version of the Open Directory Project (DMOZ.org). Nutch.org is a nascent effort to implement an open-source web search engine. Google uses open source Linux on its servers. While Google benefits from using open source, the fact remains with lower costs there will be more competitors. There are already many small competitors who offer the same Open Directory Project that Google does and even a cottage industry of programs to search the Open Directory Project.

13. The increasing power of programming tools, languages, and scripts reduces programming costs, which increases competition. At the dawn of the Internet, online stores were hand coded by programmers and could cost millions of dollars. Now programming tools are available so that anyone can set up an online store in a day. While programming a search engine will never be as easy as setting up an online store, it's getting easier. Programming is also getting easier for Google, but with lower costs of entry, there will be more competitors.

14. Google's revenue source, text Pay-Per-Click advertising (PPC) often causes a race to the bottom as the most expensive/profitable products outbid less expensive products for the limited PPC positions, having negative reputational then financial effects. This is most obvious and common in high margin products such as web hosting or domain names. The best companies, from the consumer's point of view, can't pay \$1 to \$5 per click, while companies that exploit consumers can pay. Consumers may eventually learn that they are paying for the high PPC costs to be exploited and click less.

Even when there is no competitive race to the bottom by exploitive companies, larger companies, such as Amazon or eBay, that can cross-sell many products to repeat customers, value a customer more than smaller companies and can pay more for Google's ads than smaller companies can. Many small companies selling low-margin items cannot even afford to pay five cents per click if it takes 100 or 200 visitors per sale (\$5 to \$10 per sale). A search for "Clifford the Red Dog," which I choose are random and I think is representative of consumer product searches, turned up ads from AllAboardToys.com, Shopping.com, MacMall.com, Yahoo.com, Amazon.com, Shop.com and eBay. In the

long run, too many ads from the same large companies may turn users off since they already know they can buy at Amazon.com, Yahoo, Shopping.com or eBay.

PPC advertising differs from most advertising in 1) the goal can be direct sales and not to build up a quality reputation, 2) there is a limited number advertising spots, 3) there is quick, easy and inexpensive ad placement, which is great for both legitimate companies and fly-by-night companies, and 4) the price varies widely by search term. It's too soon to tell what long-term effect PPC advertising will have on future consumer behavior. However, I would not be surprised if PPC ads acquire the reputation of say infomercials. Customers would become less likely to click on PPC ads and then less likely to purchase without comparing, which lowers the value of the ad.

But what of the success cases of PPC advertising revitalizing small businesses touted in the press? It is true that there are thousands of small businesses paying only five cents or ten cents per ad who are earning a comfortable living from Google ads. But these are the exceptions, not the rule. If there are more than eight competitors, competition/bidding drives up the price of the ads to the profit generated by the ad, which is great for Google, but not for the small business. If the product is popular enough to be sold by large retailers, the large retailers who can cross-sell and repeat-sell will outbid small business. Small businesses only do very well advertising on Google when they have little competition.

15. Text pay-per-click advertising is only one form of advertising and is subject to competition from other forms of advertising, both online and offline, and even subject to competition from free publicity. There is competition from websites that evaluate products, competition from shopping bots, and competition from directory sites. There is competition from free toolbars, such as the Alexa.com toolbar, that list similar sites. Advertisers that pay Google for a visitor are also providing free advertising to their competitors who appear in the Alexa toolbar. To consumers looking for the best product, a Yellow Page type-advertising directory lists every business, instead of only the few companies that pay for PPC ads. In the future, there will most probably be competition

from new, invented online advertising methods. In general, the Internet provides plenty of free information to consumers, which limits the marginal effect and value of paid informational ads.

16. Google's revenue source, advertising, may be blocked or replaced by ad blocking software. This is similar to the TiVo problem for television advertisers. While Google's text ads are not intrusive as pop-up ads or flashing banner ads, given a choice, people may decide to block Google's ads or replace Google's ads with more useful third party content. Just as Google's toolbar blocks (competitor's) popup ads, other products block Google's ads – especially those that “block ALL ads,” such as Norton's ad blocker.

A nightmare scenario to Google would be if someone delivered useful third party content, such as news, weather, or a secondary search, in a window obstructing Google's PPC ads, and people choose the third party content instead of Google's ads. The spyware, parasiteware BrowserAid/FeaturedResults is a search results hijacker. Perform a search at Google and it will pop up a window with no browser controls from featured-results.com (WARNING: Visit any parasiteware site at your own risk), containing advertiser links dressed up to look like Google search results. Virtually all parasiteware today is so useless and harmful that computer users kill the parasiteware as soon as possible. As with parasites in nature, killing your host and dieing with it or upsetting your host so your host kills you is not a good strategy. Most parasites just weaken their hosts. But some beneficial parasites help their host by cleaning the host or performing other services for the host. If someone developed a beneficial parasite covering Google's ads, Google's advertising revenue would decline. While it may be a copyright violation to modify the content in Google's window, it's unlikely to be a copyright violation to open a separate window on top of Google's window. Google has no legal problem blocking the copyrighted pop-ups of others.

17. Google's reported 50% margin with AdSense (displaying ads on third party sites) is unsustainably high for a middleman. Competitors will offer similar services in the future, taking less of a cut. Google already makes special deals with large AdSense Network

members. Google agreed to, “make \$5.6 million of non-cancelable guaranteed minimum revenue share payments through 2005 irrespective of whether or not the Google Network member achieves defined performance goals.” (SEC filing). Competition should force Google to offer better deals to smaller partners. Adsense Network partners (websites carrying the ads) care only about the money and will quickly shift to Yahoo/Overture or any other competitor that can pay them more. Therefore, I would expect competition to be fierce in the future. But both Google and Yahoo/Overture may enjoy economics of scale advantages over smaller Adsense competitors in both programming and the number of ads they can distribute.

18. Much of Google’s future profit potential depends on brand extension to other services, such as their shopping comparison site Froogle or Gmail, which involves risks and cannibalization. Brand extension is always a risky strategy even for the best managed firm. In addition to the challenge of extending the brand, there is the risk of cannibalizing existing sales. A Froogle search is in part a substitute for a Google search. People will probably spend a limited amount of time searching for say computers, and the time will be split between Google and Froogle. Froogle may be useful to Google in keeping people from competitors’ shopping comparison sites. Since advertisers have a limited (although not fixed since advertisers will spend more for more exposure) amount to spend on advertising, Adsense ads on Google’s network partners partially competes/cannibalizes with advertising sales on Google’s own site.

19. Being number one, Google is the number one target for search engine spammers and search engine optimizers, which reduces Google’s quality. Google constantly has to change its page ranking in response to link farms and blog link manipulation, such as having “miserable failure” point to George Bush. Of course, other search engines are also targeted, but not to the extent Google is a target. Search engine optimizers will usually tweak their web pages to perform (distort) best on Google, because they receive the most traffic from Google. But search engine spammers do raise the cost to all search engines both in counter programming to eliminate duplicate pages and in computer resources spidering duplicate pages.

20. After an IPO, with no prospect of great stock options to employees, Google may be at a comparative disadvantage attracting or retaining top talent. The lucky Google millionaires may naturally become less motivated. To new employees, working at Google may be like working at Microsoft – good pay, good benefits, but a bureaucracy with no chance of making a million dollars and fewer real opportunities for creativity than at a smaller firm. Google now allows employees to work on their own projects in an effort retain creative workers and profit from their creativity.

21. Google or anyone else may not discover significant new advances in search if none are there to be easily discovered and all the easy techniques, the low hanging fruit, were already discovered, wasting Google's research investment. Consider word processing as an example. While Microsoft has added hundreds of new features over the past decade, all of the most useful and commonly used features were discovered by the mid 1990s. Just as Microsoft is adding dozens of features to Word that people rarely use or even know how to use, Google appears to be reduced to adding additional features to its search that people rarely use.

22. In contrast to the already discovered and easily copied low hanging fruit, the high hanging fruit of artificial intelligence may be decades away if it's even possible, wasting Google's research investment. I wish the editing features of MS Word were as smart as a human editor and could turn this paper into an exciting-to-read, award-winning paper, instead of just noticing my errors. It would also be nice if a search engine, as smart as a human, could screen web pages before I read them to save me the trouble of reading useless (to me) web pages.

Developing artificial intelligence for a search engine is more difficult than the average, already extremely difficult, artificial intelligence challenge for two reasons. First, people have an incentive to fool search engines. People would not try to fool an artificial intelligence doctor diagnosing their illness. People would not try to fool an artificial intelligence English language editor helping them write better. But people will try to fool search engines into thinking that their websites are the best and deserve the top spot. Therefore, the search engine has to be smart enough not to be fooled by humans.

Second, most artificial intelligence requires only expertise on a single subject. An artificial intelligence doctor only has to know how to diagnose people. An artificial intelligence English editor only has to know how to edit. But an artificially intelligent search engine would have to be an expert on all subjects, medicine, history, language, and so on.

Even if there are artificial intelligence advances in the future, there is also no guarantee that Google will be the company to discover and implement any new artificial intelligence technology.

23. Everyone online, including Internet entrepreneurs, uses Google or another search engine, making search a well-known and glamorous business opportunity. Search is the Mount Everest of the Internet. Half the Internet entrepreneurs that I have known have brainstormed starting a search engine business, most quickly abandoning the thought. But as the costs of technology and software fall, more Internet entrepreneurs may start search engines leading to a competitive and innovative search industry.

Conclusion: Technology, Industry Structure. Conduct. Performance.

A simple economics industrial organization theory is that technology (economics of scale, capital required), determines industry structure (number of firms), which determines conduct (competition, price wars or tacit collusion), which determines performance (profits, prices, product quality).

For established industries, the technology and industry structure and conduct are relatively stable. For example, it's unlikely that the structure (number of firms) of the automotive industry or oil industry is likely to change rapidly. Therefore, many investors only look at a firm's performance (sales, profits) when making investment decisions. But when there is a change in the industry structure, investing only on past performance or some regression to a trend that no longer exists leads to the wrong investment decision.

My argument is the industry structure of the search and PPC advertising industry is very uncertain. If the technology and costs allow for economics of scale in research and programming, Google could dominate the industry structure and, for lack of a better definition, enjoy monopoly-level profits.

Because of viral marketing and publicity, I doubt there are economics of scale in marketing. The unsuccessful search engine HotBot tried television advertising in 1999 with little success. Since there are no retail stores or physical distribution, there can be no economics of scale in product distribution.

On the other hand, if the technology and costs allow many small competitors, the industry will be highly competitive and Google will be reduced to low competitive profits. A middle ground would be competition from a handful of other major firms such as Yahoo, Microsoft and Ask Jeeves.

Consider some simple back-of-the-envelope calculations. Assume a billion dollar industry with no costs except programming. A billion dollar industry could support ten

\$100 million dollar a year firms. Microsoft claims to have spent \$100 million on their new search engine, which would support 400 programmers at \$250,000 each (salary plus overhead). Are 400 programmers enough to compete? While, four hundred programmers can't program as much as 800 similar programmers, there are diminishing returns once the search problem is solved. Extra programmers could only work on extra less important, less used features. It's possible that 400 programmers may be too many; too many cooks spoil the meal. Perhaps 100 programmers are enough to compete, reducing the investment to \$25 million per year. Perhaps Indian or Ukrainian programmers could do as well for a third the cost.

Note that the industry structure is determined by technology and costs. There is little Google's management or even an ideal perfect management can do in a free market if the technology and the cost of entry permit many competitors.

A risky businesses can diversify into less risky businesses, become a conglomerate, to diversify risk by averaging. But without synergy benefits, becoming a conglomerate (a portal?) is less efficient than diversifying in the stock market and managing a conglomerate reduces management's focus on the original core business. Google may be doing this.

Possible Events Affecting Google To Watch For

A new offshore competitor developing a Google-quality search engine on a low budget would obviously raise Google's risk. Even if the one competitor, who may be the first of many competitors, initially is slow to gain traction, one may want to sell Google to be safe.

On the other hand, if every year Google's search quality increases faster than competitors' quality, there may be a larger and larger quality gap that might take years of work and billions of dollars to catch up with Google. Google will become a safer investment, and one may want to buy Google.

In 1999, few people thought Internet Advertising could decline. The upward Internet trend was as impressive as Google's current upward trend. As mentioned above, there are potential problems and competitors with PPC advertising. The next few years should give an indication of both new advertising competitors and consumer reaction to PPC.

With even the worst-case scenario, I doubt that advertising competitors or a fall in click-thru could reduce Google's ad revenue potential by more than half (while a better search engine could reduce Google to AltaVista). Since advertising revenue is the number of click-throughs times the average cost per click, a 25% fall in click-throughs and a 25% fall in the average cost per click would lead to a nearly 50% fall in revenue. Still a 50% fall in revenue could cut profits to zero for a company with large fixed overhead.

Being the market leader, for Google no change is good news, or "no news is good news." There are many good reasons to buy Google stock, but these are well covered in the press. I have assumed that readers have used Google and understand Google's usefulness as a search engine and have seen Google's SEC filings.

I may write a new report on Google if and when there is a significant change in the industry that would change the risk of buying Google stock. Since I don't know when and if threats to Google will develop, I can't promise anything. If you would like to receive email notice of any new report, send an email to SteveBabaPhd@aol with "UPDATE" in the subject line. I will not sell your email to or send you spam. If there is not enough information to justify a report, I might write a few paragraphs and send a short informational email for free. I am not planning on reporting on overall changes in the market, overall changes in the Internet industry or weekly variations in Google Stock.