MEMORANDUM

DATE: June 5, 2015
TO: LI . Wendong
FROM WEI . Zitong
SUBJECT Activity Report for May 2015

INTRODUCTION SUMMARY

This report examines the value of the search technologies used to navigate the Internet and is part of a series that focuses on different, Internet-related technologies.

The aim of this report is to better assess the far-reaching value of search technologies, looking at how they unlock value and identifying the major beneficiaries. We cast our research net wide, wanting to understand how search technologies affect businesses, individuals, and public service entities, so the report homes in on eleven constituencies—for example, advertisers and retailers in business, and health care and education in public services. It also looks at five countries to show how the use of search technology varies depending upon geography and economic circumstances: to date, much of the analysis has concentrated on the US market. Finally, it identifies nine ways—six more than are commonly acknowledged—in which search technologies create value.1 Wherever possible, the value created is quantified.

SEARCH SCALE

For billions of people around the world, the Internet has become an essential component of their everyday social and business lives. And though they seldom give it a moment's thought, the search engines that help them navigate through the plethora of pages, images, video clips, and audio recordings found on the Web have also become essential. Search technology—shortened simply to "search" in the IT world and referred to as such in the rest of this report—is only two decades old, but it has become a cornerstone of the Internet economy.

People and organizations are in love with its utility. In January 2011, 200 million Americans, 40 million French, and more than 50 million Germans conducted online searches.23 More than 1.6 trillion searches a year are currently conducted globally.

And consider the following:

• By July of 2008, more than one trillion unique URLs were indexed by Google,25 the number having grown by 44 percent26 annually during the preceding ten years. The growth of other major search engines such as Bing and Yahoo! is similarly large.

• Some 90 percent27 of online users use search engines—that means 1.7 billion people.

• Search represents 10 percent of the time spent by individuals on the Web, totaling about four hours each a month.

• Approximately 25 percent of the traffic to the Websites of main stream content

creators results is referred by search engines.

• Knowledge workers in enterprises spend on average five hours per week， or percent of their time, searching for content.

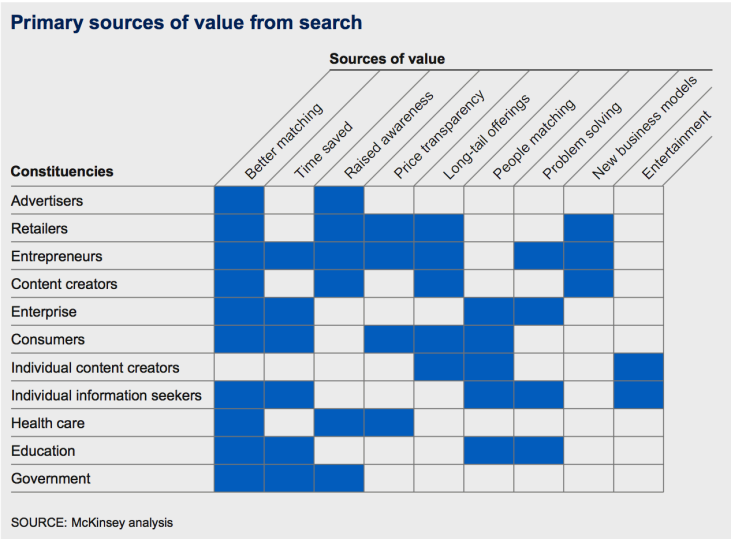
• Depending on the geography, 30 to 60 percent of all Internet users post content online, in the knowledge that search will help ensure that their voices are heard. That is more than 200 million people in the five profiled countries.

People use search in all aspects of their lives. (See Box 1, “Search scope,” for a definition of how search is defined for the purposes of this report.) Worldwide, by early 2011, some 38 percent of searches were work- related, up from 34 percent the previous year.33 To many workers, including lawyers, investors, managers, entrepreneurs, doctors, educators, and journalists, search has become indispensable. A survey of biology teachers in the United States, for example, found that 90 percent used search engines to find presentation materials such as photos, audio, and other curriculum content and that 80 percent used them to plan daily lessons.

HOW SEARCH UNLOCK VALUE

How does an online search create value? Most research to date has looked at and quantified only three main sources of value: time saved by the searchers, money saved by consumers through greater price transparency, and the return on investment (ROI) for advertisers.

A few studies have been conducted on the first of these, time saved. One study41 found that a successful search for academic information online took, on average, one-third of the time of a similar search in an academic library, though this did not account for the time it might take someone to travel to a library. Other studies describe how shoppers regard time saving as one of the major benefits of searching for products online.



More research has examined the impact of search on product prices because of the

increased transparency it enables, and several studies have researched the value derived by advertisers for paid searches—that is, paying to have their Web sites appear prominently in search results—looking at the value derived from raised awareness as well as sales.

There are several additional ways in which search can create value, some of which can be measured in financial terms, and others that cannot. In all, we identified nine sources of search value that together start to reveal its true scale. Here we define each in turn and give examples that indicate the breadth of ways in which each creates value.

THE VALUE OF SEARCH: WHO BENEFITS AND HOW?

Search affects the activities of millions of people and organizations, so we cast our research net wide when trying to assess its value. We looked at its impact on businesses, individuals, and public service entities, homing in on 11 constituencies within these main groups—for example, advertisers and retailers in business, and health care and education in public services. We then examined the relevance of the nine sources of value to each in monetary and nonmonetary terms.

The results should be regarded as case studies illustrating the value of search rather than as a fully exhaustive analysis. If the task of quantification was too uncertain for some sources of value—such as calculating the value of better matching for retailers—or if the value was likely to be minor, it was not included in our analysis.

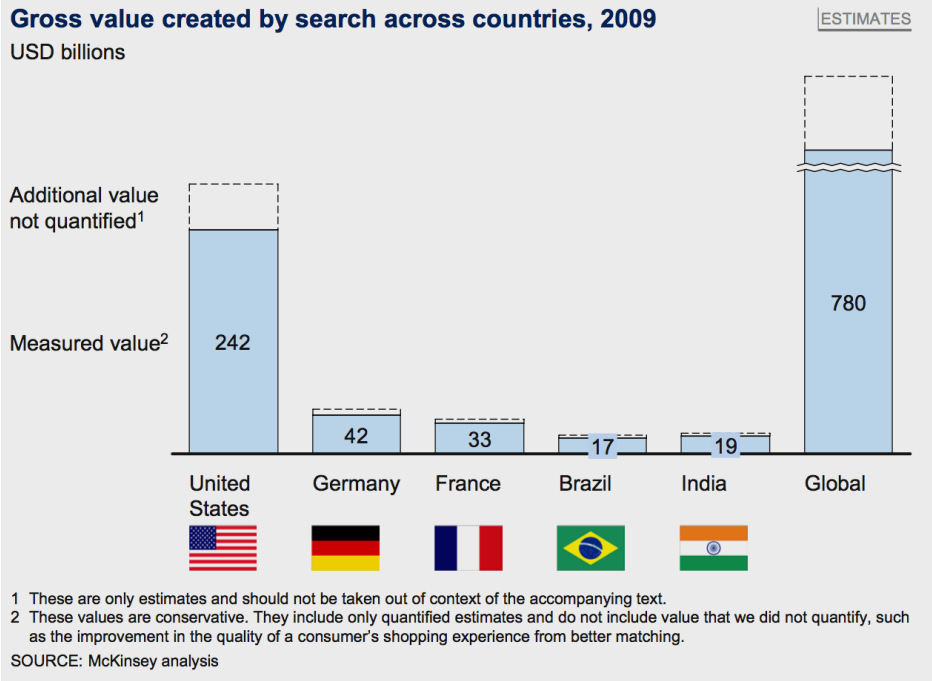
THE ECONOMICS VALUE OF SEARCH

Exactly how much value does search create? To date, no one has looked at its economic contribution at a country level, let alone a global level.

As described earlier, our research looked at nine sources of value for 11 constituencies in five countries. In some cases we were able to quantify the resulting value, and in others we were able to illustrate it only qualitatively. The methodology describes how we used this analysis to arrive at a global estimation of search value.

The analysis showed that search activity had measurable impact approaching gross annual value of $780 billion in 2009. This is a necessarily conservative figure, given that the research was limited in terms of the number of constituencies and sources of value analyzed. It is a significant figure nevertheless, making each search worth $0.50 and equivalent overall to the GDP of the Netherlands or Turkey in 2010.107 Moreover, the speed at which the search environment evolves guarantees that this figure has already been surpassed.

As the following figure, is the statistic picture.



THE FUTURE OF SEARCH

Search is at an early stage of its evolution. For example, searches for video or photographic images still largely depend on text searches by file names or key words, not image searches. Likewise, services that identify scraps of music have not yet found a killer application, and technologies capable of capturing a sign in one language and translating it into another remain rudimentary. All this is work in progress.

At the same time, voice recognition has improved dramatically and is already changing the search habits of many mobile users. In addition, search technology is now being grafted onto other consumer electronics devices, and cameras are being used as scanners to read bar codes and in turn consult databases to do on-the-spot price comparisons. Although the future of search remains hard to predict given the pace of change, it seems likely that its value will only grow as we rely on it more and more.

CONCLUSION

Search technology will need to develop to keep pace with what it has helped unleash, namely, a fast- growing volume of online content: one study estimated that the amount of digital information will grow bya factor of 44 from 2009 to 2020.110 Amid the trillions of gigabytes, the task of search technology will be to make sure the search is still quick and the results relevant. With so much more information available, the danger is that we might reach a point where the value of the time it takes to find what we are searching for is higher than the utility of finding it. Conversely, the more powerful search becomes, the more value can be distilled from a mountain of data.