

**U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE AND TECHNOLOGY
SUBCOMMITTEE ON TECHNOLOGY AND INNOVATION**

HEARING CHARTER

*The Globalization of R&D and Innovation, Pt. III: How do Companies Choose Where to Build
R&D Facilities?*

Thursday, October 4, 2007

10:00 a.m. - 12:00 p.m.

2318 Rayburn House Office Building

1. Purpose

On Thursday, October 4, 2007, the Subcommittee on Technology and Innovation of the Committee on Science and Technology will hold a hearing to consider the factors companies use to locate their research & development (R&D) and science, technology, and engineering intensive facilities. Witnesses will discuss the policies other countries use to attract such facilities, and how to make the U.S. more attractive to companies. Firms now have many options around the globe when deciding where to locate R&D, design, and production facilities. This hearing—the third in a series of hearings examining the impact of globalization on innovation—will explore the trends in, and factors for, site selections for science, technology, and engineering intensive facilities and the policies needed to ensure that the U.S. remains attractive for these investments.

2. Witnesses

Dr. Martin Kenney is Professor of Human and Community Development at University of California, Davis, and Senior Project Director at the Berkeley Roundtable on the International Economy, University of California, Berkeley.

Mr. Mark M. Sweeney is senior principal in McCallum Sweeney Consulting, a site selection consulting firm.

Dr. Robert D. Atkinson is president of the Information Technology and Innovation Foundation (ITIF).

Mr. Steve Morris is the executive director of the Open Technology Business Center (OTBC).

Dr. Jerry Thursby is Ernest Scheller, Jr. Chair in Innovation, Entrepreneurship, and Commercialization at Georgia Institute of Technology.

3. Brief Overview

- Firms weigh many factors when deciding where to site R&D and science, technology, and engineering intensive facilities including market access, costs, intellectual property regimes, customizing products for the local market, proximity to university labs, co-location with

production facilities, quality of R&D personnel, and tax and other incentives provided by the host locality.

- Other countries, industrialized and developing, are courting high-technology facilities to spur innovation, job creation, and economic growth. Offshoring began with lower-skill, labor-intensive tasks, such as call centers, but the practice is moving up the value chain to include R&D and other science, technology, and engineering intensive facilities. And low-cost countries, like India and China, are using targeted industrial policies to attract an increasing share of high-technology facilities and jobs.¹
- Many analysts believe that America's comparative advantage is derived in large part from its ability to stay on the cutting edge of innovation and R&D. They argue that maintaining technological leadership has become even more important as an increasing scope of jobs become offshorable to low cost countries.
- Trends in R&D site selection are not well tracked but recent announcements show that many facilities are being placed outside the U.S. According to *Site Selection* magazine, 22 of the 25 largest facility investments in semiconductor plants since January 2006 have occurred in Asia, including nine of the top 10.

4. Issues and Concerns

What are the trends in site selections for R&D facilities? Is the U.S. continuing to get its proportionate share of new R&D investments? Trends in R&D site selection are not well tracked but recent announcements show that many are being placed outside the U.S. For example, Applied Materials announced the opening of a major R&D complex in China in March 2007. According to *Site Selection* magazine, 22 of the 25 largest facility investments in semiconductor plants since January 2006 have occurred in Asia, including nine of the top 10. A University of Texas study recently found that of the 57 major global telecom R&D announcements in the past year, more than sixty percent (35) were located in Asia, whereas, a meager nine percent (5) were located in the U.S.

An OECD study found that China recently passed Japan as the number two R&D performing country. China's ascent has been very rapid and is driven in part by multinational corporation investments in R&D. The National Science Foundation found that, as of 2002, there are net inflows of R&D into the U.S. by multinational firms. The largest surplus is with Europe, where European-based multinationals spent \$20.7 billion to perform R&D in the U.S., whereas, American-based multinationals only spent \$12.6 billion to perform R&D in Europe.

What factors do site selection managers consider when locating R&D, design, and production facilities? Studies show that many factors are weighed by firms when deciding to site an R&D facility including market access, costs, intellectual property regimes, customizing products for the local market, proximity to university labs, co-location with production facilities, and quality of R&D personnel. The importance of each factor varies across industries—e.g., site selection for pharmaceutical drug discovery is different from semiconductor R&D. Some analysts also believe there is an emerging division of labor where work on incremental improvements to existing products is done in lower-cost countries, but work on new products stays in developed countries.

¹ See, for example, "China Rushes Upmarket: In the face of scandals, Beijing shifts incentives to higher quality exports," *BusinessWeek*, September 17, 2007.

A recent study by Drs. Jerry and Marie Thursby found that labor costs were not the main reason for locating R&D; market factors, proximity to universities, and quality of R&D personnel were all at least important. Other analysts have pointed out that labor costs are the critical differentiator between countries since high quality personnel is a prerequisite for any R&D facility. Low-cost countries, like India and China, are rapidly building the capacity and quality of their R&D and research universities. As a result, those analysts expect that low-cost countries will capture an increasing proportion of R&D and engineering services.

What role do government policies play in site selection? How do tax relief, training support, intellectual property laws, and other policies affect site decision-making?

Countries use a variety of incentives to attract and retain STEM intensive investments, including special economic zones, tax holidays, and in some cases requiring it for market access. As low cost countries are targeting more innovation, tax holidays have played a critical role in spurring information technology investments, especially in countries such as India. As low-cost countries move higher up the value chain, other developed countries are offering even greater incentives to attract and retain R&D investments.

What strategies can local governments use to make their cities and counties more attractive to companies looking for facility locations?

Cities, states, and counties are sometimes able to provide financial incentives to companies interested in locating facilities in their area. However, due to limited budgets, many local economic development agencies must rely on more creative strategies for attracting companies. Local governments often tout proximity to complementary markets, highly skilled local populations, affordable housing, low state taxes, or other features companies might find favorable. However, as competition increases with international locations, local governments must be more proactive in demonstrating the suitability of their states, towns, and counties to companies.