



Open Doors Wider for Skilled Immigrants

Our columnist, lead author of a nationwide study on immigrant entrepreneurs, argues the U.S. must get better at attracting skilled professionals

by [Vivek Wadhwa](#)

Skilled immigrants provide one of the U.S.'s greatest strengths. They contribute to the economy, create jobs, and lead innovation. A new study I helped lead at Duke University's Pratt School of Engineering, where I am an executive-in-residence, shows they are fueling the creation of hi-tech business across our nation and creating a wealth of intellectual property. To keep our global competitive edge, we need to attract more of the world's best and brightest. And we need them to come here and put down deep roots.

In previous columns I have written about our earlier research on globalization and the engineering profession. My students' work shattered myths about the graduation rates of engineers in India and China (see BusinessWeek.com, 12/13/05, "[About That Engineering Gap...](#)"), and the shortage of engineers in the U.S. (see BusinessWeek.com, 11/7/06, "[The Real Problem with Outsourcing](#)").

Our recent research, however, raised concerns about the growing momentum of outsourcing critical research and the impact of that on U.S. competitiveness. So we shifted gears to understand the sources of the U.S. global advantage and learn what the U.S. can do to keep its edge. We decided to study the contribution of students who came to the U.S. to major in engineering and technology and ended up staying, as well as immigrants who gained entry based on their skills.

Continuing Trends

In 1999, Dean AnnaLee Saxenian of the University of California, Berkeley published a study showing that foreign-born scientists and engineers were generating new jobs and wealth for the California economy. But she focused just on Silicon Valley, and this was before the dot-com bust. So we set out to update her research and look at the entire nation. We also wanted to quantify the intellectual contribution of this group.

After thousands of phone calls, our team was able to get responses from 2,054 engineering and technology companies founded over the last 10 years. We asked whether their chief executives or lead technologists were first-generation immigrants and where they were born. We were surprised by what we learned—the trend that Saxenian

documented in Silicon Valley had become a nationwide phenomenon. Here are some highlights of our new research from the report, *America's New Immigrant Entrepreneurs*. (The [report](#) will be available on January 4).

- In 25.3% of technology and engineering companies started in the U.S. from 1995 to 2005, at least one key founder was foreign-born. States with an above-average rate of immigrant-founded companies include California (39%), New Jersey (38%), Georgia (30%), and Massachusetts (29%). Below-average states include Washington (11%), Ohio (14%), North Carolina (14%), and Texas (18%).

- Nationwide, these immigrant-founded companies produced \$52 billion in sales and employed 450,000 workers in 2005.

- Indians have founded more engineering and technology companies in the U.S. in the past decade than immigrants from Britain, China, Taiwan, and Japan combined. Of all immigrant-founded companies, 26% have Indian founders.

- The mix of immigrant founders varies by state. Hispanics constitute the dominant group in Florida, with immigrants from Cuba, Colombia, Brazil, Venezuela, and Guatemala founding 35% of the immigrant-founded companies. Israelis constitute the largest founding group in Massachusetts, with 17%. Indians dominate New Jersey, with 47% of all immigrant-founded startups.

- Chinese (Mainland- and Taiwan-born) entrepreneurs are heavily concentrated in California, with 49% of Chinese and 81% of Taiwanese companies located there. Indian and British entrepreneurs tend to be dispersed around the country, with Indians having sizable concentrations in California and New Jersey, and the British in California and Georgia.

Saxenian's research had shown that from 1980 to 1998, 24% of Silicon Valley startups had an Indian or Chinese founder. The Chinese were starting twice as many companies as Indians in that period. We found that 52.4% of Silicon Valley startups had one or more immigrants as a key founder. Indians had taken the lead in starting companies, but founders originated from all over the world—from Australia to Iran to Vietnam.

The Competitive Edge

What became clear is that skilled immigrants have become a significant driving force in the creation of new businesses in the U.S. and that their economic contributions have increased over the past decade. To understand the intellectual contributions, we analyzed the World Intellectual Property Organization (WIPO) patent databases. When you have a patent with global utility and want to apply for international protection, this is usually where you start.

The results were startling. In 2006, 24.2% of U.S.-originated international patent applications were authored or co-authored by foreign nationals residing in the U.S. These

immigrant non-citizens, as we called them, are typically foreign graduate students completing their PhDs, green card holders awaiting citizenship, and employees of multinationals on temporary visas. This percentage had increased from 7.8% in 1988—and this count doesn't include immigrants who had become citizens.

In other words, it is skilled immigrants who are increasingly providing the intellectual capital that fuels innovation and gives the U.S. a competitive edge in the global economy. The problem is a significant number of those who are contributing this intellectual talent may not be here permanently.

The Bigger Issue

There's a yearly political debate about a temporary worker visa category called the H1B (see BusinessWeek.com, Fall 2005, "[The Visa Maze](#)"). These visas allow U.S. companies and universities to temporarily employ foreign workers who have a bachelor's degree. Businesses argue they need more of these visas in order to remain globally competitive. They say these visas provide a steady flow of highly skilled professionals who are in short supply, and reduce the need for them to move their operations abroad. Opponents argue that these temporary workers displace substantial numbers of experienced U.S. engineers and cause a lowering of wages.

It doesn't matter which side is right here. The bigger issue is that if we do need workers with special skills, we should ask them to come and stay. Let's offer them permanent residence rather than short-term visas. Temporary workers can't start businesses, and we haven't given them the incentive to help us compete globally or to integrate into American society. They can't sink deep roots because their visas limit how long they can stay.

We also want to keep the best and brightest students who complete their graduate studies in our universities. They come here with a global outlook and a hunger to succeed. They understand the culture and values of the countries we're going to be competing with in the new global economy. We want these young and brilliant minds on our shores.

We have a big challenge ahead as we decide how to deal with the millions of unskilled workers who have entered the U.S. without documents (see BusinessWeek.com, 8/21/06, "[If We Can Take One Big Employer Down](#)"). An equally important issue, one that will affect the long term competitiveness of the U.S., is the issue of skilled immigrants who came through the front door.

My view: Let's build really high fences, but have big gates. Let's be very selective in whom we admit, but open the doors to as many as we need.

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