

Inventing across Borders

MAPPING INTERNATIONAL COLLABORATION IN R&D

Talk of globalization often focuses on manufacturing, but the map at right shows that the creation of ideas and products is just as much an international affair. A growing number of applications filed under the international Patent Cooperation Treaty (PCT) have authors located in two or more countries. Each line in the map represents one of these collaborations between 2004 and 2006, revealing the complex architecture of global innovation networks.

Smaller countries that need to tap into bigger markets or the research infrastructure of their wealthier counterparts tend to participate heavily in international collaboration. Nearly half of Switzerland's applications, for instance, involve a coauthor abroad; for Thailand, an export-dependent emerging nation, it's three-quarters. Levels of international collaboration vary more among larger countries. Japan and Korea—whether because of geography, language, or culture—participate less in international coinvention than any other major patenters. The United States is the largest collaborator by volume, making connections with nearly every country on earth. —Matt Mahoney

MAP LEGEND

Lines
PCT applications with coauthor located abroad, 2004–2006

- 1-25
- 26-50
- 51-100
- 101-200
- 201-400
- 401-800
- 801-1,600
- 1,601 or more

Country color
Percentage of PCT applications with co-author located abroad

- N/A
- 0%–9%
- 10%–19%
- 20%–29%
- 30%–49%
- 50%–74%
- 75%–100%

Bubble size
PCT applications authored by top 25 producers

- 150,000
- 100,000
- 50,000
- 25,000
- 10,000
- 1,000

Total patents
Patents with a foreign co-author

Source: Organisation for Economic Cooperation and Development Patent Database

Maps by TOMMY McCALL and AARON KOBLIN

