Project Overview

The Division of Innovative Labor: Features, Determinants and Impacts on Innovative Performance

A. Arora (CMU/Duke/NBER), W. Cohen (Duke/NBER) and J. Walsh (Georgia Tech)

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Motivation

- Social welfare gains from a division of labor in the economy well understood (Smith, 1776)
  - For innovation, can expect gains due to a division of labor from promotion of specialization, and efficiencies from scale, learning and the exploitation of comparative advantage

- Innovation *may be* becoming more open, involving multiple organizations—firms and other organizations (e.g., universities)—in a division of innovative labor (DoIL)

- Despite importance, there’s little broad-based evidence on the extent or nature of the DoIL, nor on its impact on firm innovative performance or technical advance.
  - Little attention to impacts of firms’ place in and links to the broader organizational environment
The project

- By surveying over 20,000 firms in manufacturing and selected service industries, the project will collect the first systematic data on the DoIL
- Will inquire whether the firms innovate—not just do R&D
- Will use the data to:
  - Describe key features of the DoIL.
  - Provide the basis for developing and empirically testing models of the determinants of the DoIL and its effects on firm innovative performance.
Objectives

- Some questions to be addressed
  - Factors driving the extent and impact of the DoIL
    - E.g., strength of IP?
  - The extent to which startups, as compared to established firms, are sources of new ideas.
  - Effect of firms’ use of external knowledge inputs on their innovative performance.
  - Key vehicles through which firms acquire their knowledge inputs (e.g., licensing, contracts, acquisitions, spillovers, collaborative relationships), and impacts on performance
  - Importance of universities as sources of industrial innovation.
- Will explore cross-industry differences
Division of Innovative Labor: How conceived?

• Operationalized coarsely for purposes of survey
• The distribution across firms and other organizations of the following steps in the innovation process:
  • Research/idea generation
  • Development
  • Commercialization
Data

- Sample frame: Dun and Bradstreet
- Sample: Over 20,000 firms in the
  - Manufacturing sector
  - Selected service sector industries, including software and engineering services
- Spanning the full firm size distribution (10+ employees)
- Target Respondents: Typically marketing managers (recall that this is an innovation—not an R&D—survey)
- Method of collection: Phone survey
- Data collected on a line-of-business basis
Byproduct

- Lay foundation for subsequent study
  - => A sample list of ~3,000 innovating firms to be used for a second stage survey, which will be a more detailed inquiry into the nature and determinants of innovation
Illustrative data elements

- Did firm innovate (new/improved): prod/proc/svc
- % of line of business revenues due to products, processes or services that are new to the firm/market
- R&D
- Age, size
- Complementary capabilities: Mkting, Mfg., etc.
- Source of “idea”
  - Other firms, universities, etc.
- Means of acquisition
  - Licensing in, contract
  - Spillovers, collaborative relationships, etc.
- Out-licensing
- R&D Competition
- Supply/demand conditions
Sampling

- Stratified by
  - Industry
  - Size (oversampling large firms)
  - Startup
- Oversampling “innovation intensive” industries, using industry-level innovation rates available from the Community Innovation Surveys in Europe.
Data collection

• Concerns affecting response rate
  • Respondent burden
    • 15 minutes, or 20 if we can interest them
  • Confidentiality
    • Pre-tests suggest greatest concern is on part of large firms who do not want to disclose sales at business unit level
• But target respondents—marketing directors—seem to be eager to talk about their firms’ product or service innovations, and they seem to be knowledgeable about their origins
• Appeal to common interest in benchmarking against other firms in their industry
Data management

• Data will be housed at NORC data enclave that provides for access and confidentiality
• To address the “appropriability” versus the “life is too short” problem, have implemented a “user consortium”— engaging largely younger scholars.