

Tech-Transfer & the 21st Century Public-Private Partnership

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Commentary: Derived from Private-Sector Perspective on Tech-Commercialization

- Active venture-capital (VC) industry player; various early-stage tech start-ups (federally-funded R&D)
- University teaching as active adjunct Professor on Tech-Entrepreneurship & Industrial Innovation
- Technology I-Banking (M&A, IPOs) on Wall-St
- Prior decade-long industrial experience at Bell Labs as R&D scientist and technology manager
- LLNL Industrial Advisory Board; NSF SBIR/STTR

Focus on taking Federally-funded R&D to Commercial Market

- DOE National Lab focus: LawrenceLivermore, OakRidge, Pacific Northwest, Brookhaven, Idaho, NREL; Also DoD, DHS focus
- University tech-transfer: CalTech (MatSci), MIT (BioTech), Columbia (CompSci), Penn (Medical), Princeton (NanoTech)
- Vehicle is \$260M early-stage VC fund with focus on IT, Security, CommTech, Adv-Mat/NanoTech, Energy/CleanTech, BioTech

GAO June 2009 DOE Tech Transfer Study Identified Factors

- Gaps in expertise to consistently identify and develop technologies with commercial market promise
- Lack of funding to develop/test/evaluate technologies from federally-funded R&D to stage that private sector will easily accept
- Challenges in negotiating appropriate tech-transfer agreements (terms/conditions), particularly for small companies & start-ups

Enabling Factors in Transferring Fed-sponsored R&D to Private Sector

Enabling legislation:

- Stevenson-Wydler Technology Innovation Act; Bayh-Dole Act; National Competitiveness Tech-Transfer Act, Federal Tech-Transfer Act, Tech-Transfer Commercialization Act, Energy Policy Act etc

Enabling Mechanisms:

- CRADAs (cooperative R&D agreements), nonfederal WFOs, IP-Licensing agreements, User-facility agreements
- State-driven Economic Development Agencies (EDAs); e.g. Texas, Pennsylvania, New Jersey etc
- Various SBA training & financing programs; Agency SBIRs, STTRs etc

Globalization and the International/Domestic elements

- Manufacturing within USA versus international/global
- Sourcing core-enabling technologies from global or international sources (Israel, Europe, Asia etc)
- International business development issues: ITAR, export control issues, CFIUS etc

Some Recommendations (SME/Startup Centric)

- Existing tech-transfer legislation solid/concrete and should not be modified; instead more focus on improvement of best-practices
- Subsidies for specific sectors (energy/environment etc); Tax breaks & incentives, grants, loans etc for specific geographies (underserved)
- SMEs, Angel investors and VC firms willing to take early-stage risks (with university & National Lab tech); better align risk & reward, for-profit/nonprofit motivations; minimize institutional system barriers/challenges
- Private-Sector interfaces such as EIRs for Universities and National Labs
- More Maturation Funding programs and Incubators/Accelerators
- Standardized tech-transfer & IP licensing agreements (pre-approved T&Cs that make sense); Umbrella CRADAs & IP-bundling for multi-Lab deals
- More focus on Education/Training (entrepreneurship, innovation, & technology commercialization curricula for scientists and engineers)
- Better Internet-based info-sharing (web clearing-house across universities/labs with private sector)
- Better Metrics/performance-reporting to measure/evaluate innovation hubs
- Showcase Success stories (as templates for future, e.g. internet/dotcom)
- Support for Energy/CleanTech (capital-intensive/regulatory-driven sector)

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