

Government Brokerage of Innovation Networks

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The following slides are not identical to the ones presented to the NAS Innovation Policy Forum on 11.14.18; in the interests of copyright protection, some images have been deleted.

Networks superior
to markets and hierarchies
when demand is unstable, tasks are
interdependent, competencies are
dispersed, and knowledge is rapidly evolving.

Networks are
more flexible than
corporate hierarchies and
more reliable than anonymous
markets—they're able to coordinate the
contributions of independent parties to
collaborative ventures in volatile environments.

Advanced Regenerative Manufacturing Institute

Manchester, NH

DEKA, United Therapeutics, AutoDesk, Rockwell Automation, UNH, etc.

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*Efforts to create “the manufacturing equipment, procedures and the know-how to move regenerative medicine from a science experiment to mass production” grew out of a “**chance meeting**” between Dean Kamen of DEKA and Martine Rothblatt of United Therapeutics in early 2015.*

Colin Woodard, 2017

Are chance meetings necessary? Or might government take the lead?

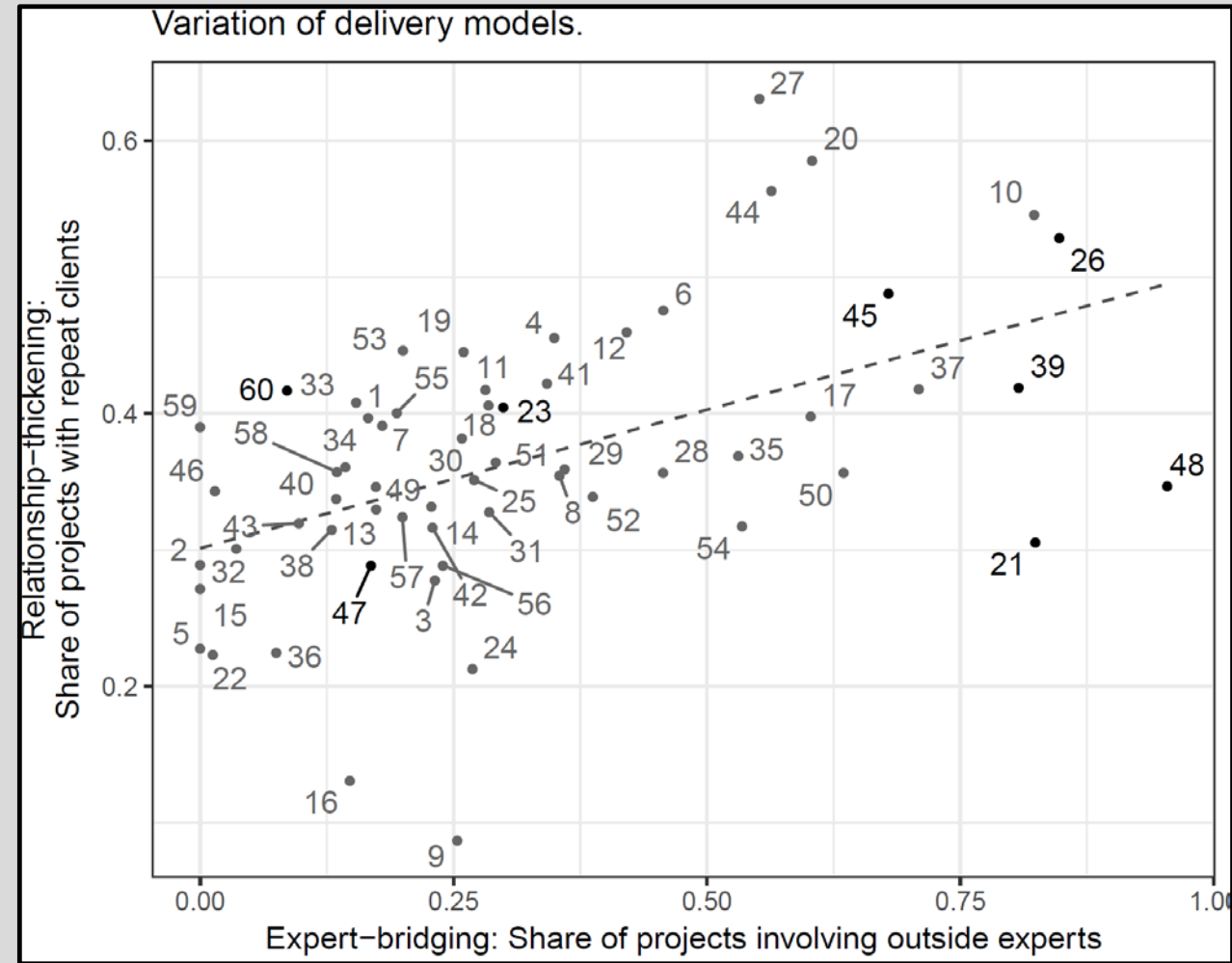
- DARPA program managers serve as “system integrators” who “re-architect social networks” (Fuchs 2010) in order to promote innovation.
- FCC as a “collaborative public space” where competitors and collaborators are encouraged to co-develop technology (Lester & Piore 2004).
- National Laboratories promote “co-location and clustering” between their personnel and private investors via incubators, CRADAs, entrepreneurial separations, etc. (Schrack 2011).
- SBIR personnel serve as “matchmakers” who link winners to VCs, contractors, government procurement officers, etc. (Keller & Block 2012).
- NIST/MEP yields largest returns when extension agents act as “institutional or associational entrepreneurs” who build networks in their “industrial ecosystems” (Brandt & Whitford 2017; Brandt, Schrank, & Whitford 2018) .

Manufacturing Extension Partnerships

- Background: NIST program designed to disseminate new techniques and technologies to SMEs; funded by federal-state-private cost-share; present in all 50 states and Puerto Rico
- Dilemma: Breadth of coverage (i.e., more clients) versus depth of coverage (i.e., more contact per client).
- Solution: Catalyst brokerage, i.e., bring in third-party experts and serve as mentors and relationship managers.

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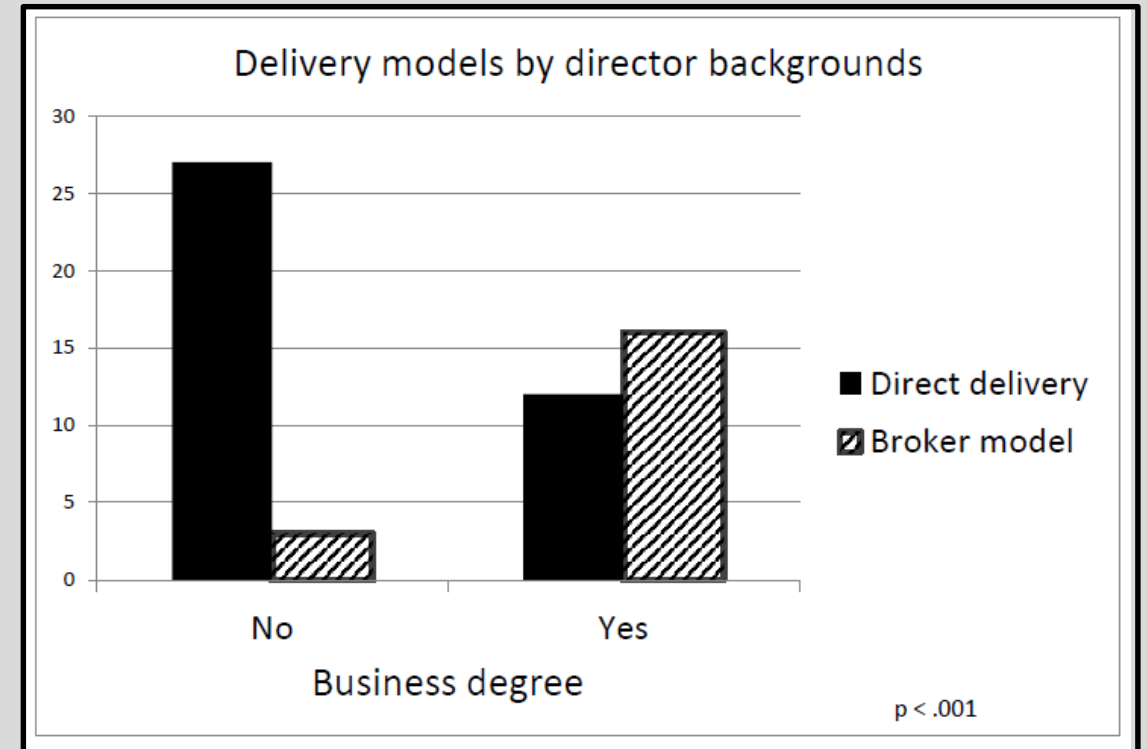
From Brandt et al. 2018

Lessons for science and innovation policy

- Impact. Both strategies—one-off direct delivery and long-term brokerage—are valuable.
- Incentives. Brokerage is still a risky strategy for individual centers.
- Metrics. Current findings are based on “dirty” administrative data; refinement demands different metrics.
- Personnel. Brokerage is in part a product of center director background.

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CMTC example: “I don't think boards hire folks for their service delivery model vision, but engineers are like economists and accountants. Minimal people skills so collaboration is not in their DNA.”