

Advanced Technology Program Data at the NORC Enclave

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Presentation Outline

- ATP Overview
 - Mission and key features
 - Summary statistics
 - Project selection and assessment
- Datasets Overview
 - ATP's Reporting Systems for Awardees
 - Special Surveys
 - Applicant surveys
 - Joint venture survey
- Research Underway
- What's Coming

ATP Mission ...

To ***accelerate*** the development of ***innovative*** technologies for ***broad*** national ***benefit*** through partnerships with the private sector



A New Direction...

- On August 9, 2007, the President signed the America COMPETES Act which abolished ATP and created the Technology Innovation Program (TIP)
- Projects selected in the 2007 competition will continue to be governed by the terms and conditions established for ATP
- Capture lessons learned from ATP evaluation to inform framework for TIP

ATP has had much experience -- some basic facts

ATP received:

- 7,530 proposals submitted to 45 competitions, requesting \$15.9 B

ATP awarded:

- 824 projects with 1,581 participants and as many subcontractors
- 227 joint ventures and 597 single companies
- \$4.6 B of high-risk research funded
 - *ATP share = \$2.4 B*
 - *Industry share = \$2.2 B*
- Small businesses are thriving
 - *67% of projects led by small businesses*

ATP documented:

- Over 1,500 issued patents
- Over 375 projects to date report new technologies under commercialization
- Survey of 36 projects generated revenues and cost savings of more than \$2.7B, more than the ATP share of funding for the history of the program

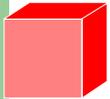
Selection Criteria

- Scientific and Technological Merit (**50%**)
 - Technical innovation
 - High technical risk with evidence of feasibility
 - Detailed technical plan
- Potential for Broad-Based Economic Benefits (**50%**)
 - National economic benefits
 - Need for ATP funding
 - Pathway to economic benefits

Two Ways to Apply: Single Company...

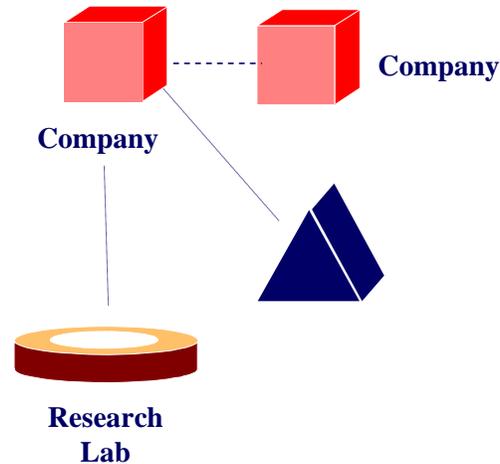
Single Company:

Alone



Company

With Subcontractors

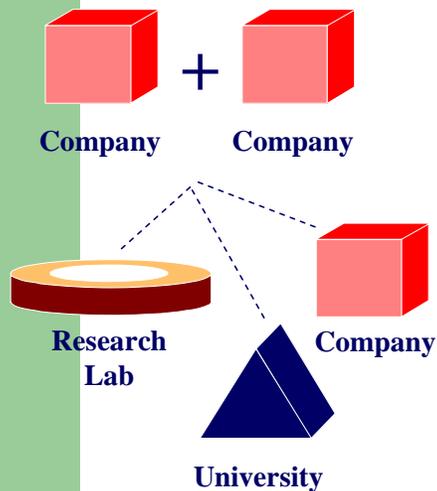


- For-profit company
- 3-year time limit
- Maximum award is \$2 M
- Company pays indirect costs (may contribute to direct costs but is not required)
- Large companies cost share at least 60% of total project cost (direct and indirect costs)

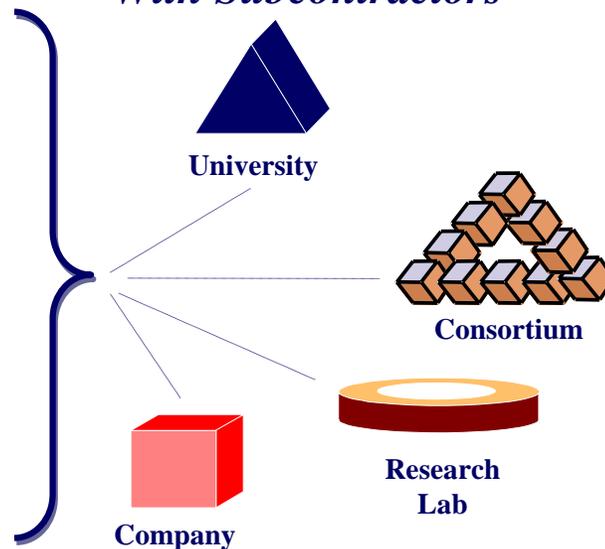
...or as a Joint Venture

Joint Venture:

Formal Alliances



With Subcontractors



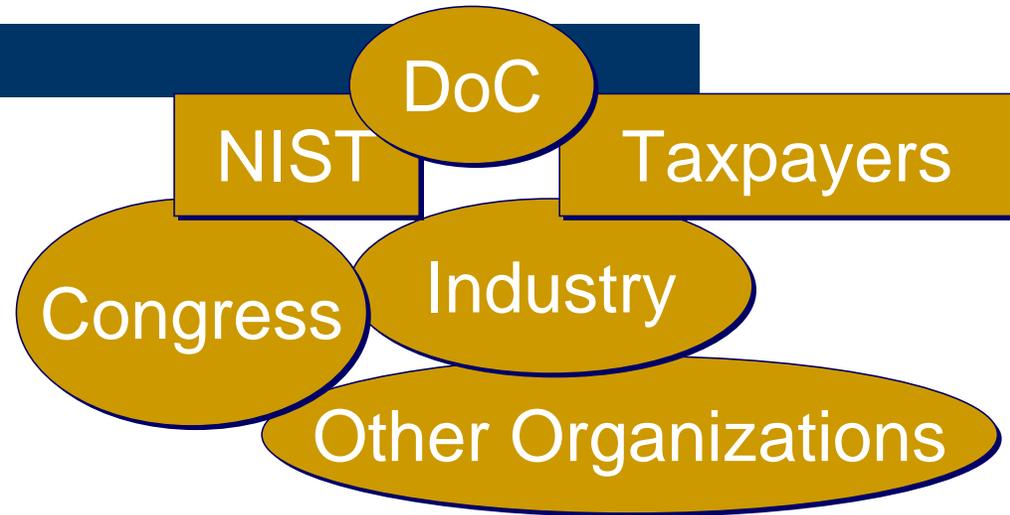
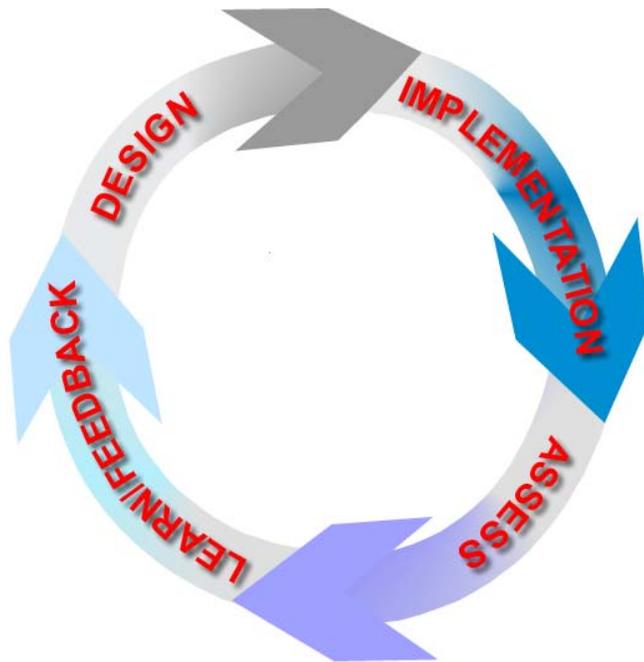
- At least 2 for-profit companies; other non-profits and universities may participate
- 5-year time limit
- No fixed limit on award amount (other than availability of funds)- Average \$10M
- Industry share must be more than 50% of total cost (direct and indirect costs)

We Assess:

- To understand contribution to the US innovation system

- To meet external requests for Program results

- To use as a management tool



- To develop innovative methodologies to measure the impact of public R&D investment

ATP Reporting System

- Data collected through various reporting systems
- Surveys administered during the life of project funding and post ATP funding
 - During ATP funding (BRS data)
 - At the start of the project (Baseline Report)
 - Annual anniversary reports (Annual 1, Annual 2, Annual 3, Annual 4) – the number of annual reports administered depend upon the length of the ATP project
 - At the end of the ATP project (Closeout Report)
 - After ATP funding (PPS data) – 2, 4, and 6 years after funding ends

BRS Data – During ATP Funding

- Topics
 - Project characteristics
 - Company (participant) characteristics
 - Technical measures of success
 - Commercial measures of success
 - Collaboration efforts
 - Commercialization planning and strategies
 - Counterfactual analysis (ATP attribution – What would have happened in the absence of ATP?)
- Levels of aggregation
 - Questions at project level, participant level, and product application level
- Survey modes
 - Diskette (DOS) mailed to respondents for projects awarded from 1993 to 1998
 - Web-based survey for projects awarded from 1999 to the present

BRS Data – During ATP (cont'd)

- Survey modifications
 - Three versions of the survey (two modifications) based upon ATP data analysis and feedback from respondents and ATP project managers
 - Projects selected for funding from 1993 to 1998
 - Projects selected for funding from 1999 to 2003
 - Projects selected for funding from 2004 to present
 - Over 1200 organizations represented
- Timing
 - Annual surveys from beginning to end of project
 - Some questions asked in every report and others only at the beginning or end of the project

PPS Data – Post ATP Funding

- Topics
 - Tracking the ATP-funded technology
 - Continued R&D efforts
 - Technical measures of success
 - Commercial measures of success
 - Collaborations (sustained and new)
 - Commercialization planning and strategies
 - Barriers to adoption of the technology
- Levels of aggregation
 - Questions at project level, participant level, and product application level
- Survey modes
 - Telephone survey from 1998 to 2003
 - Telephone and Web-based survey (Web-based for a portion of the survey from 2004 to the present)

PPS Data – Post ATP (cont'd)

- Survey modifications
 - Three versions of the survey (two modifications) based upon ATP data analysis and feedback from respondents and ATP project managers
 - Surveys conducted from 1998 to 2003
 - Survey conducted in 2004
 - Survey conducted in 2005
 - About 700 organizations represented
- Timing
 - Surveys at 2, 4, and 6 years after the completion of the ATP project

ATP Special Surveys – Applicant Surveys

- Survey of ATP Applicants 2000
 - Survey results from 346 awarded and non-awarded companies
 - Surveyed approximately 18 months after the ATP competition
 - 74 percent response rate (96% A, 69% N)
- Survey of ATP Applicants 2002
 - Survey results from 587 awarded and non-awarded companies
 - Surveyed approximately 18 months after the ATP competition
 - 66 percent response rate (90% A, 61% N)
- Survey of ATP Applicants 2004
 - Survey results from 432 awarded and non-awarded companies
 - Surveyed approximately 18 months after the ATP competition
 - 46 percent response rate (100% A, 44% N)

ATP Special Surveys – Applicant Surveys

- Key Research Questions
 - Why companies apply to ATP?
 - How projects selected for funding differ from projects not selected?
 - How R&D projects proposed to ATP differ from “typical” R&D projects at the company?
 - Does ATP funding help secure funding from other sources?
 - What happens to non-awarded R&D projects?

ATP Special Surveys – JV Survey

- Survey of ATP Joint Ventures
 - Survey results from 397 companies participating in ATP Joint Ventures funded between 1991 and 2001
 - Survey administered in 2003
 - 90 percent response rate
- Key Topics
 - Motivation for forming ATP joint venture
 - Determinants of success in research joint ventures
 - Structure, governance, and trust in research joint ventures
 - Measures of technical and commercial success

Research Underway at the Enclave

- The program funded seven research projects using ATP data at the enclave
- The program has also granted access to the enclave to researchers not receiving grant funding
- Broad geographic representation
 - NBER
 - Ohio State University
 - Brandeis University
 - Duke University
 - American University
 - Samford University
 - University of North Texas
 - SUNY at Albany
 - Washington State University
 - ...more to come

Research Underway at the Enclave (continued)

- Knowledge and Innovation
 - *Human Capital Complementarities: The Role of Specialists and Generalists in Innovation*
 - *The Impact of Crisis Events on the Knowledge Creation Process*
- Start-Ups and Strategic Alliances
 - *Too Much of a Good Thing? Meaning Construction, Resource Mobilization, and Field Emergence*
 - *Measuring the Liability of Newness*
 - *Breaking Up is Hard to Do: The Role of Partner Goal Change on Strategic Alliance Outcomes*
- Research Joint Ventures
 - *Radical Innovation in Joint Ventures*
 - *Driving Collateral Learning from Joint Ventures*

What's Next?

- Researchers recognize the importance of linking to additional data sources to improve the value of the research
- Challenging trade-off to maximize outside data value with confidentiality protection
- Currently working with NBER on a data matching effort for patents and publications
- Webinars and Collaboratories communicating research efforts and results