

PART 1

Project Characteristics

This report provides an overview of the first 100 ATP-funded projects to reach completion. These projects reflect an investment of more than \$408 million that was shared about equally by ATP and industry.

Of the initial 100 projects, 60 were led by small businesses that submitted single-company-applicant proposals to ATP. Eighty-two involved collaborative relationships with other firms, universities, or both. Slightly more than 75 percent were funded in ATP’s General Competitions.

In terms of classification by type, 30 percent of the technologies were “Electronics, Computer Hardware, or Communications.” “Manufacturing,” “Advanced Materials and Chemicals,” and “Information Technology” each accounted for about 20 percent, and “Biotechnology” projects constituted the remaining.

Single Applicants and Joint Ventures

“Single-applicant projects,” which make up 84 percent of the total included in this report, are those proposed by a single company; these projects were subject to an upper limit on ATP funding of \$2 million and a time limit of 3 years. The predominance of single-applicant projects in this report occurs for two reasons. First, projects led by single companies make up the majority of all projects. Second, the constraint on the length of single-applicant projects means they end sooner than most joint ventures; thus, they reached completion sooner.

Sixteen percent of the 100 projects were joint ventures. Each of these projects had a minimum of two for-profit companies sharing research and costs for up to 5 years. Typically, the joint-venture membership included other for-profit companies, universities, and nonprofit laboratories. These projects, free of the funding constraint, tended to take on larger problems for longer periods of time.

Project Leaders

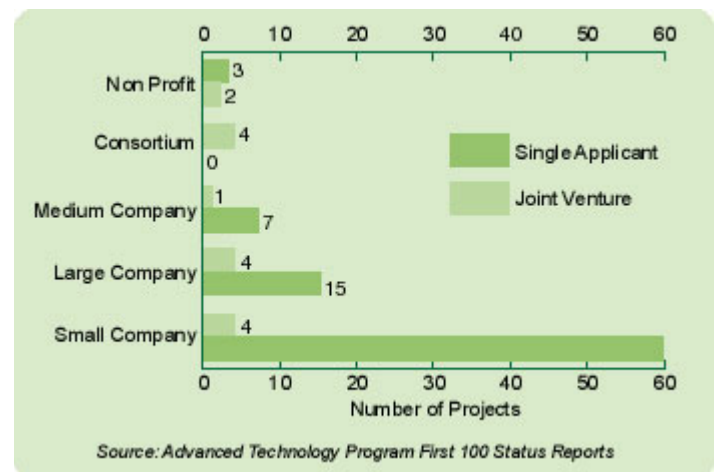
Figure 1.1 illustrates how project leadership of single-applicant and joint-venture projects was distributed among the various types of organizations. Small companies led most of the projects—60 of the 84 single-applicant projects and 4 of the 16 joint-venture projects. “Small” follows the Small Business Administration’s definition and includes companies with fewer than 500 employees. Large companies—defined as Fortune 500 or equivalent firms—led 15 of the single-applicant projects,

or 18 percent, and 4 of the joint ventures, or 25 percent. Medium-sized companies led only seven single-applicant projects and one joint venture. Consortia led four of the joint-venture projects. Nonprofit institutions led two of the single-applicant projects¹ and three joint ventures.

A Variety of Technologies

The 100 completed projects fall into the five technology areas used by ATP for classification purposes.

Figure 1.1 Distribution of Single Applicant and Joint Venture Projects by Type of Leadership



¹ From the 1991 competition, when nonprofits were eligible to lead ATP projects.

Figure 1.2 Distribution of Projects by Technology Area

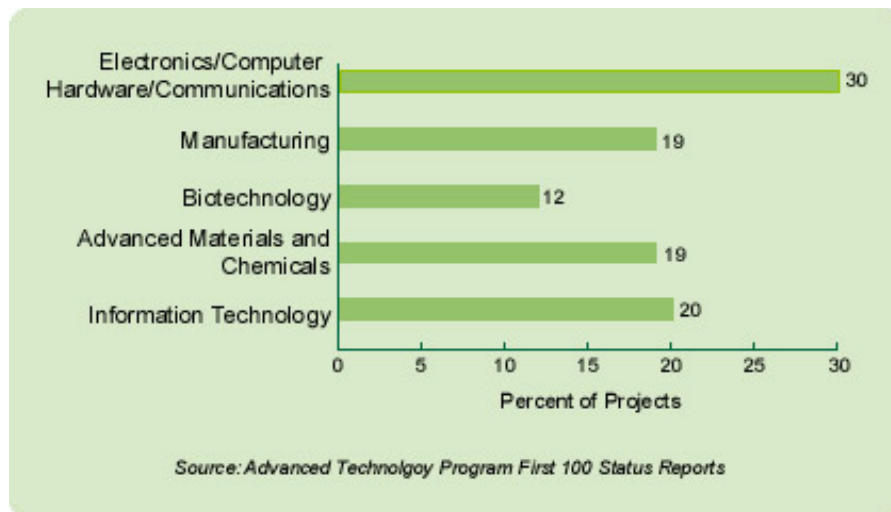


Figure 1.2 shows the percentages of completed projects by technology area. The highest concentration, accounting for 30 projects, or 30 percent of the total, is in “Electronics, Computer Hardware, or Communications.” This category includes microelectromechanical technology, microelectronic fabrication technology, optics and photonics, and other electronics projects.

“Manufacturing,” “Advanced Materials and Chemicals,” and “Information Technology” account for similar shares, 19 to 20 percent each, of the 100 projects. The Manufacturing category includes areas such as energy conversion and energy generation and distribution, in addition to machine tools, materials handling, intelligent control, and other discrete manufacturing. The Advanced Materials and Chemicals category includes the subcategories of energy resources/petroleum, energy storage/fuel cell, battery, environmental technologies, separation technology, catalysis/biocatalysis, and other continuous manufacturing technologies, as well as metals and alloys, polymers, building/construction materials, and other materials.

The lowest concentration of projects is in the area of Biotechnology, which accounts for 12 percent of the 100 projects. The category of biotechnology includes areas such as bioinformatics, diagnostic and therapeutic, and animal and plant biotechnology.

The technology make-up of these 100 projects differs from that of the larger ATP portfolio of projects in part because the composition of ATP applicants and awardees over time may change. Of the first 100 completed projects, 77 percent come from ATP’s General Competitions that were open to all technologies, while 23 percent come from ATP’s focused program competitions, which were held from 1994 through 1998. These competitions funded technologies in selected

areas of focus, such as in Motor Vehicle Manufacturing Technology and Digital Video in Information Networks. It should be noted that while the five major technology areas are used to classify the projects, most of the projects are not easy to classify. Most ATP projects involve a mix of technologies and interdisciplinary know-how.

Collaborative Activity

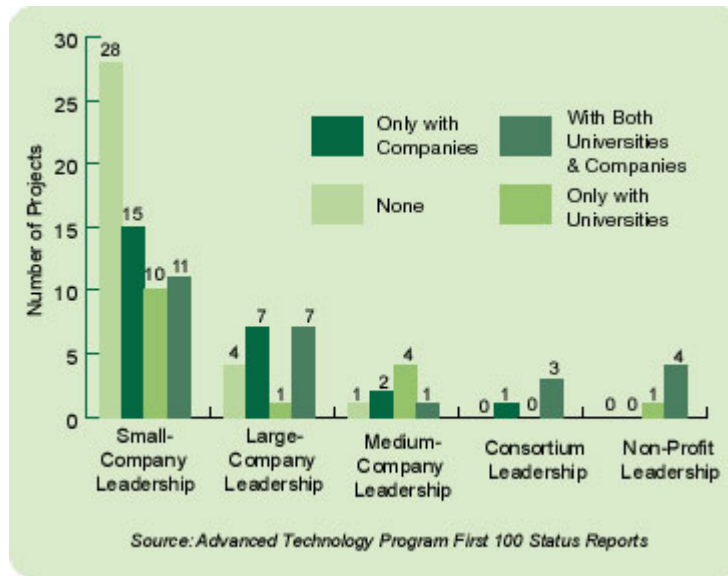
Although only 16 percent of the 100 projects were joint ventures, 82 percent of all projects had collaborative arrangements. As shown in Table 1.1, 42 percent of the projects involved close research and development (R&D) ties with universities. Fifty-one percent reported collaborating on R&D with companies or other nonuniversity organizations. Slightly more than half the projects formed collaborative relationships with other organizations for commercial pursuit of their ATP-funded technologies. Twenty-six percent of projects had collaborative relationships with both universities and nonuniversities for either R&D or commercial purposes.

For more detail, Figure 1.3 illustrates the types of collaboration undertaken by projects with different forms of project leadership. It highlights the fact that under all forms of project leadership, projects were highly likely to involve collaboration with other companies. About 35 percent of the projects led by small and large companies involved university collaboration, while the share rose to 62 percent for projects led by medium-sized companies, and 75 percent for consortium-led projects.

Costs of the Projects

As shown in Table 1.2, ATP and industry together invested in excess of \$400 million on the 100 projects. Overall, they shared almost equally in project costs, with ATP providing a slightly larger share. ATP spent an

Figure 1.3 Number of Projects by Type of Collaboration and Type of Project Leadership



average of \$1.78 million per single-applicant project and an average of \$3.53 million per joint-venture project. Across the 100 projects, the average total cost (ATP plus industry) per project was \$4.09 million. Estimated benefits attributed to ATP from just a few of the 100 projects for which quantitative economic benefits have been provided exceed ATP’s funding for all of the 100 projects. In addition, there is considerable evidence of large project benefits that have not yet been quantified.

Approximately two-thirds of single-applicant projects had total research costs under \$3 million. These projects had an ATP share that ranged from a little more than \$.5 million to \$2 million. Over 50 percent of the joint-venture projects had total research costs greater than \$3 million and just under 50 percent were below \$3 million. One-third of them had total research costs greater than \$5 million, and one project had total research costs greater than \$30 million. ATP’s share of these costs were \$2 million or more for 60 percent of the projects and were \$5 million or higher for 25 percent. For one of the projects, ATP’s share exceeded \$10 million. Joint ventures, which made up only 16 percent of the total number of projects, accounted for 27 percent of total ATP funding.

Table 1.1 Collaborative Activity

Type of Collaboration	Percentage
Collaborating on R&D with other companies or nonuniversity organizations	51%
Close R&D ties with universities	42%
Collaborating on R&D with other companies or nonuniversity organizations OR close R&D ties with universities	67%
Collaborating with both universities and nonuniversity organizations	26%
Collaborating on commercialization with other organizations	51%
Collaborating in one or more of the ways identified above	82%
<i>Note: This assessment of collaborative relationships likely understates the number because it focused on the project’s lead organization and probably missed some of the informal collaborative relationships of other participants.</i>	
<i>Source: Advanced Technology Program First 100 Reports</i>	

Table 1.2 ATP Funding, Industry Cost Share, and Total Costs of 100 Completed Projects

	Single Applicant Projects	Joint Venture Projects	Total Projects
ATP Funding (\$ millions)	149.6	56.4	206.0
Industry Cost Share (\$ millions)	146.8	55.8	202.6
Total Project Costs (\$ millions)	296.4	112.2	408.6
ATP Share of Costs	50%	50%	50%
Industry Share of Costs	50%	50%	50%
Average Project Funding Provided by ATP (\$ millions)	1.78	3.53	2.06
Average Project Cost-Share Provided by Industry (\$ millions)	1.75	3.49	2.03
Average Project Funding Provided Overall (\$ millions)	3.53	7.01	4.09

Source: Advanced Technology Program First 100 Status Reports