

# THE ECONOMIC CONTRIBUTION OF THE DEPARTMENT OF THE NAVY TECHNOLOGY TRANSFER PROGRAM

## Executive Summary

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**T**echnology transfer (T2) agreements can have significant economic benefits in the civilian sector, especially for small, entrepreneurial start-up companies that are the backbone for innovation and economic growth.

The Indiana Business Research Center (IBRC) collected operating and financial data for more than 100 T2 agreements (“deals”) with naval laboratories. These T2 deals are directly responsible for 670 jobs. Of the 103 agreement partners—predominantly firms but also including universities and nonprofits—most provided employment data, reporting that these deals created or maintained over 400 jobs (see **Table 1**). The IBRC estimates that T2 agreements directly supported more than 260 additional jobs based on the expanded economic output associated with the agreement partners that did not answer the employment questions.

Two-thirds of the agreement partners that participated in the survey were small, with fewer than 100 employees, as shown in **Table 2**. More than half of the small T2 partners reported that, on average, 12 jobs were created or retained as a result of their T2 agreements, highlighting the noteworthy effect that T2 agreements can have on small, innovative start-up companies.

**Table 1: Employment Directly Attributed to T2 Agreements**

Agreement Type	New Jobs	Retained Jobs	Total
CRADAs	117	66	183
PLAs	129	94	223
<i>Subtotal as Reported by Survey Respondents</i>	246	160	406
<i>Estimated employment for respondents that did not report employment statistics</i>			264
<i>Total Direct Employment</i>			670

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The estimated direct economic output associated with these 103 agreements totaled \$200 million. The economic ripple effect of this output generated an estimated \$345 million in additional economic activity. Thus, the economic impact of these T2 deals for the civilian economy totaled over a half billion dollars (in 2009 dollars). The federal, state and local taxes generated by this economic activity are estimated to total \$60 million, averaging nearly \$614,000 per agreement (see **Table 3**).

Of the 103 deals considered in the report, 64 percent were cooperative research and development agreements (CRADAs) and 30 percent were product license agreements (PLAs), with the balance consisting of limited purpose-CRADAs (LP-CRADAs). On average, a CRADA supported over eight jobs while a PLA, on average, supported 10 jobs.

Compared to the U.S. average compensation per worker of \$56,100, the direct T2 compensation per full-time job averaged \$79,300 per year.

In contrast to a return on investment (the percentage return of a one-time capital expenditure that is generated annually from an investment) or a benefit-cost analysis (the comparison of the total dollar cost of a project or activity with the total dollar benefits), the “economic impact” of a project or a company is a one-year snapshot that measures the dollar and employment magnitude of the economic activity generated by that project or by the presence of that company. The economic impact, or economic footprint, can be compared to the size of an economy (gross domestic product) or the number of people employed in a region, state or country.

The estimated economic impact presented in this report applies only to the agreement partners that participated in the study. The economic footprint of these 100-plus deals cannot be considered averages for all Department of Defense T2 agreements or agreement partners. It would be inappropriate, therefore, to extend the results to the universe of all T2 agreements.

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**Table 2: T2 Respondents by Company Size**

Size of Organization	Respondents %
	N=84
Very Small (1 to 9 employees)	32%
Small (10 to 99 employees)	35%
Medium (100 to 499 employees)	16%
Intermediate (500 to 999 employees)	0%
Large (1,000 to 4,999 employees)	5%
Very Large (5,000+ employees)	13%

**Table 3: Economic Impacts of T2 Agreements**

N=103	
Direct Economic Effect	\$200 million
Estimated Economic Ripple Effects	\$345 million
<i>Total Economic Impact</i>	\$545 million
Estimated Taxes Generated from Economic Activity	\$60 million
Average Compensation per Full-Time Job	\$79,300/year



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