U.S. Customs and Border Protection

# *Customs-Trade Partnership Against Terrorism*

C-TPAT

# *2011 Costs & Savings Survey*

## Report of Results

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# I. Acknowledgements

This report covers the 2011 C-TPAT Costs & Savings Survey, which was a follow-up to the 2010 Membership Survey. The successful completion of the C-TPAT Costs & Savings Survey was made possible by many dedicated individuals with U.S. Customs and Border Protection (CBP) and the Center for Survey Research (CSR) at the University of Virginia.

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Pete Furia and Debbie Rexrode shared duties in the areas of project management and coordination. Dr. Furia was the lead writer on the report and assisted in the data analysis portion of the project. He also managed the initial exploratory telephone calls to selected members to help design the project and helped coordinate the translation of the survey. Ms. Rexrode edited and formatted the web questionnaires and paper worksheet booklets, supervised the mailings to respondents, and managed all email contact with respondents throughout the project. She also helped develop the protocol for the exploratory phone interviews and coordinated the WebEx focus groups that were used to help develop the survey instrument.

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The Center for Survey Research, a unit of the Weldon Cooper Center for Public Service at the University of Virginia, is responsible for any errors in this report. Inquiries may be directed to: Center for Survey Research, University of Virginia, P.O. Box 400767, Charlottesville, VA 22904-4767. The Center can be reached by telephone at 1-434-243-5222, by e-mail to surveys@virginia.edu, or through the World Wide Web at http://surveys.virginia.edu.

# II. Executive Summary

## Overview

The 2011 C-TPAT Costs & Savings Survey (CSS) is a drill-down view of the detailed costs and savings experiences of a small sample of C-TPAT members. The CSS was developed and executed separately from the larger membership survey that was done in 2010. This approach was intended to enhance the response rate of the 2010 membership survey by simplifying it, and it was successful – the response rate to the 2010 membership survey was substantially higher than in the 2006 survey.

The tremendous range and detail of the experiences reported in the 2011 CSS illustrates very well the variety and scope of issues confronted by C-TPAT members. But this range also limits the generalizability of the results. For example, direct cost savings as a result of C-TPAT membership ranged from $50 to $52 million[1] among the roughly one-quarter of respondents who reported direct cost savings. Implementation costs ranged from $280 to $4 million among the three-quarters of respondents who said they incurred such costs.

Larger dollar amounts are correlated with larger companies, but not to the degree that one might anticipate. Much depends on the unique situation of the C-TPAT member firm. Nevertheless, there are some important generalizations and patterns that are supported by the data, some of which are summarized below.

But there is an overarching theme in the CSS: The value of C-TPAT membership cannot be measured adequately in terms of dollars and cents. On the one hand, there are indeed implementation costs and maintenance costs, which are offset by savings in only a minority of cases. Many respondents report that they do not see the expected improvements in processes that impact their profitability such as faster border crossings, front-of-the-line programs and less frequent inspections. At a minimum, these results provide some useful experiences for other firms considering C-TPAT membership for themselves. These fiscal measures also might be seen as a lack of membership value.

But support for the program among C-TPAT members is strong. In both the quantitative and qualitative parts of the data, it is clear that C-TPAT members take pride in their membership, see it as an industry best practice and value it for reasons that go beyond a purely monetary frame of reference. C-TPAT membership seems to be something that companies view as necessary to being a responsible and reputable member of the business community.

## Description of Surveyed Companies

All 2011 CSS survey activities were based on 1,488 respondents to the 2010 C-TPAT Membership Survey who gave permission to be re-contacted in the near future. Fifty-five of them were sampled and asked to participate in various stages of the CSS questionnaire development process. The remaining 1,433 comprised the sampling frame for the CSS.

At the time of the 2010 C-TPAT Membership Survey, C-TPAT had 8,166 business partners. For the purpose of the 2010 study, these C-TPAT business partners were grouped into four categories:

1) Importers (3,822 or 47%)
2) Carriers (2,270 or 28%), including U.S./Canada Highway Carriers, U.S./Mexico Highway Carriers, Rail Carriers, Sea Carriers, and Air Carriers
3) Service Providers (1,400 or 17%), including U.S. Marine Port Authority and Terminal Operators, U.S. Air Freight Consolidators, Ocean Transportation Intermediaries or Non-Vessel Operating Common Carriers (NVOCC), and Licensed U.S. Customs Brokers
4) Foreign Manufacturers (674 or 8%)

The final sampling frame of 1,433 partners for the 2011 CSS was divided in the same four categories:

1) Importers (515)
2) Carriers (443)
3) Service Providers (267)
4) Foreign Manufacturers (208)

The response distribution by business type in the 2011 CSS somewhat overrepresents foreign manufacturers and service providers, and somewhat underrepresents importers. Specifically,

[1] All dollar amounts in this report are U.S. dollars.

29.9 percent of respondents to the 2011 CSS are importers, 24.5 percent are carriers, 29.9 percent are service providers, and 15.6 percent are foreign manufacturers. The larger absolute numbers of responses from Service Providers and Foreign Manufacturers in the CSS are welcome because they increase CBP's confidence in the descriptions of these types of businesses.

Respondents who completed the survey were prompted to review several data items from the 2010 survey that described their company size, type and other data. Respondents to the CSS had the chance to correct these items. For nearly two-thirds (65.4%) of the responding companies, the annual revenue reported on the CSS was less than 100 million dollars. For four in ten (41.8%), the annual revenue reported was less than 10 million dollars.

## Estimated Costs of Border Delays

Small numbers of importers and carriers reported their estimates of the costs of border delays in four different modes of transport. The median costs were $200 for land delays, $500 for air delays, $1,000 for rail delays and $1,500 for sea delays.

## Percentage of Contracts Requiring C-TPAT Certification

Respondents were asked, in their experience, what percentage of contracts for supply chain relationships these days require bidders to be C-TPAT certified. Eight percent said that one hundred percent of contracts require C-TPAT certification and nine percent said that no contracts require C-TPAT certification. About forty percent said that anywhere from one to forty-five percent of contracts require C-TPAT certification and about thirty percent said that anywhere from fifty to ninety-nine percent of contracts require C-TPAT certification.

## Costs to Implement the C-TPAT Program

There were 110 respondents (75%) who reported a dollar value for implementation costs related to C-TPAT membership. The median cost – among those who reported a cost – was $17,370.[2] Reported implementation costs ranged from $280.00 to more than $4 million.

## Costs to Maintain the C-TPAT Program

There were 91 respondents (62%) who reported a dollar value for maintenance costs related to C-TPAT membership. The median cost – among those who reported a cost – was $9,000. Reported maintenance costs ranged from $45.00 to $815,000.

## Time Savings from the C-TPAT Program

There were 38 respondents (26%) who reported a number of person-hours for time savings related to C-TPAT membership. The median time savings – among those who reported savings – was 373 person-hours annually. Reported time savings ranged from 25 to 48,000 person-hours annually.

## Cost Savings from the C-TPAT Program

There were 35 respondents (24%) who reported a dollar value for cost savings related to C-TPAT membership. The median cost – among those who reported a cost – was $5,350. Reported cost savings ranged from $50.00 to $52 million[3].

## Net Savings or Costs

Respondents were asked to consider the financial costs and financial savings related to C-TPAT membership and summarize them as net positive, neutral, or net negative. After excluding about twenty percent who said they could not determine this or preferred not to say, roughly one-third of the respondents fell into each summary condition (net positive, neutral, net negative).

## Intangible Value of C-TPAT

The last question in the survey asked respondents to "tell us more about how you would put a value on C-TPAT membership." The answers to this

[2] As with most of the items in the 2011 CSS that captured dollar values, a few very high outlying values substantially skewed the mean for this item. The median is usually a better measure of central tendency in such highly skewed distributions.

[3] The original figure reported by this respondent was $520 million for all locations worldwide. After e-mail discussion, the respondent suggested dividing reported amounts by ten to reflect estimates for the specific company location that was the subject of the survey.

question, along with all other responses to open-ended items, are found in Appendix C. Many respondents indicate that extracting costs and benefits associated with C-TPAT membership is very difficult for them to do. In terms of valuing C-TPAT membership, these text responses fall into three groups – a few who see no benefit, a fair number who see the benefits one might expect (expedited border crossings and reduced costs), and a substantial number who see value in C-TPAT membership beyond dollars and cents. This largest group cites the "invaluable" features of C-TPAT membership:

- A best-practice approach to security issues that creates a business culture of more secure operations for all, and constant improvements in security
- Assurance that shipments will move predictably
- Ability to do business with others who require C-TPAT membership and the opportunity costs of not being a C-TPAT member
- Reduced exposure to legal or financial risk
- Indirect benefits of efficiency and safety resulting from security activities that reveal equipment or personnel issues that do not directly impact security

These results parallel those from the large survey, which revealed some slightly mixed opinions about the value of C-TPAT membership when posed as a question of benefits versus costs, but which showed similar comments about the intangible benefits of C-TPAT membership.

# III. Introduction

## About the Report

The report is divided into three major sections: Introduction, Survey Development, and Survey Results. The Introduction provides an overview of the complete survey process. The Survey Development section presents a description of the exploratory telephone conversations and WebEx meeting, and a description of the questionnaire development process.

The Survey Results section presents a summary of the survey findings and is divided into the following areas:

- Overview of Surveyed Companies
- Implementation Costs
- Cost Savings
- Time Savings
- Maintenance Costs
- Importers
- Carriers
- Service Providers
- Manufacturers
- Border Delay Costs
- Scope, Screening and Sanctioning
- Overall Experience
- Open-Ended Responses
- Conclusion

## Survey Overview

The 2011 C-TPAT Costs and Savings Survey (CSS) is phase III of data collection for U.S. Customs and Border Protection. This purpose of this phase of the survey is to collect detailed costs and savings experienced by a sample of C-TPAT members.

The goals of the CSS survey were:

1) Measure implementation costs incurred by newer members of C-TPAT
2) Measure cost savings that members of C-TPAT have experienced since their initial certification
3) Measure time savings that members of C-TPAT have experienced since their initial certification
4) Measure ongoing maintenance costs required by members of C-TPAT to continue to remain certified
5) Assess overall costs v. savings of participants in the C-TPAT

The following Table III-1 shows the timeline for the project. The survey development process is further described in the next chapter.

**Table III-1: Project timeline**

| ***Phase of Survey*** | ***Date*** |
|---|---|
| Exploratory Interviews | July, 2010 |
| Webinar Focus Groups | December, 2010 |
| Pilot | January, 2011 |
| Production | February, 2011 |

# IV. Survey Development

## Questionnaire Development

The questionnaire was based on the 2007 survey. Since the survey is being conducted in three separate phases, each phase is designed to reach a targeted portion of the C-TPAT membership. The first survey was targeted to the entire membership and addressed overall satisfaction with the costs and benefits of the C-TPAT program. All the questions from the 2007 survey that require special dollar amounts were reserved for the third phase of the survey.

The survey is designed with multiple skip patterns to ensure that the questions asked were appropriate for the responding business. The skip patterns accommodated the following CBP categories of enrollment:

- U.S. Importers of Record
- U.S./Canada Highway Carriers
- U.S./Mexico Highway Carriers
- Mexican Long Haul Carriers
- Rail Carriers
- Sea Carriers
- Air Carriers
- U.S. Marine Port Authority/Terminal Operators
- U.S. Air Freight Consolidators, Ocean Transportation Intermediaries and Non-Vessel Operating Common Carriers (NVOCC)
- Licensed U.S. Customs Brokers
- Third Party Logistics Providers
- Foreign Manufacturers

## Exploratory Interviews

In fall 2010 CSR drew a sample of 16 firms from those who participated in the General Membership Survey. These firms indicated on the first survey that they would be willing to participate in a future portion of this project. Interviewers at the Center for Survey Research conducted interviews by telephone with representatives of these companies to explore various approaches to collecting the detailed cost data envisioned for the Cost and Savings Survey. Of the 16 C-TPAT members selected for the interviews, eight were completed, three were partially completed, and five were not completed.

CSR reviewed the interviewer notes from the exploratory interviews and concluded the following:

- Smaller companies are less likely to track expenses separately or have records of expenses directly related to C-TPAT.
- Companies generally do not have direct financial benefits from C-TPAT. Instead they were more likely to expect time savings at the border or perceived membership in C-TPAT as a benefit.
- There are significant differences in costs and savings depending on the size of the company.
- Some companies use consultants to assist them in the C-TPAT certification process who would have more information about the implementation process.
- All those interviewed indicated they would prefer to do the survey on the web or by paper rather than by telephone.

The exploratory interviews emphasized the need to provide companies with a worksheet prior to launching the full web survey. This would enable the respondents to locate the figures and costs they would need to complete the survey.

## Webinar Focus Group

On December 17, CSR conducted a web-enabled focus group with representatives from four companies. Participants were provided a link to a test version of the survey. The purpose of the focus group was to receive feedback from the participants on their experience in completing the test version of the questionnaire.

Overall, participants found the survey to be self-explanatory. Discussion of a paper representation of the survey which would be mailed ahead of time suggests that this would be a helpful tool to participants. Some specific concerns mentioned were:

- Respondents may need a reminder about the answers they gave on the previous survey
- Many of the implementation costs are incurred by a parent company and are therefore not tracked by individual companies
- Participants indicated the need for plenty of time to collect the data being solicited in the survey
- Participants emphasized that benefits are not always measurable in terms of costs/savings

## Pilot Study

The next phase in testing this survey included a pilot test of the programming in January, 2011.

### *Sample Selection for the Pilot Study*

The population of C-TPAT participants was divided into four categories: 1) Importers, 2) Manufacturers, 3) Carriers, and 4) Others for the purpose of selecting a stratified random sample of sixty partners to participate in the pilot study. The number from each group that participated in the pilot is indicated Table IV-1:

**Table IV-1: Pilot sample distribution**

| Category | Sampled | Sample % | Pilot responses | Resp % |
|---|---|---|---|---|
| Importers | 15 | 30% | 2 | 17% |
| Carriers | 19 | 38% | 6 | 50% |
| Manufacturers | 8 | 16% | 2 | 17% |
| All others | 8 | 16% | 2 | 17% |
| Total | 50 | 100% | 12 | 100% |

### *Pilot Study Process*

The survey methods for the C-TPAT pilot study were based on a modified version of the "Tailored Design Method" of web survey administration[4], a set of related techniques that has been shown to optimize cooperation, response rates, and accuracy in web surveys without compromising confidentiality. Table IV-2 indicates the steps involved:

**Table IV-2: Pilot timeline**

| Task | Date Completed |
|---|---|
| Email with worksheet attached | 1/12/11 |
| Email invitation with survey link | 1/20/11 |
| Closeout reminder email with link | 1/26/11 |
| Closeout of the web | 1/31/11 |

### *Initial Frequencies*

The initial frequencies from the pilot data indicate that respondents represented all the business type categories: Importers, Highway Carriers, Sea Carriers, Air Carriers, Freight Consolidators, Licensed Customs Brokers, and Foreign Manufacturers. The frequencies indicated that the survey was functioning well and was ready for production.

### *Response Rate*

Of the 50 businesses we contacted, 27 opened the survey on the web and 19 completed the initial screen verifying the accuracy of the summary information about their company that was collected on the 2010 survey. Twelve of the 19 respondents completed the survey for a 24% response rate.

### *Pilot Debriefing Summary*

By design, the survey questionnaire is extremely targeted and detailed, with more than 100 distinct variables measuring implementation costs, cost savings, and time savings. Overall, there did not seem to be any major difficulties for the respondents in completing the survey. No significant changes were suggested as a result of the pilot other than some fine-tuning of the technical aspects of the program.

Because the pilot survey indicated only slight changes needed to be made, the respondents to the pilot survey were included in the final dataset for analysis.

[4] See Don A. Dillman, *Mail and Internet Surveys: The Tailored Design Method* (New York: John Wiley and Sons, 2009).

# V. Survey Results

This chapter presents results of the 2011 C-TPAT Costs & Savings Survey. In accordance with the survey's prioritization of a "drilldown" assessment of C-TPAT Partner cost experiences, the focus is descriptive illumination rather than large-N causal inference. Open-ended survey questions are analyzed in depth, and although means and standard errors of means are consistently presented, discussion of central tendency focuses on medians (supplemented by consideration of minima and maxima).[5]

The chapter contains the following sections:

- Overview of Surveyed Companies
- Implementation Costs
- Cost Savings
- Time Savings
- Maintenance Costs
- Importers
- Carriers
- Service Providers
- Manufacturers
- Border Delay Costs
- Scope, Screening and Sanctioning
- Open-Ended Questions
- Overall Experience
- Conclusion

## Overview of Surveyed Companies

### *Business Type*

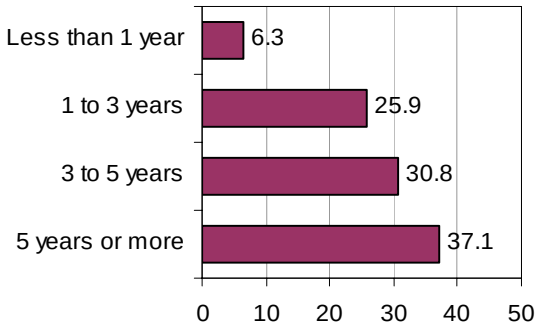
As indicated in Figure V-1, companies responding to the 2011 C-TPAT Costs & Savings Survey were relatively evenly distributed by business type. The two most commonly represented business types were Importers and Service Providers (each with 29.9 percent of respondents). The least commonly represented business type was (Foreign) Manufacturers (with only 15.6 percent of respondents).

**Figure V-1: Percentage of Responses by Business Type**


### *Length of Time in C-TPAT*

As shown in Figure V-2 below, a plurality of responding companies have been members of C-TPAT for over five years (37.1 percent of respondents), closely followed by 3-5 year members (30.8 percent) and 1-3 year members (25.9 percent). Very few respondents have been C-TPAT members for less than a year (6.3 percent).

**Figure V-2: Percentage of Responses by Length of Time in C-TPAT**



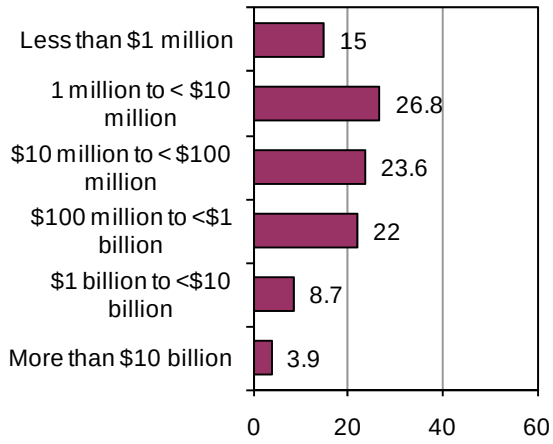

### *Annual Revenue*

As indicated in Figure V-3, just over one quarter of responding companies (26.8 percent) report between $1 and $10 million dollars in annual revenue, and just below one quarter report between $10 million and $100 million (23.6 percent). Exactly fifteen percent of respondents report less than $1 million in annual revenue.

[5] The median value represents the value that is larger than one-half of the cases and smaller than one-half of the cases reporting a value on the variable in question. Conventional "Gaussian" statistical analysis of the 2011 C-TPAT Costs & Savings Survey data is frustrated not only by small subgroup sample sizes, but by the often remarkable "(right)-skewness" and "kurtosis" of the data. Put less formally, mean values of variables often vastly exceed median values because the former are "pulled up" by one or more extremely high outliers.

Slightly less than one in ten respondents (8.7 percent) report $1 billion to $10 billion in annual revenue, and 3.9 percent of respondents report annual revenue of over $10 billion.

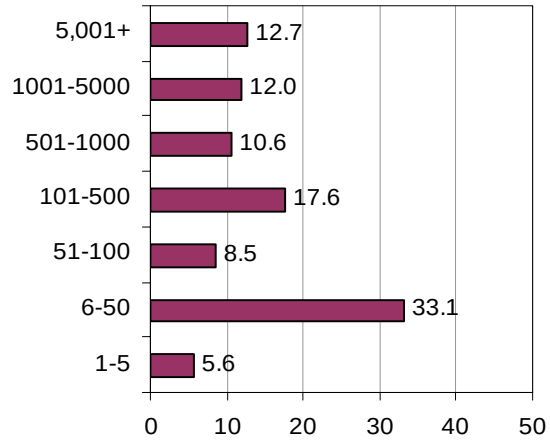
**Figure V-3: Percentage of Responses by Annual Revenue**




## *Number of Employees*

About one in three responding companies (33.1 percent) report having between 6 and 50 employees, easily the most common response for this item (see Figure V-4). The next most commonly reported workforce size was 101-500 employees (reported by 17.6 percent of responding companies). Businesses which fell within the 1001-5000 range and the 5,001+ were nearly equally represented (at 12.0 and 12.7 percent, respectively). Only 5.6 percent of businesses reported having five or fewer employees.

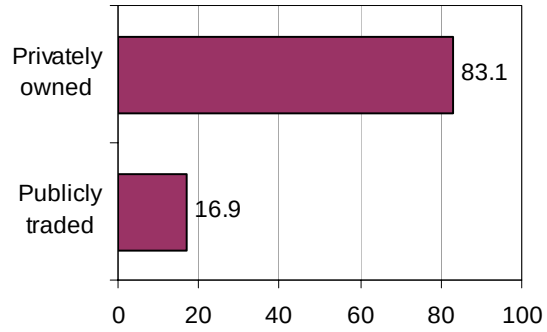
**Figure V-4: Percentage of Responses by Number of Employees**




## *Ownership Status*

As indicated in Figure V-5, the great majority of responding companies are privately owned. Only 16.9 percent of responding companies are publicly traded.

**Figure V-5: Percentage of Responses by Ownership Status**




(See Table B1 in Appendix B for a more detailed overview of surveyed companies.)

## Implementation Costs

As indicated in Table V-1, total implementation costs varied enormously across the 110 companies reporting any such costs: from a minimum of $280.00 to a maximum of over $4 million. The mean total implementation cost was $137,899, and based on a standard error of $50,328 we must delineate a wide 95% confidence interval for the true mean of between $37,423 and $238,555. Note, however, that these mean values are strongly influenced by high-outliers like the $4 million maximum value.[6] It is thus no surprise that the "median" or "typical" company's total implementation costs of $17,370 falls well below

[6] Note that skewness = 6.70; kurtosis = 46.3. Moreover, although implementation costs are systematically related to annual revenues (Pearson's $r$ =.232; $p$ < .025) and, to a lesser extent, number of employees (Pearson's $r$ = .167; $p$ < .10) implementation costs are not so strongly related to these variables that partitioning suffices to "normalize" the data. Nor does such partitioning do much in regard to other total costs and savings variables. The strongest bivariate company size / costs & savings relationship is that between "cost savings" and annual revenues (Pearson's $r$ =.538; $p$ < .01). The weakest is that between "time savings" and number of employees (Pearson's $r$ =.108; $p$ > .50).

the lower bound of the 95% confidence interval for the mean.

**Table V-1: Total Implementation Costs**

| | |
|---|---|
| **Mean (n=110)** | $137,899.00 |
| **Std. Error of Mean** | $50,328.00 |
| **Median** | $17,370.00 |
| **Minimum** | $280.00 |
| **Maximum** | $4,050,000.00 |

In order to give a sense of how high outliers pull mean figures above those that are "typical" for C-TPAT partner companies, subsequent sections of this report focus on median values supplemented by attention to minimum and, especially, maximum values.

Note that the "Total" company-level figures quoted in Table V-1 above are derived by summing many different specific implementation costs experienced at each individual company. (As on previous C-TPAT surveys, importers are asked whether they experienced any of a list of fourteen specific implementation costs and non-importers are asked whether they experienced nine specific implementation costs.)[7]

Listed in descending order, the two *specific* implementation costs most commonly experienced by importers were "Improving or implementing physical security" (52.4 percent) and "Educating foreign suppliers, manufacturers or vendors" (51.2 percent). The implementation cost least commonly reported by importers was "Improving or implementing use of security personnel" (23.8 percent). (See Table B2a in Appendix B for details.)

Companies were also asked about the method and accuracy of the cost estimates that they provided. Importers reporting costs, for example, were most likely to be able to provide at least a rough dollar estimate of implementation costs pertaining to "Salaries and expenses of personnel" (90.5 percent). Importers reporting costs were least likely to be able to provide at least a rough dollar estimate of implementation costs pertaining to "Improving or implementing use of security personnel" (55.6 percent). (See Table B6a in Appendix B for details.)

Table V-2 presents summary statistics pertaining to the actual dollar amount of these specific implementation costs. Typically, the three greatest implementation costs experienced by importers were "Improving or implementing physical security" (median = $15,000), "Improving or implementing IT systems/database development" (median = $12,500), and "Salaries and expenses of personnel hired/contracted specifically to implement and/or manage C-TPAT program" (median = $12,000). Typically, the lowest implementation costs for companies involved "Developing a foreign supplier, manufacturer, or vendor security evaluation process" and "Getting foreign suppliers, manufacturers or vendors to complete your company's security evaluation survey process" (median = $1000 each).

The largest single implementation cost reported by any importer was a $3 million cost for "Salaries and expenses of personnel" reported by a publicly-traded company with over $10 billion in annual revenue. (This company did not offer an assessment of the accuracy of this particular estimate.)

[7] Specific cost figures must be interpreted with particular caution because the subset of C-TPAT partners of a particular business type reporting a specific cost or savings may be a tiny fraction of an already modest sample (especially in the case of less frequently-experienced types of costs and savings).

**Table V-2: Specific Implementation Costs -- Importers**

| Name | N | Mean | Std. Error of Mean | Median | Min | Max |
|---|---|---|---|---|---|---|
| Educating foreign suppliers, manufacturers, or vendors about security requirements | 16 | $12,794 | $6,549 | $2,500 | $400 | $100,000 |
| Updating **existing** foreign supplier, manufacturer, or vendor security evaluation survey process | 16 | $4,444 | $2,026 | $1,250 | $400 | $25,000 |
| Developing a foreign supplier, manufacturer, or vendor security evaluation survey process where none existed | 13 | $4,746 | $2,497 | $1,000 | $200 | $25,000 |
| Getting foreign suppliers, manufacturers, or vendors to complete your company's security evaluation survey process | 11 | $7,822 | $4,745 | $1,000 | $40 | $50,000 |
| Testing the integrity of supply chain security | 11 | $56,036 | $44,614 | $5,000 | $900 | $500,000 |
| Salaries and expenses of personnel hired/contracted specifically to implement and/or manage C-TPAT program | 21 | $165,224 | $141,914 | $12,000 | $500 | $3,000,000 |
| Improving or implementing Personnel Security Procedures | 10 | $12,645 | $5,746 | $5,000 | $450 | $50,000 |
| Improving or implementing Personnel Screening Procedures | 11 | $12,814 | $8,831 | $2,500 | $150 | $100,000 |
| Improving or implementing Identification System | 13 | $8,724 | $3,928 | $4,000 | $40 | $52,923 |
| Improving or implementing in-house Education/Training/Awareness | 16 | $10,944 | $6,215 | $2,750 | $500 | $100,000 |
| Improving or implementing Physical Security (Doors, Windows, Electronic Access, Cameras, Fences, Gates, Lighting, etc.) | 17 | $57,913 | $27,497 | $15,000 | $1,000 | $450,000 |
| Improving or implementing Cargo Security (Seals, Locks, Bars, Global Positioning Satellite (GPS) Tracking, etc.) | 12 | $7,000 | $3,993 | $2,250 | $500 | $50,000 |
| Improving or implementing use of Security Personnel | 6 | $27,950 | $15,814 | $12,500 | $200 | $100,000 |
| Improving or implementing IT Systems/Database Development | 9 | $20,467 | $11,239 | $5,000 | $300 | $100,000 |

Among *non-importers*, the two most commonly experienced specific implementation costs involved "Improving or implementing physical security" (61.1 percent), and "Improving or implementing in-house education / training / awareness" (52.7 percent). As was true for importers, the implementation cost least commonly reported by non-importers was "Improving or implementing use of security personnel" (21.7 percent). (See Table B2b in Appendix B for details).

Non-importers reporting costs were most likely to be able to provide at least a rough estimate of implementation costs pertaining to "Improving or implementing physical security" (89.2 percent). Non-importers were least likely to be able to provide at least a rough estimate of "Improving or implementing personnel screening procedures" (74.0 percent). (See Table B6b in Appendix B for details.)

As shown in Table V-3, among non-importers who reported specific cost figures the three highest median dollar implementation costs were for "Salaries and expenses of personnel hired/contracted specifically to implement and/or manage C-TPAT program" ($9,000), "Improving or implementing use of security personnel ($7,000), and "Improving or implementing physical security" ($5,000). The lowest median cost for non-importers involved "Improving or implementing identification systems" ($1,500).

The largest single implementation cost for any non-importer involved a $2 million personnel security improvement cost experienced by a privately-owned company with between $10 million and $99 million in annual revenue.

**Table V-3: Specific Implementation Costs - Non-Importers**

| Name | N | Mean | Std. Error of Mean | Median | Min | Max |
|---|---|---|---|---|---|---|
| Salaries and expenses of personnel hired/contracted specifically to implement and/or manage C-TPAT program | 38 | $55,374 | $27,598 | $9,000 | $83 | $1,000,000 |
| Improving or implementing Personnel Security Procedures | 40 | $59,901 | $49,845 | $2,500 | $100 | $2,000,000 |
| Improving or implementing Personnel Screening Procedures | 33 | $22,471 | $15,141 | $2,100 | $180 | $500,000 |
| Improving or implementing Identification System | 41 | $10,679 | $6,131 | $1,500 | $40 | $250,000 |
| Improving or implementing in-house Education/Training/Awareness | 41 | $9,857 | $5,071 | $2,000 | $100 | $200,000 |
| Improving or implementing Physical Security (Doors, Windows, Electronic Access, Cameras, Fences, Gates, Lighting, etc.) | 54 | $21,999 | $5,631 | $5,000 | $200 | $200,000 |
| Improving or implementing Cargo Security (Seals, Locks, Bars, Global Positioning Satellite (GPS) Tracking, etc.) | 43 | $7,102 | $1,495 | $2,500 | $80 | $50,000 |
| Improving or implementing use of Security Personnel | 18 | $15,633 | $5,250 | $7,000 | $200 | $80,000 |
| Improving or implementing IT Systems/Database Development | 28 | $30,859 | $18,317 | $2,500 | $100 | $500,000 |

## Cost Savings

As indicated in Table V-4, only 35 responding companies reported cost savings in *any* category, with the total amount of savings varying profoundly -- from a minimum of $50 to a maximum of $52 million. Perhaps the most meaningful measure of the typical company's cost savings (among the minority of companies reporting cost savings) is thus the median value of $5350.

**Table V-4: Total Cost Savings**

| | |
|---|---|
| **Mean (n=35)** | $1,750,259.00 |
| **Std. Error of Mean** | $1,487,152.00 |
| **Median** | $5,350.00 |
| **Minimum** | $50.00 |
| **Maximum** | $52,000,000.00 |

For importers, the specific types of cost savings most commonly achieved were those involving "Improving or implementing personnel screening procedures" (reported by 23.3 percent of importers) and those involving "Improving or implementing identification systems" (reported by 19.0 percent of importers). (See Table B3a in Appendix B for details.)

Importers were most likely to be able to provide at least a rough estimate of cost savings pertaining to "Getting foreign suppliers, manufacturers, or vendors to complete your company's security evaluation process" (50.0 percent). Importers were least likely to be able to provide at least a rough estimate of "Developing a foreign supplier, manufacturer, or vendor security evaluation process where none existed" (14.3 percent). (See Table B7a in Appendix B for details.)

As shown in Table V-5, the three greatest median cost savings for importers involved "Improving or implementing in-house education" ($9,250), "Improving or implementing cargo security," ($8,000), and "Improving or implementing personnel screening procedures" ($5,250). The least median cost savings for importers involved "Improving or implementing use of security personnel" ($500).

The single largest cost savings reported by an importer involved an $18,000 cost savings associated with "Improving or implementing in-house education." This amount was reported by a private company with between $10 million and $99 million in annual revenue that did not specify the method of their estimate.

**Table V-5: Specific Cost Savings -- Importers**

| Name | N | Mean | Std. Error of Mean | Median | Min | Max |
|---|---|---|---|---|---|---|
| Educating foreign suppliers, manufacturers, or vendors about security requirements | 1 | $3,000 | NA | $3,000 | $3,000 | $3,000 |
| Updating **existing** foreign supplier, manufacturer, or vendor security evaluation survey process | 0 | NA | NA | NA | NA | NA |
| Developing a foreign supplier, manufacturer, or vendor security evaluation survey process where none existed | 0 | NA | NA | NA | NA | NA |
| Getting foreign suppliers, manufacturers, or vendors to complete your company's security evaluation survey process | 2 | $650 | $350 | $650 | $300 | $1,000 |
| Testing the integrity of supply chain security | 3 | $3,533 | $1,467 | $5,000 | $600 | $5,000 |
| Salaries and expenses of personnel hired/contracted specifically to implement and/or manage C-TPAT program | 0 | NA | NA | NA | NA | NA |
| Improving or implementing Personnel Security Procedures | 2 | $500 | $0 | $500 | $500 | $500 |
| Improving or implementing Personnel Screening Procedures | 2 | $5,250 | $4,750 | $5,250 | $500 | $10,000 |
| Improving or implementing Identification System | 2 | $1,600 | $600 | $1,600 | $1,000 | $2,200 |
| Improving or implementing in-house Education/Training/Awareness | 2 | $9,250 | $8,750 | $9,250 | $500 | $18,000 |
| Improving or implementing Physical Security (Doors, Windows, Electronic Access, Cameras, Fences, Gates, Lighting, etc.) | 2 | $1,350 | $650 | $1,350 | $700 | $2,000 |
| Improving or implementing Cargo Security (Seals, Locks, Bars, Global Positioning Satellite (GPS) Tracking, etc.) | 3 | $6,167 | $2,088 | $8,000 | $2,000 | $8,500 |
| Improving or implementing use of Security Personnel | 1 | $500 | NA | $500 | $500 | $500 |
| Improving or implementing IT Systems/Database Development | 2 | $2,850 | $2,350 | $2,850 | $500 | $5,200 |

In descending order, the three most commonly experienced cost savings for *non-importers* involved "Improving or implementing physical security" (15.2 percent), "Improving or implementing in-house education / training / awareness" (14.1 percent) and "Improving or implementing cargo security" (13.4 percent). The least commonly experienced cost savings involved "Salaries and expenses of personnel hired/contracted specifically to implement and/or manage C-TPAT" (8.1 percent). (See Table B3b in Appendix B for details.)

Non-importers reporting cost savings were most likely to be able to provide at least a rough estimate of cost savings pertaining to "Improving or implementing in-house training" (78.9 percent). Non-importers were least likely to be able to provide at least a rough estimate of "Improving or implementing IT systems/database development" (55.0 percent). (See Table B7b in Appendix B for details.)

As indicated in Table V-6, the greatest median dollar cost savings for non-importers involved "Improving or implementing use of security personnel" ($79,000), followed by "Salaries and expenses of personnel hired/contracted specifically to implement and/or manage C-TPAT program" ($15,000) and "Improving or implementing personnel screening procedures" ($11,000). The least median dollar cost savings for non-importers involved "Improving or implementing identification systems" ($300).

The single largest cost savings reported by a non-importer involved a $15 million savings achieved in accordance with "Personnel hired/contracted specifically to implement and/or manage the C-TPAT program." The savings was reported by a foreign manufacturer with over $5 billion in annual revenue and the accuracy of various high outlier estimates by this company was directly confirmed by CSR staff.

**Table V-6: Specific Cost Savings – Non-Importers**

| Name | N | Mean | Std. Error of Mean | Median | Min | Max |
|---|---|---|---|---|---|---|
| Salaries and expenses of personnel hired/contracted specifically to implement and/or manage C-TPAT program | 7 | $2,204,045 | $2,133,189 | $15,000 | $315 | $15,000,000 |
| Improving or implementing Personnel Security Procedures | 9 | $1,207,710 | $1,101,360 | $5,662 | $100 | $10,000,000 |
| Improving or implementing Personnel Screening Procedures | 9 | $1,138,589 | $729,924 | $11,000 | $100 | $5,000,000 |
| Improving or implementing Identification System | 10 | $510,194 | $498,922 | $300 | $38 | $5,000,000 |
| Improving or implementing in-house Education/Training/Awareness | 11 | 113,527 | $90,414 | $2,500 | $200 | $1,000,000 |
| Improving or implementing Physical Security (Doors, Windows, Electronic Access, Cameras, Fences, Gates, Lighting, etc.) | 14 | $113,328 | $76,729 | $5,587 | $45 | $1,000,000 |
| Improving or implementing Cargo Security (Seals, Locks, Bars, Global Positioning Satellite (GPS) Tracking, etc.) | 11 | $522,892 | 452,098 | $3,000 | $200 | $5,000,000 |
| Improving or implementing use of Security Personnel | 6 | $943,125 | $815,182 | $79,000 | $250 | $5,000,000 |
| Improving or implementing IT Systems/Database Development | 6 | $1,818,236 | $1,642,906 | $4,344 | $250 | $10,000,000 |

## Time Savings

As indicated in Table V-7, only 38 responding companies reported any sort of time savings (just a few more than reported cost savings). The total per company amount of these time savings varied from a minimum of 25 annual hours to a maximum of 48,000 annual hours. Perhaps the most meaningful measure of the typical company's time savings is thus the median value of 373 hours per year.

**Table V-7: Total Time Savings (in hours)**

| | |
|---|---|
| **Mean (n=38)** | 2,466 |
| **Std. Error of Mean** | 1,262 |
| **Median** | 373 |
| **Minimum** | 25 |
| **Maximum** | 48,000 |

For importers, the three most commonly reported *specific* time savings involved "Educating foreign suppliers, manufacturers, or vendors about security requirements," "Getting foreign suppliers, manufacturers, or vendors to complete your company's security evaluation survey process," and "improving or implementing IT systems/database development" (equally reported at 11.9 percent). The least commonly reported time savings involved "Improving or implementing personnel screening procedures" (2.4 percent). (Note: due to the small number of companies reporting time savings, equal percentages of time savings were reported for several implementation categories. (See Appendix B4a for additional information.)

Importers were most likely to be able to provide at least a rough estimate of time savings pertaining to "Updating existing foreign supplier, manufacturer, or vendor security evaluation survey process," and "Improving or implementing IT systems/database development" (each at least roughly estimated by 71.4 percent of importers reporting the savings). Importers were least likely to be able to provide at least a rough estimate of time savings pertaining to "Improving or implementing in-house training" (with only 42.9 percent of those reporting able to provide at least a rough estimate). (See Table B8a in Appendix B for details.)

As indicated in Table V-8, the greatest median annual hourly time savings for importers involved "Testing the integrity of supply chain security" (800 hours), followed by "Improving or implementing cargo security" (575 hours), and "Improving or implementing use of security personnel" (400 hours). Importers reporting time savings reported saving the fewest median annual hours with respect to "Improving or implementing personnel screening procedures" (40 hours). However, please note the small numbers of importers who reported specific time savings data.

The single greatest annual time savings reported by an importer was 3,000 hours annually, derived from investments in "Testing the integrity of supply chain security." This was reported by a private company with 1,001 to 5,000 employees and time savings figure was characterized as a "rough estimate."

**Table V-8: Specific Time Savings -- Importers**

| Name | N | Mean | Std. Error of Mean | Median | Min | Max |
|---|---|---|---|---|---|---|
| Educating foreign suppliers, manufacturers, or vendors about security requirements | 3 | 355h | 323h | 50h | 15h | 1,000h |
| Updating **existing** foreign supplier, manufacturer, or vendor security evaluation survey process | 3 | 210h | 148h | 120h | 10h | 500h |
| Developing a foreign supplier, manufacturer, or vendor security evaluation survey process where none existed | 2 | 202h | 199h | 202h | 3h | 400h |
| Getting foreign suppliers, manufacturers, or vendors to complete your company's security evaluation survey process | 2 | 195h | 155h | 195h | 40h | 350h |
| Testing the integrity of supply chain security | 3 | 1,269h | 895h | 800h | 6h | 3,000h |
| Salaries and expenses of personnel hired/contracted specifically to implement and/or manage C-TPAT program | 2 | 273h | 228h | 273h | 45h | 500h |
| Improving or implementing Personnel Security Procedures | 2 | 280h | 220h | 280h | 60h | 500h |
| Improving or implementing Personnel Screening Procedures | 1 | 40h | NA | 40h | 40h | 40h |
| Improving or implementing Identification System | 1 | 50h | NA | 50h | 50h | 50h |
| Improving or implementing in-house Education/Training/Awareness | 2 | 250h | 50h | 250h | 200h | 300h |
| Improving or implementing Physical Security (Doors, Windows, Electronic Access, Cameras, Fences, Gates, Lighting, etc.) | 4 | 190h | 111h | 125h | 10h | 500h |
| Improving or implementing Cargo Security (Seals, Locks, Bars, Global Positioning Satellite (GPS) Tracking, etc.) | 2 | 575h | 275h | 575h | 300h | 850h |
| Improving or implementing use of Security Personnel | 2 | 400h | 200h | 400h | 200h | 600h |
| Improving or implementing IT Systems/Database Development | 5 | 515h | 244h | 250h | 24h | 1,200h |

In descending order, the most commonly reported time savings for *non-importers* came from their investments in "Improving or implementing IT systems/database development" (18.4 percent), "Improving or implementing identification systems" (16.8 percent) and "Improving or implementing physical security" (16.3 percent). The least commonly reported time savings for non-importers involved "Salaries and expenses of personnel hired/contracted specifically to implement and/or manage C-TPAT" (8.0 percent). (See Table B4b for in Appendix B for details.)

Non-importers reporting time savings were most likely to be able to provide at least a rough estimate of hours saved from "Improving or implementing personnel security procedures" (80.8 percent of those reporting savings). Non-importers reporting savings were least likely to be able to provide at least a rough estimate of savings pertaining to "Improving or implementing physical security" (66.7 percent of those reporting savings). (See Table B8b in Appendix B for details.)

As indicated in Table V-9, the greatest median time savings for non-importers involved "Improving or implementing IT systems/database development," (200 annual hours), followed by "Improving or implementing identification system" and "Improving or implementing cargo security" (each 150 annual hours). The fewest median annual hours of time savings reported by non-importers reporting savings involved "Improving or implementing personnel screening procedures" (40 annual hours).

The greatest reported time savings in terms of median annual hours involved several "rough estimates" provided by a privately-owned service provider with between $100 million and $1 billion in annual revenue. (This service provider estimated 8,000 annual hours saved in each of six different specific time savings categories.)

**Table V-9: Specific Time Savings -- Non-Importers**

| Name | N | Mean | Std. Error of Mean | Median | Min | Max |
|---|---|---|---|---|---|---|
| Salaries and expenses of personnel hired/contracted specifically to implement and/or manage C-TPAT program | 8 | 857h | 604h | 100h | 8h | 5,000h |
| Improving or implementing Personnel Security Procedures | 16 | 605h | 494h | 56h | 4h | 8,000h |
| Improving or implementing Personnel Screening Procedures | 12 | 152h | 58h | 40h | 2h | 500h |
| Improving or implementing Identification System | 16 | $698h | 491h | 150h | 2h | 8,000h |
| Improving or implementing in-house Education/Training/Awareness | 13 | 1,116h | 685h | 100h | 4h | 8,000h |
| Improving or implementing Physical Security (Doors, Windows, Electronic Access, Cameras, Fences, Gates, Lighting, etc.) | 12 | 846h | 653h | 130h | 4h | 8,000h |
| Improving or implementing Cargo Security (Seals, Locks, Bars, Global Positioning Satellite (GPS) Tracking, etc.) | 12 | 571h | 230h | 150h | 2h | 2,000h |
| Improving or implementing use of Security Personnel | 11 | 1028h | 729h | 100h | 2h | 8,000h |
| Improving or implementing IT Systems/Database Development | 15 | 806h | 519h | 200h | 4h | 8,000h |

## Maintenance Costs

As indicated in Table V-10, the 91 companies reporting any sort of maintenance cost varied in their total annual maintenance costs from a minimum of $45 to a maximum of $815,000. The median annual maintenance cost was $9,000.

**Table V-10: Total Maintenance Costs**

| | |
|---|---|
| **Mean (n=91)** | $42,749.00 |
| **Std. Error of Mean** | $12,049.00 |
| **Median** | $9,000.00 |
| **Minimum** | $45.00 |
| **Maximum** | $815,000.00 |

Whereas importers and non-importers were asked different specific questions in regard to other types of costs and savings, all types of companies were asked about the same nine potential maintenance costs. The most commonly experienced among these nine costs involved "Salaries and expenses of personnel hired/contracted specifically to implement and/or manage C-TPAT programs" (49.3 percent) and "Improving or implementing physical security" (47.2 percent). The least commonly experienced maintenance costs were "Improving or implementing use of security personnel" (24.8 percent). (See Appendix B5 for details).

Companies surveyed were most likely to be able to provide at least a rough estimate of maintenance costs pertaining to "Improving or implementing physical security" (80.6 percent of those reporting costs). Companies were least likely to be able to provide at least a rough estimate of maintenance costs pertaining to "Improving or implementing use of security personnel" (61.5 percent of those reporting costs). (See Table B9 in Appendix B for details.)

As indicated in Table V-11, the highest median maintenance costs for all companies involved "Salaries and expenses of personnel hired/contracted specifically to implement and/or manage the C-TPAT program" ($7,500 among those reporting), followed by "Improving or implementing use of security personnel" ($5,100 among those reporting) and "Improving or implementing physical security" ($3,000 among those reporting). The lowest median maintenance costs involved "Improving or implementing identification system" ($1,000 among those reporting).

The greatest single maintenance cost involved a $400,000 salary cost for a publicly-traded importer with over $10 billion in annual revenue. This estimate was based on "tracked data."

**Table V-11: Specific Maintenance Costs – All Companies**

| Name | N | Mean | Std. Error of Mean | Median | Min | Max |
|---|---|---|---|---|---|---|
| Salaries and expenses of personnel hired/contracted specifically to implement and/or manage C-TPAT program | 55 | $29,000 | $9,353 | $7,500 | $540 | $400,000 |
| Improving or implementing Personnel Security Procedures | 35 | $6,840 | $1,678 | $2,500 | $10 | $42,000 |
| Improving or implementing Personnel Screening Procedures | 34 | $9,360 | $5,906 | $1,199 | $75 | $200,000 |
| Improving or implementing Identification System | 35 | $2,242 | $1,129 | $1,000 | $40 | $40,000 |
| Improving or implementing in-house Education/Training/Awareness | 51 | $6,719 | $2,204 | $2,000 | $35 | $100,000 |
| Improving or implementing Physical Security (Doors, Windows, Electronic Access, Cameras, Fences, Gates, Lighting, etc.) | 53 | $6,298 | $988 | $3,000 | $200 | $25,000 |
| Improving or implementing Cargo Security (Seals, Locks, Bars, Global Positioning Satellite (GPS) Tracking, etc.) | 41 | $5,857 | $2,394 | $1,750 | $60 | $100,000 |
| Improving or implementing use of Security Personnel | 19 | $27,536 | $13,407 | $5,100 | $150 | $200,000 |
| Improving or implementing IT Systems/Database Development | 30 | $5,479 | $1,865 | $1,750 | $200 | $50,000 |

## Importers

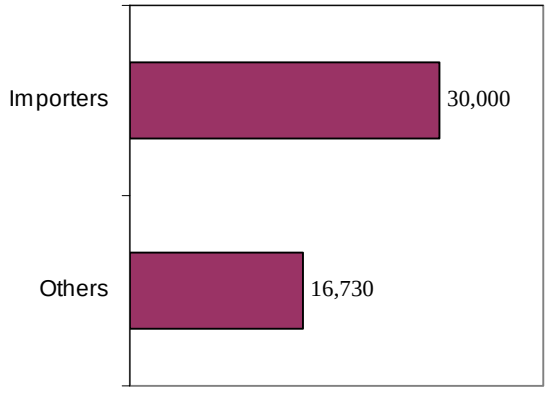
As shown in the lower rows of Table V-12 below, the 34 importers reporting any kind of implementation costs varied in their total annual costs between a $280 minimum and a $4,050,000 maximum. The median total implementation cost for importers was $30,000.

**Table V-12: Total Implementation Costs (Importers vs. All Others)**

| | Importers (n=34) | Others (n=76) |
|---|---|---|
| **Mean** | $191,879.00 | $113,750.00 |
| **Std. Error of Mean** | $118,818.00 | $50,237.00 |
| **Median** | $30,000.00 | $16,730.00 |
| **Minimum** | $280.00 | $300.00 |
| **Maximum** | $4,050,000.00 | $3,700,000.00 |

Table V-12 also allows for direct comparison of importer implementation costs (column 2) with the implementation costs of other companies (column 3). Given the aforementioned heavy influence of high outliers on estimates of mean costs, the most appropriate statistic for comparison is the median. As indicated in Figure V-6 below, the median implementation costs for importers ($30,000) were almost double those for other companies ($16,730).

**Figure V-6: Importers vs. All Others: Median Implementation Costs**




As indicated in the second column of

Table **V-13**, the eight importers reporting cost savings of any kind reported a total cost savings ranging from a minimum of $700 to a maximum of $48,400. The median cost savings was $6,250, which is rather close to the median $5,350 cost savings of the twenty-seven other companies reporting such savings (as shown in the third column of the table).[8]

**Table V-13: Total Cost Savings (Importers)**

| | Importers (n=8) | Others (n=27) |
|---|---|---|
| **Mean** | $13,188.00 | $2,264,967.00 |
| **Std. Error of Mean** | $6,011.00 | $1,924,699.00 |
| **Median** | $6,250.00 | $5,350.00 |
| **Minimum** | $700.00 | $50.00 |
| **Maximum** | $48,400.00 | $52,000,000.00 |

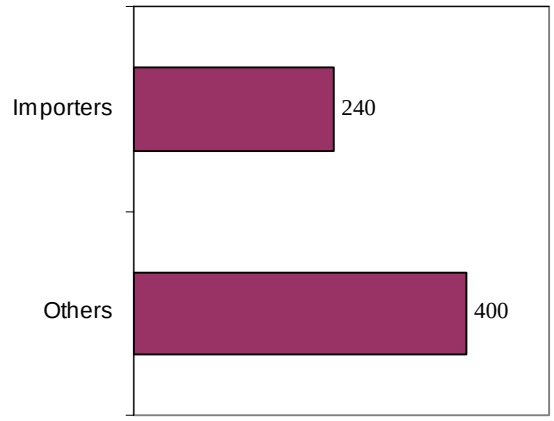
As shown in Table V-14, total *time* savings for the eleven importers who reported any sort of time savings ranged from 40 annual hours to 6,600 annual hours. The median time savings for importers was 240 annual hours. As indicated in Figure V-7 as well as in Table V-14, the typical importer reporting time savings reported substantially less time savings than did the typical non-importer.

**Table V-14: Total Time Savings (Importers vs. All Others)**

| | Importers (n=11) | Others (n=27) |
|---|---|---|
| **Mean** | 1,236 | 2,968 |
| **Std. Error of Mean** | 611 | 1,760 |
| **Median** | 240 | 400 |
| **Minimum** | 40 | 25 |
| **Maximum** | 6,600 | 48,000 |

[8] Mean importer cost savings were much lower than the mean cost savings reported by other companies, largely due to a single high outlier among the "other" companies – specifically, the aforementioned manufacturer that reported $52 million in cost savings.

**Figure V-7: Importers vs. All Others: Median Time Savings**




As shown in Table V-15 below, the total maintenance costs for the twenty-eight importers reporting any kind of maintenance costs varied enormously -- from a minimum of $45 per year to a maximum of $490,000 per year. The median maintenance cost for importers was $9,500, almost identical to the median maintenance cost for non-importers of $9,000.

**Table V-15: Total Maintenance Costs (Importers vs. All Others)**

| | Importers (n=28) | Others (n=63) |
|---|---|---|
| **Mean (n=28)** | $47,443.00 | $40,662.00 |
| **Std. Error of Mean** | $19,593.00 | $15,162.00 |
| **Median** | $9,500.00 | $9,000.00 |
| **Minimum** | $45.00 | $300.00 |
| **Maximum** | $490,000.00 | $815,000 |

In summary, it appears that importers experience slightly higher tangible costs and perhaps also slightly lower tangible benefits associated with C-TPAT membership than do other companies.

## Carriers

As shown in Table V-16, the twenty-six carriers reporting any sort of implementation costs experienced total annual costs between $3,689 and $275,900. The median annual implementation cost of $17,350 for carriers is almost identical to the median annual implementation cost for non-carriers of $17,370.

**Table V-16: Total Implementation Costs (Carriers vs. All Others)**

| | Carriers (n=26) | Others (n=84) |
|---|---|---|
| **Mean** | $42,409.00 | $167,456.00 |
| **Std. Error of Mean** | $13,136.00 | $65,538.00 |
| **Median** | $17,350.00 | $17,370.00 |
| **Minimum** | $3,689.00 | $280.00 |
| **Maximum** | $275,900.00 | $4,050,000.00 |

As shown in Table V-17, the eight carriers that reported cost savings of any kind experienced annual cost savings ranging from a minimum of $50 to a maximum of $10,000.

**Table V-17: Total Cost Savings (Carriers vs. All Others)**

| | Carriers (n=8) | Others (n=27) |
|---|---|---|
| **Mean** | $3,622.00 | $2,267,781.00 |
| **Std. Error of Mean** | $1,124.00 | $1,924,572.00 |
| **Median** | $3,037.00 | $8,500.00 |
| **Minimum** | $50.00 | $500.00 |
| **Maximum** | $10,000.00 | $52,000,000 |

As highlighted in Figure V-8, the median cost savings of $3,037 reported by carriers experiencing cost savings was less than half of the median cost savings achieved by non-carriers reporting cost savings.

**Figure V-8: Carriers vs. All Others: Median Cost Savings**

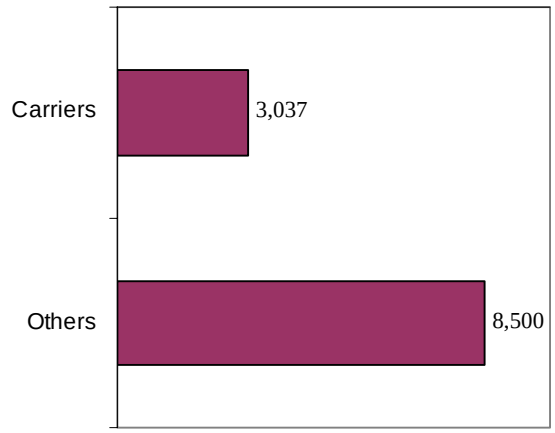



Table V-18 summarizes the total time savings reported by the six carriers reporting time savings in comparison to the time savings reported by the thirty-two other companies reporting time savings. Carrier time savings ranged to a minimum of 38 hours and maximum of 5,700 hours, but the median time savings for carriers of 375 annual hours was almost identical to the 373 annual hour figure for non-carriers.

**Table V-18: Total Time Savings (Carriers vs. All Others)**

| | Carriers (n=6) | Others (n=32) |
|---|---|---|
| **Mean** | 1,684 | 2,613 |
| **Std. Error of Mean** | 957 | 1492 |
| **Median** | 375 | 373 |
| **Minimum** | 38 | 25 |
| **Maximum** | 5,700 | 48,000 |

As indicated in Table V-19, twenty-six carriers reported at least one type of maintenance cost, with annual totals ranging from $2,000 to $106,000.

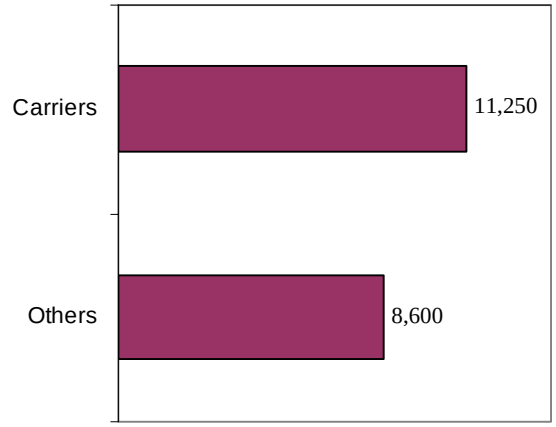
**Table V-19: Total Maintenance Costs (Carriers vs. All Others)**

| | Carriers (n=26) | Others (n=65) |
|---|---|---|
| **Mean** | $23,261.00 | $50,543.00 |
| **Std. Error of Mean** | $5,485.00 | $16,667.00 |
| **Median** | $11,250.00 | $8,600.00 |
| **Minimum** | $2,000.00 | $45.00 |
| **Maximum** | $106,000.00 | $815,000.00 |

As was the case with implementation costs, carriers reporting annual maintenance costs

reported significantly higher median annual maintenance costs ($11,250) than did other companies ($8,600). (See Figure V-9.)

**Figure V-9: Carriers vs. All Others: Median Maintenance Costs**




In summary, carriers reported considerably higher C-TPAT related costs but almost identical C-TPAT related savings as did non-carriers.

## Service Providers

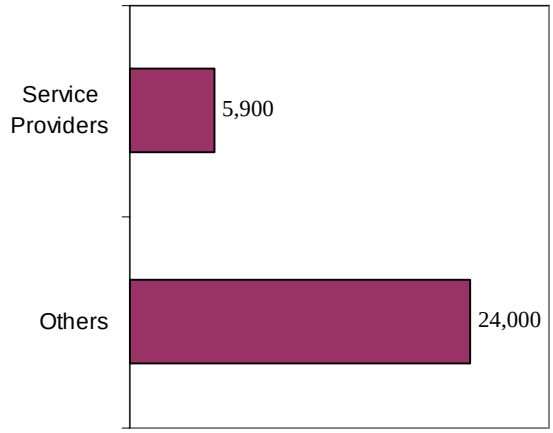
As shown in Table V-20, the thirty service providers that reported implementation costs of any kind experienced a minimum total cost of $300 and a maximum total cost of $550,000.

**Table V-20: Total Implementation Costs (Service Providers vs. All Others)**

| | Services (n=30) | Others (n=80) |
|---|---|---|
| **Mean** | $42,116.00 | $173,818.00 |
| **Std. Error of Mean** | $19,622.00 | $68501.00 |
| **Median** | $5,900.00 | $24,000.00 |
| **Minimum** | $300.00 | $280.00 |
| **Maximum** | $550,000.00 | $4,050,000.00 |

As highlighted in Figure V-10, the median implementation cost of $5,900 experienced by service providers was very significantly lower than the median implementation cost of $24,000 experience by other companies.

**Figure V-10: Service Providers vs. All Others: Medan Implementation Costs**




As indicated in Table V-21, ten service providers reported annual cost savings, and the company-specific totals for these cost savings ranged from a $500 annual minimum to a $755,000 annual maximum. The median annual cost savings for these service providers was $3,900, slightly lower than the median annual cost savings for other companies of $5,350.

**Table V-21: Total Cost Savings (Service Providers vs. All Others)**

| | Services (n=10) | Others (n=25) |
|---|---|---|
| **Mean** | $94,085.00 | $2,412,728 |
| **Std. Error of Mean** | $74,339.00 | $2,078,834 |
| **Median** | $3,900.00 | $5,350 |
| **Minimum** | $500.00 | $50.00 |
| **Maximum** | $755,000.00 | $52,000,000.00 |

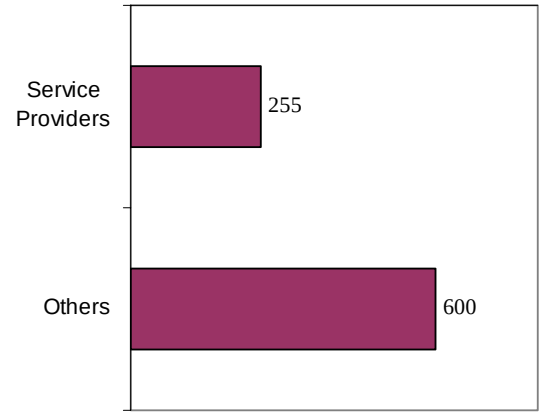
Among the fourteen service providers that reported time savings of any kind, estimates of yearly hours saved ranged from a minimum of 25 hours all the way up to a maximum of 48,000 hours. (See Table V-22.)

**Table V-22: Total Time Savings (Service Providers vs. All Others)**

| | Services (n=14) | Others (n=24) |
|---|---|---|
| **Mean** | 3,794 | 1,692 |
| **Std. Error of Mean** | 3,402 | 412 |
| **Median** | 255 | 600 |
| **Minimum** | 25 | 32 |
| **Maximum** | 48,000 | 6,600 |

As highlighted in Figure V-11, the median 255 annual hours saved by service providers reporting time savings was significantly lower than the median 600 annual hours for non-service providers reporting times savings.

**Figure V-11: Service Providers vs. All Others: Median Time Savings**




Finally, as indicated in Table V-23, the twenty-two service providers reporting annual maintenance costs reported total annual costs ranging from a minimum of as little as $300 to a maximum of as much as $815,000. The median

total annual maintenance cost of $6,000 for service providers is considerably lower than the median total annual maintenance cost for other companies of $10,000.

**Table V-23: Total Maintenance Costs (Service Providers vs. All Others)**

| | Services (n=22) | Others (n=69) |
|---|---|---|
| **Mean** | $54,286.00 | $39,070.00 |
| **Std. Error of Mean** | $36,788.00 | $10,924.00 |
| **Median** | $6,000.00 | $10,000.00 |
| **Minimum** | $300.00 | $45.00 |
| **Maximum** | $815,000.00 | $2,695,815.00 |

In summary, service providers tend to experience both lower costs and lower savings in accordance with their participation in C-TPAT.

## Manufacturers

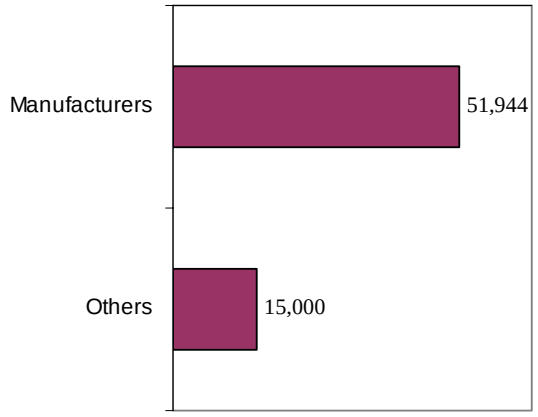
The twenty manufacturers that reported implementation costs of any kind experienced costs ranging from a minimum of $6,300 to a maximum of $3,700,000. (See Table V-24 for further details.)

**Table V-24: Total Implementation Costs (Manufacturers vs. All Others)**

| | Manufacturers (n=20) | Others (n=90) |
|---|---|---|
| **Mean** | $313,945.00 | $98,778.00 |
| **Std. Error of Mean** | $183,894.00 | $45,743.00 |
| **Median** | $51,944.00 | $15,000.00 |
| **Minimum** | $6,300.00 | $280.00 |
| **Maximum** | $3,700,000.00 | $4,050,000.00 |

As highlighted in Figure V-12, median total manufacturer implementation costs of $51,944 were more than triple the $15,000 median total implementation costs for other companies.

**Figure V-12: Manufacturers vs. All Others: Median Implementation Costs**



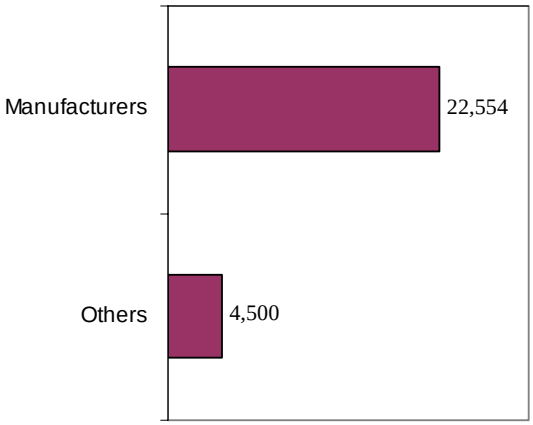

As indicated in Table V-25, the nine manufacturers that reported annual cost savings in accordance with C-TPAT participation reported achieving total annual savings of anywhere from $1,280 to $52,000,000.

**Table V-25: Total Cost Savings (Manufacturers vs. All Others)**

| | Manufacturers (n=9) | Others (n=26) |
|---|---|---|
| **Mean** | $6,687,082.00 | $41,359.00 |
| **Std. Error of Mean** | $5,696,009.00 | $28,956.00 |
| **Median** | $22,554.00 | $4,500.00 |
| **Minimum** | $1,280.00 | $50.00 |
| **Maximum** | $52,000,000.00 | $755,000.00 |

Notably, the median annual cost savings for these manufacturers of $22,500 – which controls for extremely high outliers – is approximately five times greater than the $4,500 median annual cost savings reported by non-manufacturers. (See Figure V-13.)

**Figure V-13: Manufacturers vs. All Others: Median Cost Savings**

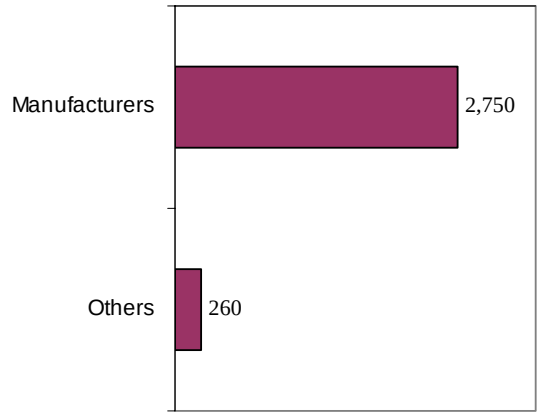



Examination of time savings suggests still more remarkable differences. As shown in Table V-26, manufacturers reporting time savings of any kind once again reported a wide range of values – with total annual time savings reported ranging from 32 to 5,500 hours. As highlighted in Figure V-14, however, the median annual manufacturer's time savings of 2,750 hours is more than ten times as great as the annual time savings of the median non-manufacturer (260 hours).

**Table V-26: Total Time Savings (Manufacturers vs. All Others)**

| | Manufacturers (n=7) | Others (n=31) |
|---|---|---|
| **Mean** | 2,417 | 2,478 |
| **Std. Error of Mean** | 679 | 1,545 |
| **Median** | 2,750 | 260 |
| **Minimum** | 32 | 25 |
| **Maximum** | 5,550 | 48,000 |

**Figure V-14: Manufacturers vs. All Others: Median Time Savings**




Finally, as indicated in Table V-27, the fifteen manufacturers reporting maintenance costs of any kind reported total annual maintenance costs of anywhere between $300 and $519,000. The median annual maintenance cost to manufacturers of $10,500 was slightly higher than the median annual maintenance cost to other companies of $9000.

**Table V-27: Total Maintenance Costs (Manufacturers vs. All Others)**

| | Manufacturers (n=15) | Others (n=76) |
|---|---|---|
| **Mean** | $50,842.00 | $41,151.00 |
| **Std. Error of Mean** | $33,778.00 | $12,898.00 |
| **Median** | $10,500.00 | $9,000.00 |
| **Minimum** | $300.00 | $45.00 |
| **Maximum** | $519,000.00 | $815,000.00 |

In summary, manufacturers seem to experience somewhat higher tangible costs and much higher tangible benefits in accordance with C-TPAT participation than do non-manufacturers.

## Border Delay Costs

Whereas many questions on the 2011 C-TPAT Costs & Savings survey pertain to all business types, and several others pertain only to a single business type, five brief questions inviting responding companies to quantify the costs of border delays are relatively unique in that they are asked of two business types: importers and carriers. (Given especially small sample sizes in regard to the responses to these questions we discuss the responses of importers and carriers together.)

Slightly under half (42.3 percent) of the importers and carriers who were asked whether they could assign a cost to each border delay due to a CBP inspection said that they could do so. (See Table B10 of Appendix B.)

As indicated in Table V-28, however, the number of companies actually providing estimates for each of four types of border-delay (land, sea, rail and air) is smaller, with a minimum of three companies (for rail) and a maximum of seventeen companies (for land) making numeric assessments.

Again, we must be mindful of the tendency of high outliers to pull mean cost assessments upwards, likely rendering the median costs the most desirable basis for comparison. Given the very limited sample sizes in the table, moreover, it is difficult to state with confidence anything beyond an unsurprising finding that sea delays are much more expensive for C-TPAT partners than are land delays, for those respondents who were able or willing to estimate these costs.

**Table V-28: Costs Assigned to Border Delays due to CBP Inspections**

| | Land (n=17) | Sea (n=16) | Rail (n=3) | Air (n=7) |
|---|---|---|---|---|
| **Mean** | $423.00 | $2672.00 | $833.00 | $3,750.00 |
| **Std. Error of Mean** | $118.00 | $865.00 | $167.00 | $2,791.00 |
| **Median** | $200.00 | $1,500.00 | $1,000.00 | $500.00 |
| **Minimum** | $35.00 | $345.00 | $500.00 | $50.00 |
| **Maximum** | $1,500.00 | $12,000.00 | $1,000.00 | $20,000.00 |

## Scope, Screening and Sanctioning

A secondary purpose of the 2011 C-TPAT Costs & Savings Survey involves separating from the C-TPAT 2010 Partner Survey various quantitative questions that place a relatively high burden on survey respondents (and are therefore thought to have decreased response rate in the C-TPAT 2007 Partner Survey). While the vast majority of these questions are accurately characterized as "Costs & Savings" questions, those (briefly) reviewed in the present section might more accurately be called "scope, screening and sanctioning" questions involving numeric responses not pertaining to costs and savings.

As the questions asked vary considerably by business type we provide separate summaries of results for importers, carriers, service providers and manufacturers. (Item non-response to these questions was generally very low, with almost all companies of a given type responding to each question.)

### *Importers*

When asked how many foreign suppliers, manufacturers or vendors their company used, importers gave responses ranging from a minimum of 2 to a maximum of 25,000, with a median of 20. Recent importer rejections of prospective foreign business partners due to security concerns ranged from 0 to 10, with a median of 0. (See Table V-29 on the following page as well as Table B11a of Appendix B for additional details.)

When asked about service providers, importers reported using anywhere from 3 to 89 with a median of 13.5 (10 of which were typically C-TPAT certified). Recent drops of current service providers due to security concerns ranged from 0 to 3 (median = 0; mean = 0.2); recent rejections of prospective service providers due to security concerns ranged from 0 to 5 (median = 0; mean = 0.5). (See Table V-29 on the following page as well as Table B11a of Appendix B for additional details.)

**Table V-29: Scope, Screening and Sanctioning (Importers)**

| | Approximately how many foreign suppliers, manufacturers, or vendors does your company use? (n=38) | In the past twelve months, approximately how many prospective foreign supplies, manufacturers, or vendors has your company rejected during screening in part or wholly due to security concerns? (n=33) | Approximately how many service providers does your company use, including carriers, freight forwarders/consolidators, brokers, ports, terminal operators, and warehouse facilities? (n=38) | Approximately how many of your company's service providers are C-TPAT Certified? (n=36) | In the past twelve months, approximately how many service providers has your company dropped in part or wholly due to security concerns? (n=36) | In the past twelve months, approximately how many prospective service providers has your company rejected during screening in part or wholly due to security concerns? (n=39) |
|---|---|---|---|---|---|---|
| **Mean** | 742.39 | 0.39 | 19.29 | 16.31 | 0.18 | 0.54 |
| **Std. Error of Mean** | 656.26 | 0.31 | 2.97 | 3.08 | 0.096 | 0.20 |
| **Median** | 20.00 | 0.00 | 13.50 | 10.00 | 0.00 | 0.00 |
| **Minimum** | 2.00 | 0.00 | 3.00 | 3.00 | 0.00 | 0.00 |
| **Maximum** | 25,000.00 | 10.00 | 89.00 | 99.00 | 3.00 | 5.00 |

## *Importer Reviews of Customers and Service Providers*

Importers were also asked how often they review certification and security procedures among their customers or service providers. In general, about three-quarters of carriers do so annually or more frequently. See Figure V-15 through Figure V-25.

**Figure V-15: Reviews of foreign suppliers/ manufacturers/ vendors for adherence to C-TPAT standards (Importers)**

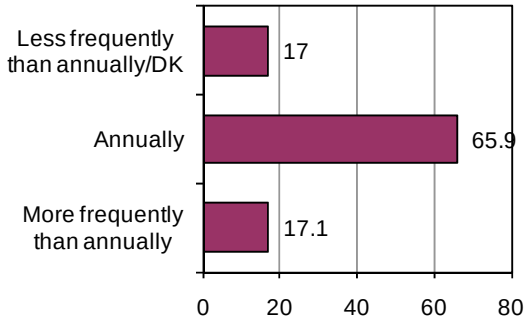



**Figure V-16: Review non-C-TPAT service providers for adherence to C-TPAT standards (Importers)**

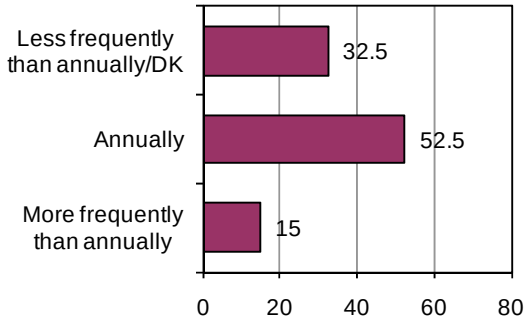
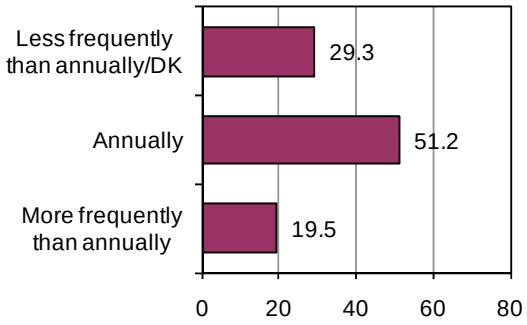



**Figure V-17: Review C-TPAT Certified service providers' certification status (Importers)**




## *Carriers*

Carriers were asked a particularly wide selection of scope, screening and sanctioning questions.

As indicated in Table V-30, Carriers were first asked to estimate the percentage of customers that, since becoming C-TPAT certified, they screen for indicators of security risk. Because in this case the median and maximum values are both equivalent to 100, the mean value of 76.7 percent is at least equally informative. Prior to joining C-TPAT, only 64.7 percent of carriers reported conducting any screening at all. (See Table B11b in Appendix B for additional details.)

Carriers reported having anywhere from 3 to 400,000 customers, with a median of 25 customers (typically, 15 of which are C-TPAT certified). Recent drops of customers due to security concerns ranged from 0 to 30 (median = 0; mean = 2); recent rejections of prospective customers due to security concerns ranged from 0 to 10 (median = 0; mean = 1.5). (See Table V-30 on the following page as well as Table B11b of Appendix B for additional details.)

When asked about service providers, carriers reported using between 0 and 200 with a median of 10 (only 2.5 of which were typically C-TPAT certified). Recent drops of current service providers due to security concerns ranged from 0 to 1 (median = 0; mean = 0.1); recent rejections of prospective service providers due to security concerns ranged from 0 to 5 (median = 0; mean = 0.6). (See Table V-30 on the following page as well as Table B11b of Appendix B for additional details.)

**Table V-30: Scope, Screening and Sanctioning (Carriers)**

| | Since becoming C-TPAT Certified, what percentage of customers does your company screen for indicators of security risk? (n=31) | Approximately how many current customers does your company have? (n=27) | Approximately how many of your company's current customers are C-TPAT Certified? (n=28) | In the past twelve months, approximately how many customers has your company dropped in part or wholly due to security concerns? (n=30) | In the past twelve months, approximately how many prospective customers has your company rejected during screening in part or wholly due to security concerns? (n=26) | Approximately how many service providers does your company use, including cargo-handling facilities, terminal operators, vendors, and other contractors? (n=29) | Approximately how many of your company's service providers are C-TPAT Certified? (n=26) | In the past twelve months, approximately how many service providers has your company dropped in part or wholly due to security concerns? (n=28) | In the past twelve months, approximately how many prospective service providers has your company rejected during screening in part or wholly due to security concerns? (n=29) |
|---|---|---|---|---|---|---|---|---|---|
| **Mean** | 76.74 | 16,281.59 | 60.18 | 2.00 | 1.46 | 34.76 | 10.23 | 0.07 | 0.59 |
| **Std. Error of Mean** | 6.51 | 14,814.66 | 35.27 | 1.130 | 0.57 | 10.58 | 4.15 | 0.050 | 0.25 |
| **Median** | 100.00 | 25.000 | 15.00 | 0.00 | 0.00 | 10.00 | 2.50 | 0.00 | 0.00 |
| **Minimum** | 0.00 | 3.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Maximum** | 100.00 | 400,000.00 | 1,000.00 | 30.00 | 10.00 | 200.00 | 95.00 | 1.00 | 5.00 |

## *Carrier Reviews of Customers and Service Providers*

Carriers were also asked how often they review certification and security procedures among their customers or service providers. In general, about three-quarters of carriers do so annually or more frequently. See Figure V-18 through Figure V-20.

**Figure V-18: Review non-C-TPAT service providers for adherence to C-TPAT standards (Carriers)**

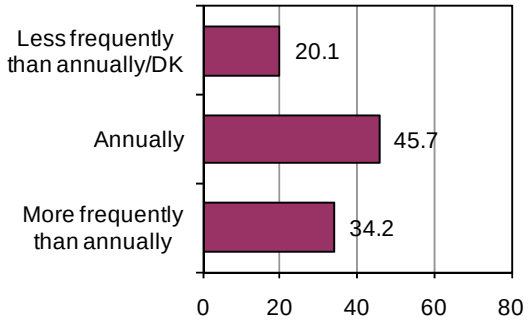



**Figure V-19: Review non-C-TPAT service providers for adherence to C-TPAT standards (Carriers)**

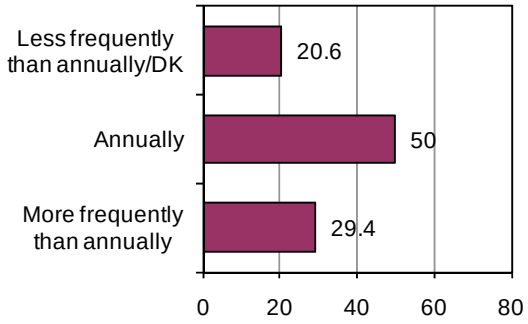
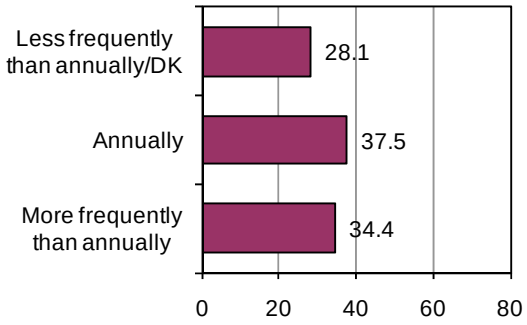



**Figure V-20: Review C-TPAT Certified service providers' certification status (Carriers)**




## *Service Providers*

As indicated in Table V-31, service providers reported having anywhere from 1 to 10,000 customers with a median of 200 (only 12.5 of which are typically C-TPAT certified). Recent rejections of prospective customers due to security concerns ranged from 0 to 35 (median = 0; mean = 1.7). (See Table B11c of Appendix B for additional details.)

Service providers reported working with between 0 and 200 other service providers (median = 22.5, typically about 10 of which are C-TPAT certified). In the past twelve months, service providers report rejecting between 0 and 10 other service providers due to security concerns (median = 0; mean = 0.7).

**Table V-31: Scope, Screening and Sanctioning (Service Providers)**

| | Approximately how many current customers does your company have? (n=36) | Approximately how many of your company's current customers are C-TPAT Certified? (n=28) | In the past twelve months, approximately how many prospective customers has your company rejected during screening in part or wholly due to security concerns? (n=37) | Approximately how many service providers does your company use, including carriers, freight forwarders/consolidators, brokers, ports, terminal operators, and warehouse facilities? (n=28) | Approximately how many of your company's service providers are C-TPAT Certified? (n=30) | In the past twelve months, approximately how many prospective service providers has your company rejected during screening in part or wholly due to security concerns? (n=33) |
|---|---|---|---|---|---|---|
| **Mean** | 949.47 | 27.04 | 1.65 | 41.00 | 27.07 | 0.70 |
| **Std. Error of Mean** | 392.65 | 6.12 | 0.96 | 8.82 | 8.71 | 0.34 |
| **Median** | 200.00 | 12.50 | 0.00 | 22.50 | 10.00 | 0.00 |
| **Minimum** | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Maximum** | 10,000.00 | 105.00 | 35.00 | 200.00 | 250.00 | 10.00 |

## *Service Provider Reviews of Customers and Service Providers*

Service providers were also asked how often they review certification and security procedures among their customers or service providers. In general, about three-quarters of carriers do so annually or more frequently. See Figure V-21 through Figure V-23.

**Figure V-21: Reviews of foreign suppliers/ manufacturers/ vendors for adherence to C-TPAT standards (Service Providers)**

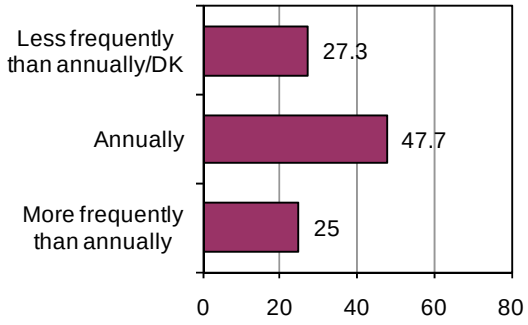



**Figure V-22: Review non-C-TPAT service providers for adherence to C-TPAT standards (Service Providers)**

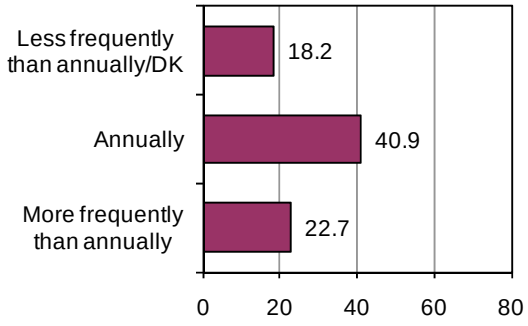
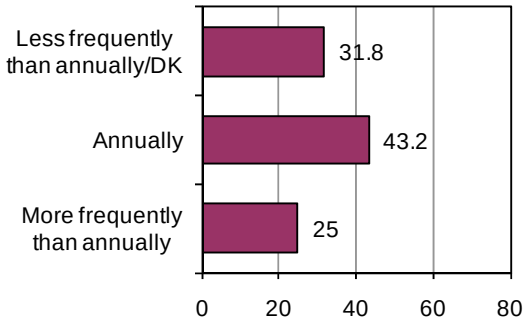



**Figure V-23: Review C-TPAT Certified service providers' certification status (Service Providers)**




## *Manufacturers*

Manufacturers were asked just four scope, screening and sanctioning questions, all of which pertained to their relationships with service providers. As indicated in Table V-32, manufacturers reported working with a minimum of 0 and a maximum of 1500 service providers. The median number of service providers was 10, approximately 7 of which are C-TPAT certified. Recent drops of current service providers ranged between 0 and 5 (median = 0; mean = 0.6) and recent rejections of prospective service providers ranged between 0 and 10 (median = 0; mean = 1.7).

**Table V-32: Scope, Screening and Sanctioning (Manufacturers)**

| | Approximately how many service providers does your company use, including carriers, freight forwarders/consolidators, brokers, ports, terminal operators, and warehouse facilities? (n=19) | Approximately how many of your company's service providers are C-TPAT Certified? (n=20) | In the past twelve months, approximately how many service providers has your company dropped in part or wholly due to security concerns? (n=17) | In the past twelve months, approximately how many prospective service providers has your company rejected during screening in part or wholly due to security concerns? (n=16) |
|---|---|---|---|---|
| **Mean** | 99.00 | 25.25 | 0.65 | 1.69 |
| **Std. Error of Mean** | 78.22 | 10.34 | 0.32 | 0.69 |
| **Median** | 10.00 | 7.00 | 0.00 | 0.00 |
| **Minimum** | 0.00 | 1.00 | 0.00 | 0.00 |
| **Maximum** | 1,500.00 | 150.00 | 5.00 | 10.00 |

### *Manufacturer Reviews of Customers and Service Providers*

Manufacturers were also asked how often they review certification and security procedures among their customers or service providers. In general, about three-quarters of carriers do so annually or more frequently. See Figure V-24 and Figure V-25.

**Figure V-24: Review non-C-TPAT service providers for adherence to C-TPAT standards (Manufacturers)**

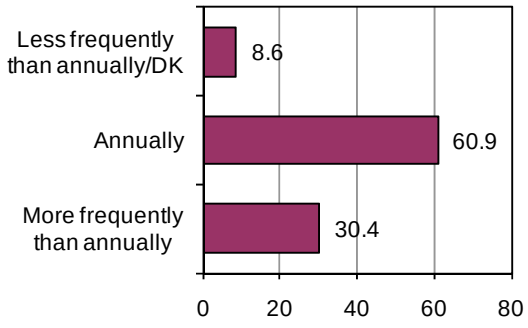
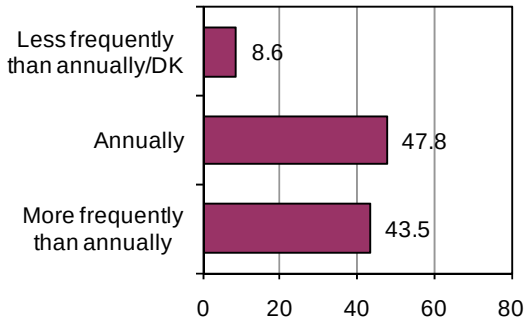



**Figure V-25: Review C-TPAT Certified service providers' certification status (Manufacturers)**




## Overall Experience

Companies' overall experience in C-TPAT can be assessed in multiple ways. A first approach involves asking companies to estimate their total annual expenditures on supply chain security and the percentage of those expenditures attributable to C-TPAT *without* directly referencing any of the specific costs thus far discussed in the report.

"Stand-alone" estimates of total annual supply chain security expenditures among the 66 responding companies providing such estimates ranged from a minimum of $0 to a maximum of $50,000,000. The median estimate was $25,000, less than one-fortieth of the mean estimate of $1,007,420. On average, responding companies estimated that slightly less than half (46.4 percent) of their overall supply-chain security expenditures were attributable to C-TPAT.

**Table V-33: Total Annual Security Expenditures / Percentage Attributable to C-TPAT**

| | Total estimated amount of security-related expenditures (n=66) | What percentage of the amount you gave is attributable to C-TPAT? (n=68) |
|---|---|---|
| **Mean** | $1,007,420.00 | 46.4% |
| **Std. Error of Mean** | $759,919.00 | 4.4% |
| **Median** | $25,000.00 | 50.0% |
| **Minimum** | $0.00 | 0.0% |
| **Maximum** | $50,000,000.00 | 100.0% |

A different perspective on overall costs and savings might be obtained by attempting to sum across the various categories of costs and savings already discussed in this report. In point of fact, however, only the "maintenance costs" section of this report deals with *annual* financial costs, much as only the "cost savings" section of the report deals with annual financial savings. Thus, although it is certainly possible to calculate a variable measuring the difference between annual cost savings and annual maintenance costs for respondents providing estimates of both (n=27, median = -$1100; mean = $2,014,555), two much more direct questions from the survey allow us to consider net costs/savings in regard to a considerably larger sample of companies.

Specifically, a full 144 responding companies answered the following question:

*Thinking about all of the financial costs and financial savings associated with being a C-TPAT Partner, which of the following best describes the net result for your company?*

*1 Positive (net cost savings – C-TPAT saves us more than it costs)*
*2 Zero (net neutral results – C-TPAT costs and savings are about equal)*
*3 Negative (net costs – C-TPAT costs us more than it saves)*
*8 Don't know/cannot estimate*
*9 Prefer not to say*

Responses among the 119 companies selecting among the first three response options were split relatively evenly, with 27.8 percent of respondents reporting a net positive financial experience, 23.6 percent of respondents reporting a net negative financial experience and 31.3 percent of respondents reporting a net neutral financial experience. (See Table B12 of Appendix B for details.)

The majority of respondents expressing either a positive or negative financial experience were in turn asked, "Approximately what dollar amount would you put on these savings/costs?" The results of the follow-up question (with results broken down between companies reporting net savings and companies reporting net costs) are summarized in Table V-34.

**Table V-34: Summary Statistics Comparing those Reporting Net Savings / Net Costs from C-TPAT**

| Thinking about all of the financial costs and financial savings associated with being a C-TPAT Partner, which of the following best describes the net result for your company? | Mean | Std. Error of Mean | Median | Minimum | Maximum |
|---|---|---|---|---|---|
| **NET SAVINGS as estimated by those saying that C-TPAT saves them more than it costs (n=32)** | $990,229.00 | $688,391.00 | $7,750.00 | $0.00 | $20,000,000.00 |
| **NET COSTS as estimated by those saying that C-TPAT costs them more than it saves (n=26)** | $30,204.00 | $11,005.00 | $12,700.00 | $0.00 | $250,000.00 |

Here, as elsewhere, there are high outliers – in particular, the reported net savings of $20,000,000 achieved by a foreign manufacturer with over $10 billion in annual revenue.[9] If we look at mean statistics alone, we might conclude that C-TPAT related savings positively dwarf C-TPAT related costs – specifically, by a ratio of more than thirty to one. However, as noted earlier, in a skewed distribution we rely on the median as the better measure of central tendency. These figures paint a somewhat more plausible picture in which the median savings reported by those who had net savings ($7,750) amounts to a little over sixty percent of the median costs ($12,700) of net "payers," but there are more savers (55%) than there are payers (45%).

Judged from a purely financial standpoint, in other words, C-TPAT participation appears to cost "typical" members slightly more than it saves them. Responses to an additional question about the prospects of future cost savings indicate that this is unlikely to change. Specifically, although the percentage of respondents who expect greater cost savings in the future (17.0 percent) easily surpasses the percentage of respondents who expect less cost savings in the future (4.8 percent), the vast majority of respondents (61.2 percent) do not expect any cost savings at all in the future. (See Table B12 of Appendix B for details.)

It is worth keeping this context in mind when reviewing the findings from the final numeric quantity question included in the 2011 Costs & Savings Survey. These results are consistent with the bigger picture suggested by previous C-TPAT partner surveys, in which participants expressed very high levels of satisfaction with the program despite the costs of participation.

[9] This is the same manufacturer for which CSR staff confirmed the accuracy of figures via e-mail.

Specifically, as indicated in Table V-35, C-TPAT certification is increasingly seen as a basic requirement of doing business, with responding companies estimating that almost half of all contracts for supply chain relationships (mean = 44.2%; median = 47.5%) require bidders to be C-TPAT certified.

**Table V-35: C-TPAT Certification as a Contractual Requirement**

| | In your experience, what percentage of contracts for supply chain relationships these days require bidders to be C-TPAT certified? (n=134) |
|---|---|
| **Mean** | 44.2% |
| **Std. Error of Mean** | 3.0% |
| **Median** | 47.5% |
| **Minimum** | 0.0% |
| **Maximum** | 100.0% |

It was not the primary purpose of the 2011 Costs & Savings Survey to explore the reasons why this has come to be and why participating companies seem quite satisfied with C-TPAT membership despite its costs. And the 2011 survey did not prime respondents to discuss intangible benefits or perceived responsibilities to society related to C-TPAT membership. Therefore, it is all the more noteworthy that these issues were repeatedly raised in respondents' open-ended comments, which we discuss in the next section of this report.

## Open-Ended Responses

The responses to all open-ended items are found in Appendix C to this report. They are always very helpful to read through because they add important nuance and understanding to the quantitative data. Note that there are responses that describe why participants do not see value to the program, or suggest what could be done to enhance value. These are important themes in the responses that should not be ignored.

However, given the importance of what respondents had to say about the intangible benefits of the C-TPAT program and how those responses relate to the detailed financial focus of the 2011 CSS, several of the responses about intangible benefits are featured here.

*"With the added security on back doors, our insurance rates were adjusted downward."*

*"I did not list any cost savings with C-TPAT because it is very hard to estimate any savings. If we did have savings, it would be in the form of better security at our facilities. It is hard to put a price on that."*

*"We cannot justify cost savings by being C-TPAT Compliant as we treat this as a 100% cost to the company to maintain compliance. In the ever-changing requirements to policy and procedures for the program, all costs associated are a direct hit to cost on bottom line."*

*"Cost savings have not been substantial to this point in time. But hope to realize more in the future."*

*"There were no real cost savings, they did however, enhance our ability to properly monitor and evaluate our security procedures."*

*"Site improvements were made to comply with C-TPAT which did cost but did improve site and overall protection of goods."*

*"I do not believe we have had any cost savings since our initial investment, and our annual operating costs (i.e.; seals, locks, training). But, I will say that apart from the additional security benefits. We have enjoyed a sizable increase in volumes of freight available to us, by manufacturers and 3PL companies that also participate in the program. It's a winning combination."*

*"Employee screening and property security would be hard to measure. As a result of implementing our security improvements we have experienced no security violations, and have hired a better quality employee. Screening potential employees with criminal backgrounds has removed potential internal security risks."*

*"We do not have any cost savings but our customers prefer that we are C-TPAT approved. Also, we feel that upgrading security is a plus and the fact we export to the US makes it a lot easier when our goods enter the US. We feel it is a 'win-win' situation for both countries."*

*"Because of other security program requirements, those required by C-TPAT are also covered."*

*"What C-TPAT has done for us is it has smoothed our movement through Customs and Border Protection during import which has greatly improved the flow of materials into this country. For this we are very grateful."*

*"Although the savings cannot be measured in dollars and cents there is a great degree of satisfaction in knowing that we have done our part in securing our warehouses and 3OL facilities. That we only deal with reliable and secure participants."*

*"We didn't experience any cost saving on all activities included in this survey, but on the other hand they are expenses being done that will not cost us in the future or if they would it would be less than the first investment."*

*"C-TPAT has become a standard requirement in all aspects of our operation. A monetary value on our membership cannot really be*

*determined but for quality/security assurance requirements, being C-TPAT certified is a value for the company."*

*"The value is the amount of time that is saved not having to investigate security issues from internal or external security violations. The C-TPAT program has helped reduce the security risk to our product. The C-TPAT program had been a very good guideline with other security programs that our company is involved in. Because our corporation is involved in manufacturing it is almost impossible to place a dollar value on the benefits of C-TPAT. C-TPAT is another measure of layered security that we require in our industry in dealing with foreign governments and US Government security requirements."*

*"One of the questions relates to the benefits of the program, and even though on paper it looks as if it costs us more to operate the program than the benefits we enjoy from it, I expect that there is an opportunity cost of not participating in the C-TPAT program. Determining what the opportunity costs are [for] loss of business opportunity would be extremely difficult."*

*"We believe in being good corporate citizens. There is no compromise or substitute for security or safety. We put a high value on C-TPAT protocols that allows us business continuity, quick turnaround of our imports and a partnership that we can refer to when on boarding a new vendor."*

*"C-TPAT participation to us is partnering with our clients and also assuring that the shipments of (company name deleted) going to the states is safe in every way. When we decided to join C-TPAT we did not expect any savings but we wanted to be recognized as a partner that could be trusted to monitor and assure that our shipments were safe when they left our facility."*

*"Overall, I think CTPAT is a worthwhile endeavor for any company to implement. It is very hard on the front end to get your processes and systems updated but it is worth it to keep the supply chain safe and protect our country and employees."*

All of the open-ended responses are worth reviewing, but these seemed particularly noteworthy because they go beyond the measurement frame of fiscal benefits that underlies much of the 2011 CSS.

## Conclusion

The 2011 CSS is a drill-down survey that captures the great range and variety of costs and savings experiences among C-TPAT members. These variegated experiences make it difficult to generalize the results to the entire population of C-TPAT members. The financial costs and savings experiences of C-TPAT members seem to depend on the unique situation of each firm. Some reported significant savings, others significant costs, and others reported a net of about zero.

The broad story told by the respondents is that the value of C-TPAT membership goes beyond dollars and cents. It includes risk avoidance, a communal approach to a safer supply chain, being able to compete for contracts that require C-TPAT membership, and taking advantage of the credibility that C-TPAT membership brings.

Despite the positives, there is room for improvement. A non-ignorable minority of respondents report that they do not see the benefits they expected, and there are some detailed recommendations in the open-ended response for how to improve the program. And if it is the intent of the C-TPAT program to maximize the number of contracts that require C-TPAT bidders, then those numbers can be increased – 50 percent of the respondents said that less than half of contracts require C-TPAT certification.

Overall, however, it seems clear that the C-TPAT program has become a vital part of supply chain security in the post-9/11 world, and the C-TPAT membership continues to be a critical source of feedback and recommendations for improvement.

## Potential Improvements for the Next Costs & Savings Survey

The development of the 2011 CSS was complex. Those costs could be shifted to data collection in the next iteration, allowing a larger sample size to support greater generalizability. However, the great range of data values in the survey will most likely continue to exist even with larger sample sizes.

One respondent suggested that the survey should ask about sales or revenue increases based on C-TPAT membership, and it should ask about costs associated with advertising C-TPAT membership or status, the cost to monitor clients and service providers, and to update the portal.

The next iteration of the survey might also expand the number of questions relating to the intangible benefits of membership.

The data collection phase of the 2011 CSS made use of telephone contact before and during the field period to clean the contact list and follow up with non-respondents. This telephone work was very successful and should be included in future iterations, and expanded in detail and scope.

The paper worksheets also seemed to be very helpful and should be include in any future iteration of the CSS.

The development of another iteration of the CSS should also take into account comments about the survey-taking experience that were left by respondents to the 2011 survey.