

After provision of information and the development and/or deployment of a commercialized technology, the final step of the technology adoption process for an organization is applying the technology to its operational problems. Because such a process is learning intensive and often difficult, providing application assistance can often aid in removing barriers to effective use of technology. Because of the difficulties that can occur, a number of government strategies exist to attempt to facilitate complete technology adoption so law enforcement organizations are able to use their acquired technologies to the greatest public benefit. The strategies discussed in this chapter focus mainly on the human factors associated with technology adoption though, through the provision of information, they can also serve to reduce some of the other risks as well.

The forms of technology support discussed in this chapter include *technology assistance*, such as science or engineering advice and support and *technology advice*, which focuses on selection of technologies and is disseminated through publications or web sites.¹ Both of these mechanisms, by trying to convey lessons about technology adoption or support acquisition, help members of these organizations more effectively learn what they need to put new technology to effective use. By providing broader technical information, they may also reduce the technological risks and make it easier to

¹An example of such technology advice, which is of particular interest to smaller departments is the Spring 2000 issue of International Association of Chiefs of Police, *Big Ideas for Smaller Police Departments*, "Acquisition of New Technology: A Best Practices Guide."

discern the relative costs and benefits of technologies as well. *Technology news*, conveyed through federal reports, newsletters, and other channels has similar impacts. Support of local law enforcement personnel attending *technology conferences* is a route more completely aimed at the human factors of technology adoption. Similarly support of *training programs*, by providing the opportunity to directly teach officers or staff what they need to know to get the most out of technology, can also be beneficial in this area.

Key Findings from this chapter include:

- The fraction of departments receiving various types of federal technology application assistance vary markedly both among program types and, within individual programs, with department size. While trends do not always favor the largest departments, they never favor the smallest.
- Although the majority of recipients for all technology assistance programs at least find the aid somewhat helpful, it is clear that opportunities exist to improve the support that is provided. In addition, the relatively low percentages of departments that report receiving assistance suggest an opportunity to promote and broaden the programs to a wider audience if resources are available to do so.
- For all programs, survey respondents from forensics science labs are uniformly more enthusiastic and positive about the benefits and effectiveness of these programs. This suggests that current mechanisms connect with and serve this audience better than analogous programs for the broader law enforcement community.

It should be noted that, as was the case in Chapter 8, the findings presented in this chapter focus on local departments and forensic laboratories, while not providing data on state police. This is because we believe there were too few responses from state police to the RAND survey for us to assess how well federal programs serve their needs.

TECHNOLOGY ASSISTANCE

Through its technology assistance programs the National Institute of Justice (NIJ), the Federal Bureau of Investigation (FBI), and other federal agencies bring technology and specialized expertise to bear on local criminal investigations. Such assistance includes audio enhancement of tape recordings, still photo enhancement of surveillance videotapes, analysis of computer files, and metallurgical evidence analysis. In addition to contributing to the investigations in which the analyzed evidence plays a part, such assistance can also transmit information about novel technological possibilities and techniques.

The RAND survey found that 40 percent of local police departments with more than 100 officers, but only 19 percent of departments with fewer officers, reported having received federal technology assistance, such as science or engineering advice or support, during the past year.² Although success rates for departments—the percentage of departments that actually received aid that they requested—did vary by size, it did not follow a smooth pattern (Table 28).

Among local departments that expressed an opinion on received federal technology assistance, a large majority found it at least somewhat helpful (LETS, 13g; FTS, 18g). Opportunities for improvement

Table 28
Percent of Local Police Receiving Requested Federal Technology Assistance During Past Year, by Population Served

	Rural	Urban <25K	Urban 25–75K	Urban 75–225K	Large Urban >225K
Technology assistance	32%	35%	47%	77%	53%

SOURCE: LETS, 13g. Numbers are statistically adjusted percent of local police in each size strata indicating federal support requested in the past year was provided. Weighted n=8,170.

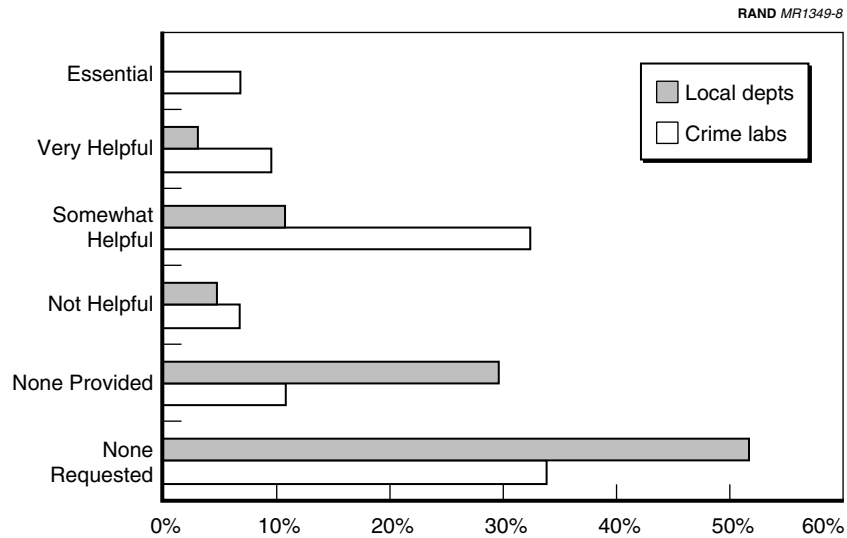
²For the LETS survey to local police, percentages have been statistically adjusted to represent the entire population. See Appendix A for a description of the adjustment methodology. For the LETS survey to state police and the FTS survey to crime labs, results are reported as unadjusted percentages.

are suggested in the large fraction of departments that reported not receiving or requesting any assistance and the fact that so few of the departments that found the aid helpful found it “very helpful” or “essential.” The respondents to the Forensics Technology Survey indicate that a much larger fraction of the surveyed laboratories had requested and received aid than had police departments. Of those receiving it, a very large majority indicated that it was at least somewhat helpful and approximately 16 percent of the survey respondents indicated it was very helpful or essential (Figure 8). Additional information on the specific sources of technology assistance utilized by local law enforcement and criminal laboratories for specific purposes is available in the companion volume to this study (Davis, Schwabe, and Fricker, 2001).

In conducting this study, we learned of several notable achievements of NLECTCs in providing technology assistance to local police agencies, such as the work in Utica, New York, to improve arson investigation and in Ventura, California, to design an information systems and communication infrastructure. It should be noted that the problem with advertising such success stories, which would certainly increase awareness and demand for these services, is that the increase could potentially exceed the capacity of the NLECTCs to supply technology assistance.

NEWS

The provision of news about new technology through federal reports and newsletters is another way to support technology adoption efforts at the state and local level. The RAND survey found that 57 percent of all local police departments with more than 100 officers, but only 41 percent of departments with fewer officers, reported having received news about technology from federal agencies during the past year. Unlike previous programs, the highest success rates—departments in fact receiving technology news which they requested—were observed for medium-sized departments (25,000–75,000 and 75,000–225,000 citizens).

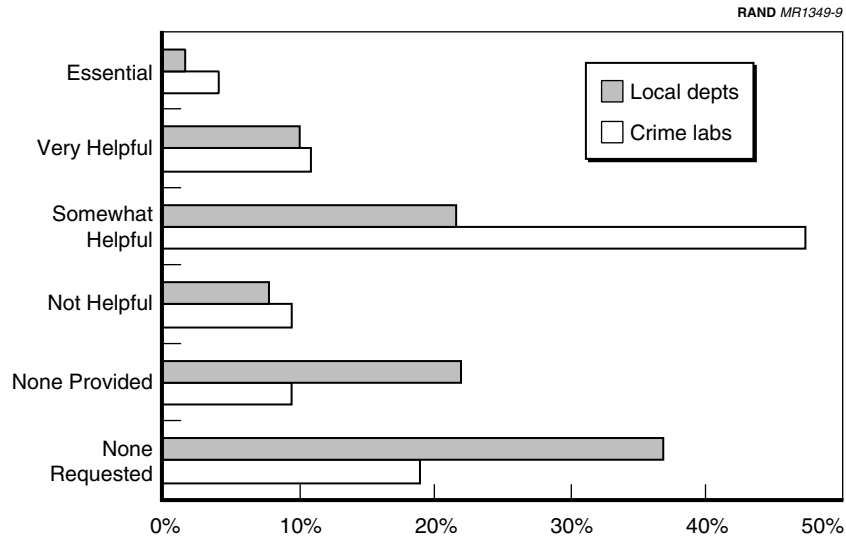


SOURCE: RAND LETS, 13g; FTS, 18g. FTS numbers shown are percent of respondents; LETS values are statistically adjusted percentages.

Figure 8—Utilization and Helpfulness of Federal Technology Assistance

Among laboratories and departments that expressed an opinion on received technology news, a large majority found it at least somewhat helpful (Figure 9). A smaller number of the respondents indicated that news was either very helpful or essential. This, in contribution with the number of laboratories and departments that did not request or receive federal technology news, represent important areas for program promotion and improvement.

In an effort to improve the provision of such technology knowledge, the Office of Justice Programs (OJP) has been exploring additional options and distribution routes. From several conferences and focus groups, the OJP has identified a strong desire among state and local agencies for establishment of a Web-oriented resource center, which would include a staff available to answer questions and help direct people to other sources of information. Efforts are under way to identify what the content of a resource center should be.



SOURCE: LETS, 13e; FTS, 18e. Numbers shown are percent of respondents. FTS numbers shown are percent of respondents; LETS values are statistically adjusted percentages.

Figure 9—Utilization and Helpfulness of Technology News from Federal Agencies

ADVICE

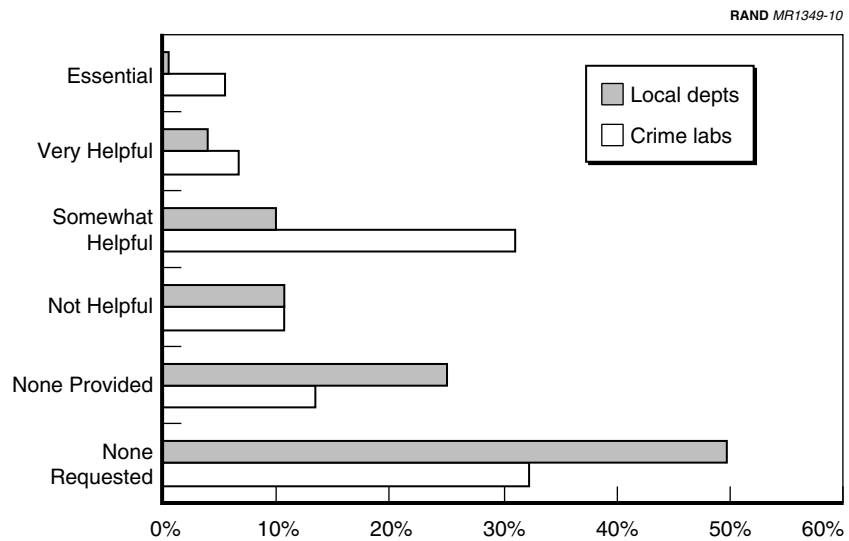
One potential aid federal agencies can provide to police departments and laboratories is advice on technology selection and procurement. The RAND survey found that 38 percent of all local police departments with more than 100 officers, but only 25 percent of departments with fewer officers, reported having received advice from federal agencies on selecting technology during the past year. Department success rates in receiving requested technology advice also varied by size (Table 29).

Among local departments expressing an opinion on received technology advice (Figure 10), a modest majority believed that it was at least somewhat helpful (approximately 14 percent of respondents

Table 29
Percent of Local Police Receiving Requested Advice from Federal Agencies on Selecting Technology During Past Year, by Population Served

	Rural	Urban <25K	Urban 25-75K	Urban 75-225K	Large Urban >225K
Advice on selecting technology	45%	44%	67%	71%	58%

SOURCE: LETS, 13d. Numbers are statistically adjusted percent of local police in each size strata indicating federal support requested in the past year was provided. Weighted n=8,170.



SOURCE: LETS, 13d; FTS, 18d. FTS numbers shown are percent of respondents; LETS values are statistically adjusted percentages.

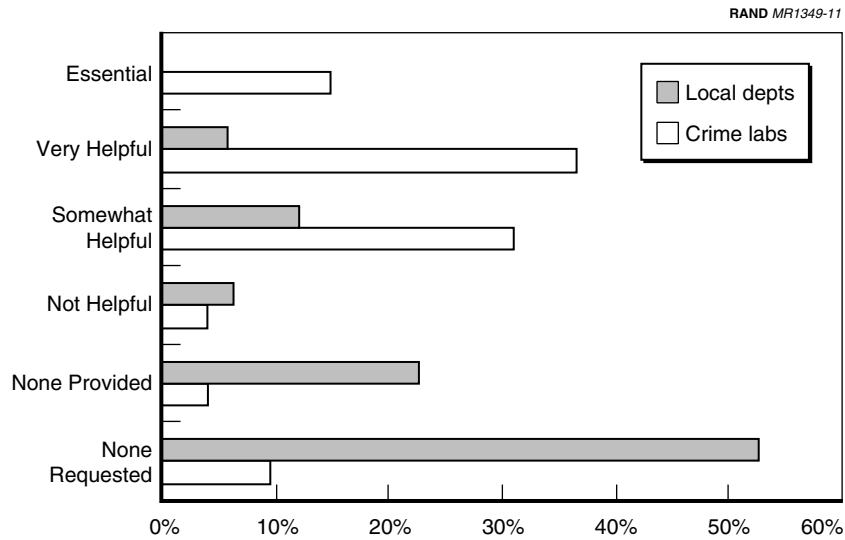
Figure 10—Utilization and Helpfulness of Federal Advice on Selecting Technology

believed the advice was somewhat helpful or very helpful versus 10 percent of respondents who believed it was unhelpful); for forensic laboratories, a much larger fraction found the advice at least somewhat helpful and a much larger fraction of laboratories found the advice either very helpful or essential than was reported by police departments. As was the case for previous programs, it is clear that more police departments and laboratories could benefit from federal technology advice if more was requested or provided. In addition, the relative opinion of the support received in this area suggests this might be an opportune target to better match the advice provided to the needs of its recipients, especially local police departments.

CONFERENCES

Conferences, by allowing access to the most up-to-date technology and training opportunities, can provide an important source for technical information and knowledge. Eighteen percent of rural police departments reported receiving technology-related conference support from federal sources during the past year. Percentages were higher for urban departments serving up to 75,000 (24–31 percent) and larger urban populations (42–45 percent) (LETS, 13b).

Examining how respondents characterized the conference support, the difference between police departments and crime laboratories is striking (Figure 11). First, in the case of the laboratories, a large majority of the respondents indicated they had received federal assistance in this area; of those, a very significant majority found the support at least somewhat helpful (by a factor of 20 to 1 over those that found it unhelpful). A majority of respondents (51 percent) rated the support as very helpful or essential. This suggests that conference support may be a very effective and certainly desired mechanism for supporting forensic laboratories. In contrast, many fewer police departments responding to the survey indicated that they had received such support and, among those that had, their judgment was far less positive. Those finding the support at least somewhat helpful still outweighed those who found it unhelpful by three to one, however.



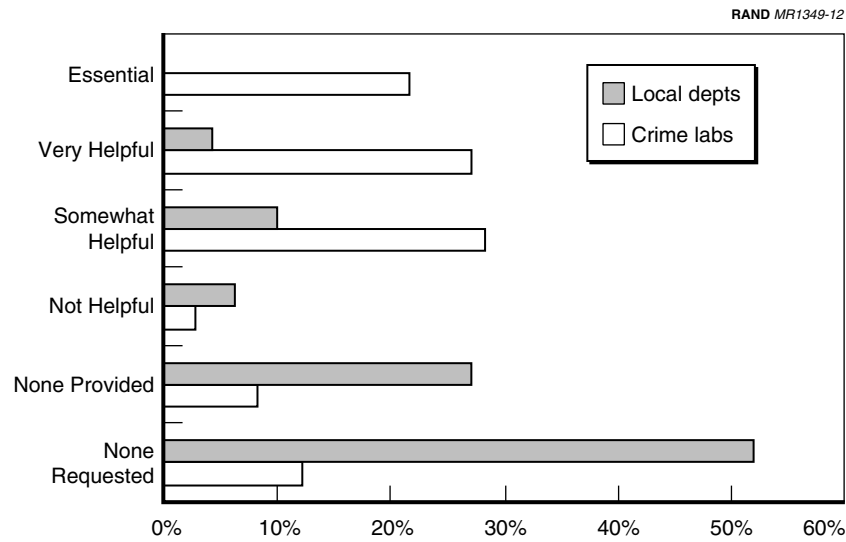
SOURCE: LETS, 13i; FTS, 18i. FTS numbers shown are percent of respondents; LETS values are statistically adjusted percentages.

Figure 11—Utilization and Helpfulness of Federal Technology-Related Conferences

TRAINING

From the discussions previously about the importance of training to adopting new technologies and the perceived shortages of training resources and technology, it is clear that technology training is an important area for federal attention. The RAND survey found that 35 percent of local police departments with more than 100 officers but only 20 percent of departments with fewer officers reported having received federal support in the form of technology-related training during the past year. The success rates of obtaining requested training were also higher for larger departments with 56 percent of departments with more than 100 officers reporting that they received requested training in comparison to only 42 percent of smaller departments.

Just as was the case for conference support, the responses of crime laboratories to the RAND survey were far more positive about federal technology training than those from police departments (Figure 12). A very large majority of crime laboratories reported receiving federal technology training and, of those, labs that found it at least somewhat useful outweighed those that did not by more than 25 to 1. Almost half the total respondents (49 percent) found the training very helpful or essential. Many fewer of the Law Enforcement survey respondents reported receiving training, and those who did were less positive. In the case of local police departments, those finding the training at least somewhat helpful outweighed those that did not by only 2.4 to 1. This suggests opportunities for improving both the accessibility and awareness of these training opportunities to local police departments and crafting their content to be more responsive to their needs.



SOURCE: LETS, 13h; FTS, 18h. FTS numbers shown are percent of respondents; LETS values are statistically adjusted percentages.

Figure 12—Utilization and Helpfulness of Federal Technology-Related Training