

2011 National Justice Information Sharing Survey:

Analysis of Results



National Association for Justice Information Systems

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Executive Summary

The National Justice Information Sharing (NJIS) Survey was developed and conducted by the National Association for Justice Information Systems (NAJIS), a practitioner-based association of information technology (IT) professionals in criminal justice and public safety. The survey was conceived and developed in 2010 with the help of the Integrated Justice Information Sharing (IJIS) Institute. The survey was distributed and responses were collected from February to July 2011. The responses were analyzed with the assistance of SEARCH, The National Consortium for Justice Information and Statistics.

The purpose of the survey was to comprehensively assess the level of information sharing occurring within the criminal justice and public safety communities. The survey was developed using an online survey tool, QuestionPro, and asked respondents to identify what data they share by either sending or receiving data (based on 38 predefined types of information), who they share it with (based on 11 predefined partners), and how is it shared—what technologies are used to share data. It also asked respondents to identify the types of information systems they had access to. It concluded with several questions about challenges faced when trying to share information, additional information sharing needs, and the use of national resources.

As a result, the survey was lengthy and required a significant investment of time from respondents to complete. This time commitment may, in part, have resulted in the relatively low number of responses and overall response rate. Of the 416 survey responses that were started, 148 were identified as valid—resulting in an overall completion rate of 35.6%. The section of the questionnaire addressing general automation received a total of 168 valid responses, and these were included in that section of the analysis.

The purpose of the survey was to assess information sharing capabilities, and, consequently, this report focuses on the 148 respondents who answered the information sharing questions. It also only analyzes aggregate data. In other words, it looks at all responses as a whole and does not attempt to distinguish patterns within each of the 11 predefined disciplines (law enforcement, courts, corrections, etc.). To better understand the level of information sharing within each discipline, these same analyses should be performed for each discipline.

Aggregate results provide the following picture of the respondents and information sharing practices:

Respondent profile – Most respondents represented states (52.7%), counties/parishes (24.3%), and municipalities (13.5%). They added up to 90.5% of all respondents and constitute the target audience for the survey. Most respondents represented law enforcement and public safety (50.0%), followed by corrections and community corrections (17.6%), prosecution (8.8%), and justice services (7.4%).

Information sharing – The overall level of information sharing between disciplines is lower than expected. In aggregate, 32.4% of respondents send or provide data to one or more partners, while 29.3% receive data from one or more partners. The disciplines that most frequently sent or provided information to other disciplines were Law Enforcement (63.1%), Courts (48.1%), Criminal History Repositories (44.5%), and Corrections (39.7%). Similarly, the disciplines that most frequently received data included Law Enforcement (64.4%), Courts (56.8%), Corrections (47.8%), and Criminal History Repositories (41.6%). The most frequently shared data (both

sending and receiving) pertained to individuals (identified as either Offender or Defendant data), including Person Name, Person Identifiers, and Person Descriptors or Demographics. This distribution of responses may reflect the preponderance of law enforcement and public safety respondents.

Of greater interest were the means respondents used to share information. For most respondents, information sharing—whether sending or receiving data—means some kind of query access. Direct queries or portal-based queries accounted for almost half of data sharing (Sending – 47.0%, Receiving 44.7%). Automated data exchange where data are sent to or received from another criminal justice partner system is not as common. Only about one-quarter of all respondents (Sending – 26.9%, Receiving – 26.6%), indicated that they share data using automated methods. These respondents also indicated that they shared data using older technologies like file transfer protocol (FTP) rather than newer technologies like web services. This suggests that many information exchanges may have been created before these newer technologies became available, that newer exchanges are relying on older, established mechanisms, or that fewer new exchanges are being developed.

Respondents were asked to identify what architecture and standards were used in information exchanges. The most disconcerting aspect of the responses to these questions was that the most common response was “Don’t know.” When asked about the architecture used to share information, 33.7% of respondents answered “Don’t know” when sending data, and 42.5% of respondents answered “Don’t know” when receiving data. When asked about the use of national standards, such as the National Information Exchange Model (NIEM) and the Global Reference Architecture (GRA), the results were similar. When asked if they use national standards to send data, 66.4% of respondents answered “Don’t know” or “Unknown.” When asked if they use national standards to receive data, 72.4% answered “Don’t know” or “Unknown.” This suggests that respondents were either not familiar with the underlying technologies used to share information or were not familiar with these standards. This general lack of awareness should be a cause for concern to those promoting the adoption and use of these standards.

When respondents were asked what exchanges were needed, the most requested exchange was for court case history information. When asked to rank “Success Factors,” respondents ranked adequate funding as the most important.

Respondents were asked to identify which national resources they had used. The top three were the Bureau of Justice Assistance, SEARCH, and the IJIS Institute. Finally, respondents were asked if they used a common charge table (or common charge identification mechanism) or a common data dictionary. Only a limited number of respondents answered these questions, but in both cases where a common charge table or a common data dictionary would be used, respondents indicated that they used them by a factor of 2 to 1:

- 23.8% of respondents indicated that they used a common charge table and only 11.3% said they did not.
- 20.2% of respondents indicated that they used a common data dictionary and 12.5% said they did not.

Again, the relatively low number of responses to these questions suggests that neither of these features may be applicable to their organization or that respondents are not aware of their use.

The analyses contained in this report are limited to an aggregate analysis of all survey respondents across all disciplines. It provides a picture of the state of information sharing within the criminal justice and public safety communities as a whole. Automated information sharing appears to be a relatively rare capability, while query access to data on remote systems is most common. National standards and initiatives do not appear to be broadly adopted, although as explained later in the analysis of the survey results, the relatively low level of usage may be the result of a lack of knowledge or awareness by survey respondents.

While the survey results are nonscientific, they provide picture or “snapshot” of data sharing capabilities by criminal justice community in early 2011. This creates a baseline against which future surveys can be compared to identify trends and patterns of usage. The goal of the many groups focused on improving information sharing is to assess the levels of adoption usage, and this survey can be used to accomplish this. Future surveys should be considered to measure progress in this area.

Introduction/Background

In February 2011, the National Association for Justice Information Systems (NAJIS),¹ with cooperation and support from the Integrated Justice Information Sharing (IJIS) Institute² and SEARCH, The National Consortium for Justice Information and Statistics,³ distributed the 2011 National Justice Information Sharing Survey. The survey was designed to thoroughly assess the state of information sharing practices across the criminal justice community at all levels of government. The survey asked respondents to identify **who** they shared information with, **what** information was shared, and **how** it was shared. It asked the same questions for information that was both sent to and received from other criminal justice and public safety information resources.

The mission of NAJIS is to support the adoption and use of technology to improve the justice system. NAJIS pursues this by offering an annual educational conference. In the fall of 2009, the NAJIS Board of Directors determined that conducting an educational conference in 2010 was unlikely to draw a sufficient number of attendees due to the worsening economic climate. In lieu of the conference, the Board decided to devote its resources to assessing the state of information sharing through the development, distribution, and analysis of a nationwide survey. NAJIS approached both the IJIS Institute and SEARCH to support this effort. Both organizations agreed to participate in and support the survey. IJIS took responsibility for developing the survey, and SEARCH agreed to support the distribution of the survey and to compile and analyze the results.

Beginning in spring 2010, IJIS designed and developed the survey instrument based upon input from NAJIS. The goal of the survey was to ask detailed questions about information practices while minimizing the time required to complete the survey. IJIS identified an on-line survey tool, QuestionPro,⁴ which provided the controls needed to implement the survey. Through the course of survey development, various communities of interest in the justice domain were consulted to refine the terminology used in the survey. The survey was completed in December 2010 and tested by the NAJIS Board members. Beginning in February 2011, the survey was distributed through a variety of channels in an effort to reach as many practitioners as possible. In addition to NAJIS's own distribution list, many other organizations were asked to distribute the survey announcement and link to their constituencies. Chief among these was the Global Advisory Committee (GAC), which consists of representatives from all major criminal justice and public safety organizations and disciplines.⁵ Additional outreach was made to

¹ NAJIS is a practitioner-based professional association dedicated to improving the use of information technology in the criminal justice and public safety environment. For more information about NAJIS, see www.najis.org

² For more information about the IJIS Institute, see www.ijis.org

³ For more information about SEARCH, see www.search.org

⁴ For more information on the Question Pro survey tool, see www.questionpro.com

⁵ For more information about Global, see <http://www.it.ojp.gov/global>

the Justice Information Sharing Practitioners⁶ (JISP) group, the National Criminal Justice Association (NCJA),⁷ and the Association of Prosecuting Attorneys (APA).⁸

The survey was first distributed through an email announcement in February 2011 and a subsequent email announcement was made one month later. For purposes of this analysis, the survey was closed in early July 2011. The final survey response included in the analysis was received July 3, 2011. Based on the survey tool's standard reporting capabilities, the survey was viewed 1,047 times during this period. Of these, 410 surveys were started, resulting in the creation of a response record in the survey tool. This number was used to establish the baseline of survey participation. Of these 410 surveys, 168 survey responses were sufficiently complete to be considered valid. This resulted in a basic response rate of 40.1%. Survey responses were considered valid if respondents identified themselves and completed at least Section 1 of the survey, **General Automation**. Of the 168 valid responses, 20 respondents met only these minimum criteria for being included in the survey analysis. The remaining 148 respondents completed all or parts of the remaining three sections of the survey, which focused on information sharing. Since the purpose of the survey was to assess the level of information sharing between agencies and organizations within the criminal justice community, the majority of the analyses contained in this report are based on these 148 responses. These 148 responses represent an overall response rate of 36.1%.

⁶ For more information about JISP, see www.jispnet.org

⁷ For more information about NCJA, see <http://www.ncja.org/>

⁸ For more information about APA, see <http://www.apainc.org/>

Methodology

Survey Development

The IJIS Institute was responsible for developing the survey instrument. The survey would be on-line only, and IJIS identified an on-line survey tool, QuestionPro, that provided the workflow and control logic needed to minimize the time required by respondents to complete a survey.⁹ In order to minimize the complexity of taking the survey, the tool needed to offer extensive capabilities to manage the flow of questions. In general, if a respondent did not respond affirmatively to a question, the tool needed to skip around any detailed questions based on that question. A diagram of the question flow and logic (figure 1, page 12) shows how respondents were stepped through a series of questions based on their earlier responses.

Survey Design and Structure

The survey was designed in five separate sections:

Respondent Identification

Section 1 – General Automation

Section 2 – Information/Data Sent or Provided to Partners

Section 3 – Information/Data Received from Partners

Section 4 – Miscellaneous Questions

Respondent Identification Section

The **Respondent Identification** section asked respondents to identify who they were, identify their organization and their role within it, and to provide contact information. They were asked to identify the jurisdiction of their organization based on the following nine predefined categories:

1. City/Municipality
2. County/Parish
3. Federal
4. Regional (Interstate)
5. Regional (Intrastate)
6. Special District
7. State
8. Tribal
9. Other (please specify)

Respondents were only allowed to select one jurisdiction. If they chose “Other,” they were asked to provide a description of their organization’s jurisdiction.

⁹ A NAJIS Board member also explored the use of SurveyMonkey, another on-line survey tool, and determined that this tool did not provide sufficient logic control to make the survey work as desired. In both instances, the professional versions of both QuestionPro and SurveyMonkey were evaluated.

Respondents were then asked to identify the criminal justice discipline in which they worked from a list of 12 predefined categories:

- | | |
|--|---|
| 1. Corrections | 7. Parole |
| 2. Courts | 8. Pretrial Services
(Bail Services) |
| 3. Criminal History Repository | 9. Probation |
| 4. Defense | 10. Prosecution |
| 5. Jail (Pretrial Detention and/or
Incarceration) | 11. Victim Services |
| 6. Law Enforcement | 12. Other |

Respondents were allowed to select one or more disciplines and many chose to do so. If they chose “Other,” they were asked to provide a description of their discipline within the criminal justice and public safety domains.

Section 1 – General Automation

Questions in Section 1, **General Automation**, focused on what information systems a respondent had access to. Respondents were asked to identify these systems from a list of 31 common criminal justice and public safety systems or applications:

- | | |
|--|---|
| 1. Arrest/Booking | 16. Parole Case Management |
| 2. Automated Fingerprint Identification
System (AFIS) | 17. Persons of Interest |
| 3. Computer-Aided Dispatch (CAD) | 18. Police Records Management (Incident
Reporting) (RMS) |
| 4. Corrections Offender Management | 19. Pretrial Services (Bail) |
| 5. Court Case Management | 20. Probation Case Management |
| 6. Criminal History | 21. Property |
| 7. Criminal Intelligence (Gangs) | 22. Prosecutor Case Management |
| 8. Driver’s License | 23. Protection/Restraining Orders |
| 9. Firearm Registration | 24. Public Defender |
| 10. Geographic Information
System/Mapping (GIS) | 25. Sex Offender Registry |
| 11. Homeland Security | 26. Social Services |
| 12. Jail Management System | 27. Suspicious Activity Reports |
| 13. Juvenile Justice | 28. Traffic |
| 14. Medical Records | 29. Victim Notification |
| 15. Motor Vehicle Registration | 30. Wants/Warrants |
| | 31. Other |

For each system selected by the respondent, a series of more detailed questions was asked about system usage. If a system or application was not used, these more detailed system usage questions were skipped. For each system selected, the respondent was asked to identify whether his or her agency “owned or controlled” the system. For each system that was “owned or controlled,” the respondent was then asked to identify if the system was a custom-developed application or a commercially available application or product (otherwise known as a Commercial Off-the-Shelf or COTS product). If it was a COTS product, the respondent was asked to provide the product name.

Sections 2 and 3 – Data Sent or Provided to Partners and Data Received from Partners

Sections 2 and 3 asked questions about information sharing, which was the focus of the survey. Section 2 asked about information that was *sent or provided to* partners. Section 3 asked the same questions about information *received from* partners. In each section, respondents were asked the same questions—only the perspective of sending or receiving information was different.

In both sections, respondents were first asked if they sent or provided data to each of the 11 predefined criminal justice disciplines listed previously. For each discipline that they answered affirmatively, they were asked a series of more detailed questions about their information sharing practices.

Respondents were asked to identify what information was shared with that partner based on 38 predefined categories of “Information Types” and how this information was shared:

- | | |
|---|--|
| 1. Arrest/Booking | 20. Mug Shots |
| 2. Bail/Bond | 21. Offender Identification (Name, Contact Information, DOB, etc.) |
| 3. Case Declination/Nolle Prosequi | 22. Offender Identifiers (SID, FBI #, SSN) |
| 4. Case Disposition | 23. Offender Demographics (Race, Sex, Height, Weight, etc.) |
| 5. Case Filing | 24. Offender Management (Admission/Term of Confinement/Release) |
| 6. Case History/Minute Orders/Summary of Proceedings | 25. Program Data (Treatment, Education) |
| 7. Charges | 26. Protection Orders |
| 8. Citations | 27. Sentences |
| 9. Court Calendar/Events | 28. Sex Offender Registry |
| 10. Defendant Identification (Name, Contact Information, DOB, etc.) | 29. State Criminal History |
| 11. Defendant Identifiers (SID, FBI #, SSN) | 30. Suspicious Activity Reports |
| 12. Defendant Demographics (Race, Sex, Height, Weight, etc.) | 31. Telephone Calls |
| 13. Discovery | 32. Terms and Conditions of Probation |
| 14. Driver’s License Information | 33. Vehicle Owner Information |
| 15. Financial Obligations | 34. Victim |
| 16. Firearm Registration | 35. Visitors |
| 17. Incidents | 36. Warrants |
| 18. Interviews | 37. Witness |
| 19. Medical | 38. Other |

For each type of information shared, respondents were asked two additional questions:

Question: For electronic exchanges, which methods do you use to electronically share information with [this agency]?

Response Options:

1. Automated – File or data transfer (computer-to-computer exchange)
2. Direct Query – User logs directly into another system to query data
3. Portal Query – User logs into a separate portal application that provides access to data from other systems
4. Offline Exchanges – CD-ROM/Magnetic Tape/Diskette

5. Send Email – with attachment
6. Don't know
7. Other (specify)

Question: For automated file/data transfer, what technology is used to send data to [this agency]?

Response Options:

1. File Transfer (FTP)
2. Direct Database Access (e.g., ODBC)
3. Messaging (MQSeries, MSMQ)
4. Remote Procedure Calls (RPC)
5. Web Services
6. Other
7. Don't know

Once the respondent answered the above questions for each type of information that was shared, they were asked to describe the technology architecture and information standards used to share data with that partner.

Question: What information sharing architecture or approach is used to send information to other agencies?

Response Options:

1. Service Oriented Architecture (SOA)
2. Enterprise Service Bus (ESB)
3. Middleware
4. Data Warehouse
5. Point-to-point Exchanges
6. Other (specify)
7. Don't know

Question: Does your organization use national standards in information sharing with other agencies?

Response Options:

1. National Information Exchange Model (NIEM)
2. Global Justice XML Data Model (GJXDM)
3. Emergency Management Data Exchange Language (EDXL)
4. Justice Reference Architecture (JRA)¹⁰
5. Global Federated Identity and Privilege Management (GFIPM)
6. Unknown
7. Don't know

¹⁰ The Justice Reference Architecture (JRA) has since been renamed the Global Reference Architecture (GRA). The GRA is a product of Global and has applicability beyond the justice community, hence the name change.

Section 4 – Miscellaneous Questions

The fourth and final section of the survey asked respondents a series of more general questions about their information sharing needs and other issues. Respondents were asked to identify information exchanges that they would like to see (both sending and receiving), and questions about barriers to information sharing, critical success factors, awareness and use of national resources, and use of common charge tables and data dictionaries.

Question: Please identify the types of information that you would like to receive or could provide to [other discipline].

Response Options: 38 Information Types.

Question: Please rank the following barriers to sharing information? (1 = high, 2 = medium, 3 = low, 4 = n/a)

Response Options:

1. Financial
2. Legal
3. Privacy
4. Lack of Planning
5. Lack of Cooperation or Interest
6. Internal Resources
7. Expertise

Question: How important are the following factors when developing information sharing solutions? Please rank these following factors in order of importance (1 = most important, 4 = least important).

Response Options:

1. Strategic Planning
2. Project Champion
3. Adequate Funding
4. Mandate

Question: Have you used any resources, created and/or supported by the following entities, in developing your information exchanges or information sharing environment?

Response Options:

1. Association of State Correctional Administrators (ASCA)
2. American Probation and Parole Association (APPA)
3. Bureau of Justice Assistance (BJA)
4. Bureau of Justice Statistics (BJS)
5. IJIS Institute
6. Institute for Intergovernmental Research (IIR)
7. Justice Information Sharing Practitioners (JISP)
8. National Center for State Courts (NCSC)
9. National Criminal Justice Association (NCJA)

10. National Governors Association (NGA)
11. National Institute of Justice (NIJ)
12. SEARCH, The National Consortium for Justice Information and Statistics
13. U.S. Department of Justice's Global Justice Information Sharing Initiative (Global)
14. Other

Question: Does your jurisdiction or organization use a common charge table?

Response Options:

1. Yes
2. No
3. Not Applicable
4. Don't know

Question: Does your jurisdiction or organization use a common data dictionary (NIEM, Other XML-based, COSCA,¹¹ etc.)?

Response Options:

1. Yes
2. No
3. Not Applicable
4. Don't know

An illustration of the question flow is shown as figure 1 on page 12.

Time to Complete the Survey

The time needed to complete the survey depended on how much information was shared with other disciplines. The more information sharing their organizations undertook, the more questions the respondents were required to answer. Based on the number of "drill-down" questions required to complete the questionnaire, it is not difficult to imagine that the survey took a significant amount of time to complete or that some respondents abandoned completing the questionnaire after they started.

The survey tool captured the elapsed time spent by each respondent to complete the survey and summarized this data for all respondents. The average length of time to complete the survey was reported as 1917.50 seconds, or approximately 32 minutes. The accuracy of this number is suspect based on the discussion about qualifying responses in the next section. However, it aligns with the 30–40 minutes estimated by the survey testers as needed to complete the survey. The preface to the survey informed respondents that the survey would take about 30 minutes to complete, and respondents made a significant investment of time to complete it. The survey administrators acknowledge and appreciate this investment of time and commitment on their part.

¹¹ Conference of State Court Administrators

National Justice Information Sharing Survey Question Flow

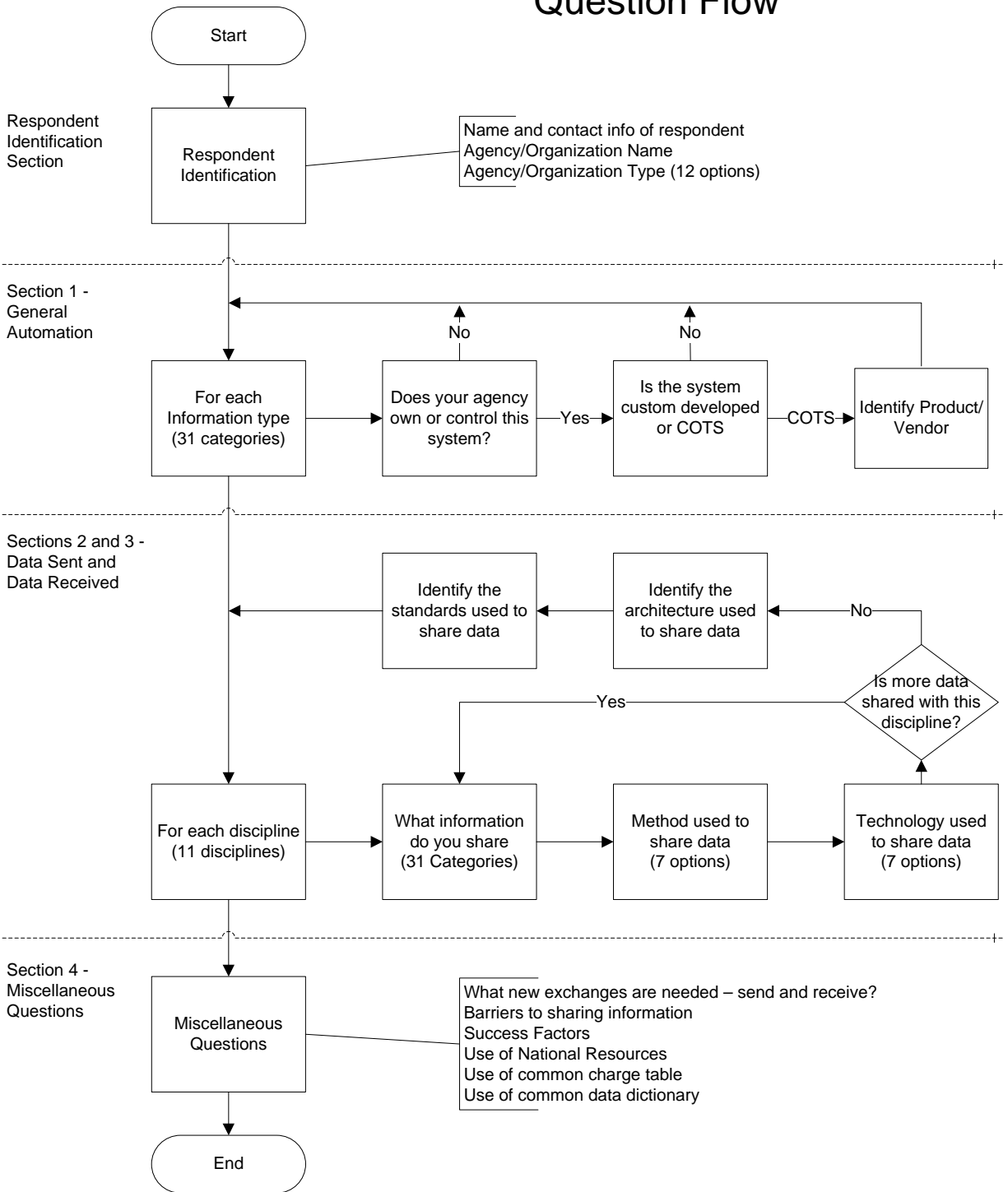


Figure 1 – NJIS Survey Question Flow

Response Qualification and Validation

Identifying and validating qualified responses was not without its challenges. The initial identification of valid responses was based on the results provided by the survey tool itself. Each survey response shows the elapsed time to completion, and this was used as the initial criterion for including responses in the survey analysis. According to the tool, 98 surveys were completed, where completed surveys were defined as having an elapsed time of more than zero (0) seconds. Based on this criterion, all responses with an elapsed time of 0 seconds were initially excluded from further consideration. A preliminary analysis of responses was prepared based on this selection criterion and the results were presented at the NAJIS conference in New Orleans on September 22, 2011. Subsequent analysis of the survey results proved this qualification criterion to be in error and all responses were reconsidered.

Based on a complete review of all responses, the final list of qualified responses was based on the following criteria:

1. Respondents completed at least the **Respondent Identification** section and Section 1, **General Automation**, of the survey.
2. Duplicate submissions were eliminated.

The combination of these two criteria resulted in the identification of 168 valid survey responses. These responses are included in the analysis of General Automation only.

Since the goal of the survey was to assess the level and methods of information sharing within the criminal justice and public safety communities, a third criteria was added to identify those responses that addressed this goal.

3. Respondents completed at least part of Sections 2 and 3, which focused on information sharing with other agencies and organizations.

Based on all three criteria, 148 responses were identified as valid and included in the remaining analyses of information sharing practices.

Identifying and eliminating duplicate submissions proved to be a significant challenge when determining qualified responses. Duplications occurred in two different ways. In some instances, the same respondent submitted two or more submissions for the same agency or organization.¹² In other cases, multiple individuals submitted duplicate and potentially conflicting information from a single organization. The most extreme example of this was one agency that submitted five responses to the survey. In either case, respondents were contacted by telephone or email to clarify which submission was to be included in the survey analysis. All of these conflicts were resolved.

¹² The survey tool allowed respondents to pause, save, and later return to their response. However, based on the presence of multiple survey responses completed by the same individual, this “save and return” feature was either not used or did not work as expected, thereby resulting in multiple unique submissions.

Analysis of Survey Results

The analysis of the survey results section is divided into five sub-sections that mirror the survey itself.

Respondent Identification

Section 1 – General Automation

Section 2 – Information Sent to or Provided to Partners

Section 3 – Information Received from Partners

Section 4 – Miscellaneous Questions

Since the focus of the survey was on information sharing, the bulk of the analyses contained in this report focuses on the responses from the 148 respondents who answered the questions related to information sharing in sections 2 and 3 of the survey. The 20 respondents who addressed only the **General Automation** section of the survey are included only in the analyses discussed in Section 1, General Automation. Analyses of responses in all other sections are based only on the 148 valid and qualified responses.

Profile of Respondents

Table 1 illustrates the distribution of respondents across jurisdictions. Surveys were completed by agencies from 41 states, tribes, and the federal government. The vast majority of respondents represented state and local governments (134). Another 14 responses received were from:

- Regional organizations or special districts (6)
- Federal agencies (5)
- Tribes (2)
- Vendors (1)

With one exception, respondents who identified their jurisdictions as “Other” were aggregated into another preidentified category. A nonprofit association providing information technology services to a state sheriffs association was redefined as a state jurisdiction. A homeland security respondent was redefined as a federal jurisdiction. The “Vendor” category was added because the data provided was valid but an appropriate predefined category could not be determined. Consequently, table 1 shows the category of “Vendor” rather than “Other.”

Jurisdiction	Count
State	78
County/Parish	36
City/Municipality	20
Regional (Intrastate)	4
Regional (Interstate)	1
Special District	1
Federal	5
Tribal	2
Vendor	1
Total	148

Table 1 – Jurisdiction of Respondents

Table 2 illustrates the distribution of respondents across disciplines. Respondents were allowed to select more than one discipline and identify their discipline in an “Other” category if needed. This resulted in the identification of a wide combination of disciplines. Discipline category combinations and the number of respondents in each are listed in table 2.

Reported Discipline	Number of Respondents	Percent of Total Respondents
Community Corrections	3	2.03%
Corrections	7	4.73%
Courts	9	6.08%
Criminal History Repository	14	9.46%
Criminal History Repository and Law Enforcement	5	3.38%
Criminal History Repository and Public Safety	1	0.68%
Defense	1	0.68%
E911	2	1.35%
Homeland Security	2	1.35%
Jail (Pretrial Detention and/or Incarceration)	2	1.35%
Justice Information Sharing	7	4.73%
Justice Services	11	7.43%
Law Enforcement	42	28.38%
Other (Mental Health, Substance Abuse, Unspecified)	3	2.03%
Parole	2	1.35%
Pretrial Services (Bail Services)	2	1.35%
Probation	10	6.76%
Prosecution	13	8.78%
Public Safety ¹³	10	6.76%
Victim Services	2	1.35%
Total	148	100.00%

Table 2 – Discipline of Respondents (Raw Data)

¹³ Several respondents used the discipline of Public Safety, and it was not possible to further distinguish what categories or other disciplines these respondents aligned with. “Public safety” is a broad term that can include law enforcement and corrections functions, as well as other disciplines, such as emergency management.

For purposes of this analysis, respondents were aggregated into one of the 12 predefined discipline categories, as shown in table 3.

Discipline	Number of Respondents	Percent of Total Respondents
Corrections	7	4.73%
Courts	9	6.08%
Criminal History Repository	20	13.51%
Defense	1	0.68%
Jail (Pretrial Detention)	2	1.35%
Law Enforcement (+ Homeland Security, Public Safety)	54	36.49%
Other (E911, Information Sharing, Justice Services, Social Services)	23	15.54%
Parole	2	1.35%
Pretrial Services (Bail Services)	2	1.35%
Probation (+ Community Corrections)	13	8.78%
Prosecution	13	8.78%
Victim Services	2	1.35%
Total	148	100.00%

Table 3 – Discipline of Respondents Aggregated into Predefined Discipline Categories

Respondents represented all facets of the criminal justice and public safety communities. The largest number of respondents represented Law Enforcement, Criminal History Repositories, Homeland Security, and Public Safety (74). This was followed by Corrections, Community Corrections, Jail (Pretrial Detention), Parole, and Probation (26), then by Prosecution (13) and Justice Services¹⁴ (11).

Section 1 – General Automation

The first substantive area addressed in the survey focused on what information systems were *used* by the respondents. Respondents were asked to identify the information systems that they had access to and used in their organization, and whether the information system was “owned or controlled” by the respondent or “owned or controlled” by another organization, but used by the respondent. A total of 168 respondents responded to this section. As noted earlier, respondents were qualified for inclusion within this group based on their responses to this section of the survey, and this is the only section of the analysis based on these 168 responses.

Respondents Who Use or Access Data Systems

Respondents were first asked to identify all of the systems that they had access to or used. The survey contained 31 different types of information systems that could be selected as response options by the respondents (including “Other”).¹⁵

¹⁴ “Justice Services” represents groups such as crime commissions and state administrative agencies (SAAs).

¹⁵ See a list of predefined disciplines on page 7 of this report.

No one data system was used by all survey respondents. The highest number of responses for data systems in any of these categories was 144 for Criminal History use. Table 4 ranks the Type of Information System Used from most frequently used to least frequently used [Total/168].

Type of Information System Used	Use and Own or Control	Use but do not Own or Control	Total	Percent Use
Criminal History	55	89	144	85.7%
Wants/Warrants	47	81	128	76.2%
Driver's License	10	103	113	67.3%
Arrest/Booking	51	61	112	66.7%
Sex Offender Registry	36	75	111	66.1%
Police Records Management (Incident Reporting) (RMS)	61	38	99	58.9%
Automated Fingerprint Identification System (AFIS)	50	49	99	58.9%
Court Case Management	22	74	96	57.1%
Motor Vehicle Registration	5	88	93	55.4%
Criminal Intelligence (Gangs)	42	50	92	54.8%
Jail Management System	28	57	85	50.6%
Geographic Information System/Mapping (GIS)	49	34	83	49.4%
Victim Notification	38	39	77	45.8%
Juvenile Justice	19	56	75	44.6%
Protection/Restraining Orders	27	46	73	43.5%
Traffic	35	33	68	40.5%
Probation Case Management	25	42	67	39.9%
Firearm Registration	17	49	66	39.3%
Computer-Aided Dispatch (CAD)	53	13	66	39.3%
Property	51	12	63	37.5%
Corrections Offender Management	22	40	62	36.9%
Suspicious Activity Reports	39	21	60	35.7%
Parole Case Management	17	38	55	32.7%
Persons of Interest	30	22	52	31.0%
Homeland Security	13	39	52	31.0%
Prosecutor Case Management	17	32	49	29.2%
Pretrial Services (Bail)	16	31	47	28.0%
Medical Records	17	20	37	22.0%
Social Services	6	30	36	21.4%
Other	21	14	35	20.8%
Public Defender	4	15	19	11.3%

Table 4 – Information Systems Used, Ranked by Frequency

Since the largest group of respondents represented the Law Enforcement discipline, it is not surprising that the most frequently used systems are those that focus on law enforcement and public safety activities. These systems are typically used for query or information-gathering purposes, are found at the state, regional, or national level, and may aggregate information from multiple systems. The need to access these types of systems is reflected in the survey results: For the top five most frequently used systems, about two-thirds (67.3%) of these systems are not “owned or controlled” by the agencies using

them. While there are some exceptions, the overall distribution is the same—nearly 6 out of 10 respondents (60.1%) said they used systems that they did not “own or control.”

Systems that are Owned or Controlled

If respondents indicated that their organization owned or controlled the information system(s) they used, they were then asked if the system was a commercially available application (“Commercial Off-the-shelf” or COTS) or a custom-developed application. Table 5 shows these responses sorted from the highest percentage of COTS applications to the lowest percentage.

Type of Information System	COTS	Custom	Total	Percent COTS
Driver's License	5	1	6	83.3%
Geographic Information System/Mapping (GIS)	39	8	47	83.0%
Automated Fingerprint Identification System (AFIS)	37	9	46	80.4%
Computer-Aided Dispatch (CAD)	40	10	50	80.0%
Traffic	28	7	35	80.0%
Public Defender	3	1	4	75.0%
Police Records Management (Incident Reporting) (RMS)	42	15	57	73.7%
Motor Vehicle Registration	2	1	3	66.7%
Medical Records	11	6	17	64.7%
Property	31	17	48	64.6%
Homeland Security	7	4	11	63.6%
Jail Management System	14	10	24	58.3%
Suspicious Activity Reports	22	16	38	57.9%
Arrest/Booking	27	21	48	56.3%
Victim Notification	18	15	33	54.5%
Social Services	3	3	6	50.0%
Persons of Interest	13	14	27	48.1%
Prosecutor Case Management	8	9	17	47.1%
Court Case Management	7	10	17	41.2%
Criminal Intelligence (Gangs)	16	24	40	40.0%
Wants/Warrants	18	29	47	38.3%
Sex Offender Registry	11	22	33	33.3%
Other	7	14	21	33.3%
Criminal History	16	33	49	32.7%
Protection/Restraining Orders	8	17	25	32.0%
Corrections Offender Management	6	14	20	30.0%
Juvenile Justice	5	12	17	29.4%
Pretrial Services (Bail)	4	10	14	28.6%
Firearm Registration	3	11	14	21.4%
Parole Case Management	2	13	15	13.3%
Probation Case Management	3	20	23	13.0%
Total	456	396	852	53.5%

Table 5 – Use of COTS or Custom-developed Applications

COTS products appear to be predominantly used for those applications that represent large and mature markets and perform standardized functions, while custom-developed solutions are used where the number of potential users is smaller or the requirements are more specialized. For example, in the top 15 application areas, 10 are typically identified as being used by law enforcement (Driver's License, GIS, AFIS, CAD, Traffic, RMS, Motor Vehicle Registration, Property, Jail Management Systems, and Arrest/Booking).¹⁶ Law enforcement clearly fits the category of being a mature market that represents a large potential installation base.

At the other end of the scale, most of the custom-developed applications represent applications with limited usage or that fulfilled more specialized purposes. This group includes applications such as Criminal Intelligence, Wants/Warrants, Sex Offender Registry, Pretrial Services/Bail, Protection/Restraining Order, and Firearm Registries. Applications in this group have a COTS presence, such as Court, Prosecution, Probation, and Parole Case Management, but the larger percentage of custom-developed solutions likely reflects the need for more specialized capabilities in these applications.

Based on all reported responses, COTS products are used more often than custom-developed applications—53.5% to 46.5%. This overall distribution appears to align with the fact that the largest number of respondents were from law enforcement and related disciplines where there are many COTS products available to this market.

Section 2 – Send or Provide Information to Other Disciplines

Section 2 of the survey explored the degree to which respondents provided or sent data to partners. Respondents were asked to identify which of the following disciplines they provided data to (table 6). The survey allowed respondents to indicate that they shared data within their own discipline as well. Consequently, the term “partner” is used to indicate sharing within and between disciplines.

Discipline	Yes	No	Total	Percent Yes
Law Enforcement	70	41	111	63.1%
Courts	65	70	135	48.1%
Criminal History Repository	57	71	128	44.5%
Corrections	58	88	146	39.7%
Other	33	61	94	35.1%
Prosecution	32	62	94	34.0%
Jail (Pretrial Detention)	34	85	119	28.6%
Probation	25	74	99	25.3%
Parole	21	84	105	20.0%
Defense	18	100	118	15.3%
Victim Services	14	81	95	14.7%
Pretrial Services (Bail Services)	9	94	103	8.7%

Table 6 – Data Provided by Discipline

¹⁶ Geographic information systems (GIS), automated fingerprint identification system (AFIS), computer aided dispatch (CAD), and record management system (RMS).

Table 6 is sorted by the most frequent to least frequent level of sharing.¹⁷ Law Enforcement was the discipline that most frequently provided data to partners, followed by the Courts, Criminal History Repositories, and Corrections.

For those respondents who indicated that they provided data to other disciplines, additional survey questions were asked regarding the type of information that was shared, the manner in which the information was shared, and the technologies used to support this sharing. *The following discussion reflects the aggregated responses from all respondents and all of the disciplines that they shared data with.*

What Data Were Provided to Other Disciplines?

For each discipline selected, respondents were asked to identify what data they provide or send to a partner. For purposes of this analysis, all responses are analyzed in aggregate reflecting the overall level of sharing (sending or providing) between the disciplines. Since each respondent could identify from 1 to 11 disciplines that they shared data with, and for each discipline they could identify from 1 to 38 different kinds of data, the compilation and analysis of the responses is based on either relative percentage or total frequency.

For all respondents and all disciplines, the data sent or provided is presented in table 7 and is listed from most to least frequent. These numbers are greater than the 148 total responses because the tally is a count for each respondent and information type combination.

¹⁷ The term “sharing” is used in the context of the section. In this section, sharing means sending or providing data to partners.

Information Sent or Provided to All Disciplines	Total
Offender Identifiers (SID, FBI #, SSN, etc.)	318
Offender Identification (Name, Contact Information, DOB, etc.)	317
Arrest/Booking	308
Offender Demographics (Race, Sex, Height, Weight, etc.)	305
Charges	288
Defendant Identification (Name, Contact Information, DOB, etc.)	265
Defendant Identifiers (SID, FBI #, SSN, etc.)	261
Warrants	257
Defendant Demographics (Race, Sex, Height, Weight, etc.)	256
State Criminal History	241
Case Disposition	221
Mug Shots	214
Driver's License Information	209
Protection Orders	208
Sex Offender Registry	207
Offender Management (Admission/Term of Confinement/Release)	202
Sentences	198
Citations	179
Vehicle Owner Information	170
Case Declination/Nolle Prosequi	163
Incidents	154
Victim	152
Case History/Minutes Orders/Summary of Proceedings	147
Bail/Bond	142
Court Calendar/Event	140
Case Filing	138
Program Data (Treatment, Education, etc.)	123
Terms and Conditions of Probation	122
Witness	112
Firearm Registration	110
Suspicious Activity Reports	103
Visitors	100
Financial Obligations	98
Discovery	93
Interviews	89
Medical	82
Telephone Calls	80
Other	79

Table 7 – Information Sent/Provided – Most to Least Frequent

The most frequently sent or provided data related to person information typically used by law enforcement. Again, we see this pattern throughout this analysis, because law enforcement comprised the largest discipline that responded to the survey. Consequently, it is not surprising that this

information is most frequently sent or provided to other disciplines or other organizations within each discipline.¹⁸ The person data most frequently shared includes identifiers, identification, and demographic data for both offenders and defendants. Underscoring the importance of this data, since offenders and defendants are often the same individual seen from the perspective of different disciplines, these data elements combined would clearly make more generic person identification information the most frequently shared data.

How do Partners Access the Data that are Sent/Provided?

The definition of information sharing is often in the eye of the beholder. In the context of national information sharing initiatives like Global (NIEM, GRA, etc.), information sharing is defined as sending data from one system to another, a “push” exchange. In the eyes of practitioners, information sharing ranges from this more constrained definition of information sharing to more basic forms of information sharing, like making a telephone call or sending a letter or fax.

For each type of information shared, respondents were asked to identify how these data were sent or provided to the partner based on the following response options:

Automated – Defined as computer-to-computer or background exchanges

Direct Query – Defined as logging on to remote system with a separate user ID and password

Email – Data are sent as an email or in an email attachment

Off-line – Data shared by using magnetic tapes or diskette or other storage devices

Portal Query – Logging onto a remote system with a separate user ID and password and gaining access to multiple data sources or repositories

Other – Respondents were asked to specify the method

Don’t know

The most common method of providing or sending data to a partner was to provide direct query access to the organization’s data system. Table 8 illustrates how all of these methods are used.

Method that Data are Provided to Partner	Percent
Direct Query	31.7%
Automated	26.9%
Portal Query	15.3%
Don't know	10.6%
Other	6.8%
Email	4.9%
Off-line	3.8%

Table 8 – Method of Providing or Sending Data to Partners

Recognizing some ambiguity exists between the Direct Query and Portal Query methods of sharing data, it safe to assume that most data are shared by providing some form of “in-bound” access to data systems rather than by actually sending it to a partner organization. Almost half (47.0%) of respondents indicated that they provided data to partners using an “in-bound,” or query-based, method. Automated

¹⁸ There was no constraint with the survey that precluded respondents from selecting their own discipline as a recipient of shared information. As discussed in the summary of this report, the next level of analysis would be to analyze the level of information sharing within each discipline.

methods—those more typically thought of when talking about sending or providing data—are used about one-quarter of the time (26.9%). One could argue that the Portal Query may require the sender to provide data to a common data store or data warehouse to be used by the Portal, but these often use “pull” technologies rather than the “push” approach envisioned in the Automated method described in the survey. Email and other methods comprise about 11% of sharing, and, thankfully, off-line methods are used the least (3.8%).

Technology Used to Provide or Send Data to Partners

If respondents selected “Automated” as the response option in the prior question, they were asked to identify the technologies used to send or provide access to data to their partners. Like the other questions, this question was asked for each of the disciplines selected by the respondent and for each of the 38 predefined types of information sent or provided to the selected partners. Table 9 illustrates the use of various technologies used to send or provide data based on seven response options presented in the survey.

Technology Used to Send Data	Percent
Direct Database Access	28.1%
File Transfer (FTP)	24.1%
Web Services	20.2%
Messaging	16.9%
Other	6.8%
Don't know	2.8%
Remote Procedure Call	1.0%

Table 9 – Technologies Used to Send/Provide Data to Partners

The most common method to send or provide data to partners in an automated manner was to provide direct database access to the provider’s data (28.1%). This is another form of “pull” data exchange. The remaining three technologies—File Transfer, Web Services, and Messaging—are all variants of “push” technology. File Transfer is the most common of these, which is not surprising since this technology has been in use for more than 20 years (the same can be said about many Direct Database Access technologies, such as Open Database Connectivity [ODBC]). Messaging and Web Services are newer technologies, with Web Services being the method that has been adopted and promoted by Global. The relatively high use of Web Services suggests that this technology is gaining in adoption and use. Should future surveys be conducted, one would expect the use of Web Services to continue to grow as Global and other national information sharing standards are increasingly adopted.

What Architecture do You Use to Send or Provide Information to Partners?

Respondents were asked to identify what technology architecture or underlying technology was used to share information with partners. Respondents were asked this question for each discipline that they had previously identified as sending or providing information to. Respondents were given a limited set of seven predefined response options to select from, as illustrated in table 10.

Architecture Used to Send/Provide Data	Percent
Don't know	33.7%
Point-to-point Exchanges	19.5%
Other	14.8%
Service Oriented Architecture (SOA)	12.8%
Middleware	9.7%
Enterprise Service Bus (ESB)	6.5%
Data Warehouse	3.0%

Table 10 – Technology Architecture Used to Send/Provide Information

This question and the predefined response options assumed a certain level of technology knowledge and awareness. The response options were not extensively defined, and it is possible that respondents were not familiar with these terms. This unfamiliarity is reflected in the large percentage of respondents who either responded “Other” (14.8%) or “Don’t know” (33.7%)—a total of nearly half of the respondents. Other responses indicated that:

- The most-used technology was “Point-to-point Exchanges” (19.5%), which is not unexpected since this is the approach that has historically been used to implement information exchanges.
- “Service Oriented Architecture” (SOA) was the next most frequently used technology (12.8%). This approach has become the technology of choice for information sharing and is the technology promoted by Global. SOA is the newest technology available for information sharing, and it is heartening to see that it is being adopted in the field.
- The “Enterprise Service Bus” (ESB) is typically a form of SOA, and can reasonably be combined with the SOA responses, suggesting that almost one-fifth of the respondents ($ESB\ 6.5\% + SOA\ 12.8\% = 19.3\%$) are employing some form of SOA.
- “Middleware” and “Data Warehouses” are lesser-used approaches to sending or providing data to partners. Middleware was a precursor to SOA and has since been overtaken by SOA. Its relatively low usage (9.7%) likely reflects that SOA is growing in acceptance, adoption, and use. Data warehouses represent the least-used technology approach. This is not surprising, since the data warehouse approach is the recommended approach for analytics and is not optimized for event-driven information sharing like all of the other technologies listed as response options.

What National Standards do You Use to Send or Provide Information to Partners?

The last question asked about the information *sent or provided* to partners addressed the use of national standards and best practices. For simplicity’s sake, this question referred to the collection of response options as standards, although they more realistically represent standards, emerging standards, guidelines, and best practices. Respondents were assumed to understand this distinction and would be familiar with the terms. Responses to this question are presented in table 11.

Standards Used to Send/Provide Data	Percent Used
Don't know	36.0%
Unknown	30.4%
Global Justice XML Data Model (GJXDM)	15.6%
National Information Exchange Model (NIEM)	14.2%
Justice Reference Architecture (JRA) ¹⁹	3.2%
Global Federated Identity and Privilege Management (GFIPM)	0.4%
Emergency Data Exchange Language (EDXL)	0.2%

Table 11 – Standards Used to Send/Provide Data

Like the responses to the prior question, most respondents did not appear to be familiar with these terms and did not know if these standards or best practices were used to share information. Two-thirds of respondents (66.4%) responded either “Unknown” (30.4%) or “Don’t know” (36.0%). The two most-used standards are NIEM and GJXDM, at 14.2% and 15.6%, respectively. NIEM and GJXDM are data models that have had significant exposure to the justice and public safety communities, so it is no surprise that they are both fairly well known. GJXDM is the older standard, which has been superseded by NIEM, which may explain the slightly broader adoption and use of GJXDM.

The other three “standards”—EDXL, JRA, and GFIPM—appear to have had less success in terms of adoption and use. None of these has yet made a significant penetration into information sharing. For EDXL, another data model, the lack of adoption and use can be explained by the fact that the primary industry targeted by this initiative is the emergency management community, not justice and public safety.

Both the JRA and GFIPM are more abstract and complex concepts, which may explain why they have not achieved a significant level of adoption and use. The JRA (now GRA) provides information sharing initiatives with a well-defined approach or framework to design and develop these solutions and includes more concrete standards such as NIEM. GFIPM outlines a method for implementing a “single sign-on” capability. These two are also the newest of these “standards,” which may also contribute to the low level of adoption and use. Of the two, the GRA has been more widely adopted, albeit at still a very limited rate (3.2%). Results from future assessments such as this survey should expect to find an increase in the adoption and use of the GRA.

The overall lack of awareness, adoption, and use of these standards is disappointing. Given the strong and sustained promotion of at least some these standards—the use of NIEM, the GRA, and in the past the GJXDM, have been required for federal grant programs from the Office of Justice Programs—one might wonder why respondents were not more familiar with them. This may in part be explained by the person responding to the survey. The survey asked respondents to have both business and technical knowledge in order to answer the different questions asked. It is likely that respondents had more business and less technical knowledge.²⁰

¹⁹ The Justice Reference Architecture (JRA) has since been renamed the Global Reference Architecture (GRA). The GRA is a product of Global and has applicability beyond the justice community, hence the name change.

²⁰ Future surveys should ask respondents to identify their role within the organization to better understand the perspective of the respondents when analyzing the survey results.

Section 3 – Receive Information from Other Domains

Section 3 of the survey explored the degree to which respondents received data from partners. Respondents were asked to identify the disciplines they received data from. The survey allowed respondent to indicate that they received data from within their discipline. Consequently, the term “partner” is used to indicate sharing within and between disciplines.

Discipline	Yes	No	Total	Percent Yes
Law Enforcement	56	31	87	64.4%
Courts	50	38	88	56.8%
Corrections	43	47	90	47.8%
Criminal History Repository	37	52	89	41.6%
Jail (Pretrial Detention)	28	58	86	32.6%
Other	24	58	82	29.3%
Probation	23	61	84	27.4%
Prosecution	18	68	86	20.9%
Parole	16	71	87	18.4%
Defense	4	82	86	4.7%
Victim Services	4	82	86	4.7%
Pretrial Services (Bail Services)	1	85	86	1.2%

Table 12 – Data Received by Discipline

Table 12 is sorted by the most to least frequent level of sharing.²¹ Law Enforcement was the discipline that was most frequently received data, followed by the Courts, Corrections, and Criminal History Repositories.

As in survey Section 2, those respondents who indicated that they received data from other disciplines were asked a series of additional questions: What type of information that was received, the manner in which the information was received, and the technologies used to support this sharing. The following discussion reflects the aggregated responses from all respondents and all of the disciplines that they received data from.

What Data Were Received from Other Disciplines?

Section 3 of the survey followed the same pattern of questions as in Section 2. For each discipline selected, respondents were asked to identify what data they received from a partner. Since each respondent could identify from 1 to 11 disciplines that they received data from, and for each discipline they could identify from 1 to 38 different kinds of data received, the compilation and analysis of the responses is based on either relative percentage or total frequency.

For all respondents and all disciplines, the data received are presented in table 13 and are listed from most frequent to least frequent. These numbers are greater than the 148 total responses because the tally is counted for each discipline that a respondent may receive these data from.

²¹ The term “sharing” is used in the context of the section. In this section, sharing means receiving data from partners.

Information Received from All Disciplines	Total
Offender Identifiers (SID, FBI #, SSN, etc.)	192
Offender Demographics (Race, Sex, Height, Weight, etc.)	178
Offender Identification (Name, Contact Information, DOB, etc.)	176
Charges	164
Defendant Identification (Name, Contact Information, DOB, etc.)	164
Arrest/Booking	161
Defendant Identifiers (SID, FBI #, SSN, etc.)	158
Defendant Demographics (Race, Sex, Height, Weight, etc.)	152
Case Disposition	120
Offender Management (Admission/Term of Confinement/Release)	117
Warrants	109
Sentences	105
Incidents	89
Mug Shots	87
Citations	84
Case Filing	83
State Criminal History	79
Driver's License Information	76
Sex Offender Registry	76
Protection Orders	74
Victim	73
Case History/Minutes Orders/Summary of Proceedings	63
Court Calendar/Event	61
Case Declination/Nolle Prosequi	58
Terms and Conditions of Probation	58
Bail/Bond	57
Suspicious Activity Reports	54
Program Data (Treatment, Education, etc.)	49
Witness	46
Interviews	45
Vehicle Owner Information	44
Financial Obligations	43
Telephone Calls	43
Firearm Registration	33
Visitors	28
Other	27
Discovery	26
Medical	24

Table 13 – Information Received – Most to Least Frequent

Like the responses received regarding information sent or provided, the most frequently received data related to person information typically used by law enforcement. Again, we see this pattern throughout this analysis, because law enforcement comprised the largest discipline that responded to the survey.

Consequently, it is not surprising that this information is most frequently received from other disciplines or other organizations within each discipline.²² The person data most frequently received include identifiers, identification, and demographic data for both offenders and defendants. Underscoring the importance of these data (since offenders and defendants are often the same individual seen from the perspective of different disciplines), these data elements combined would clearly make more generic person identification information the most frequently received data.

How are Data Received from Partners?

Like the discussion regarding survey Section 2 about information sent or provided to partners, information sharing is often defined as sending data from one system to another, a “push” exchange. In the eyes of practitioners, information sharing includes gaining access to information through any number of means. More sophisticated mechanisms include query access to multiple systems through portals, or receiving and integrating data into a local application from one or more data sources (workflow). From the perspective of practitioners, receiving information from partners can also mean more basic forms like receiving a telephone call, letter, or fax.

For each information type received by the respondent, respondents were asked to identify how these data were received from the partner using the following response options.

Automated – File or data transfer (computer-to-computer exchange)

Direct Query – User logs directly into another system to query data

Portal Query – User logs into a separate portal application that provides access to data from other systems

Offline Exchanges – CD-ROM/Magnetic Tape/Diskette

Send Email – Includes attachment

Don’t know

Other (specify)

The most common method to *provide or send* data to a partner was to provide direct query access to the organization’s data system, as previously shown in table 8. Table 14 illustrates how methods are used to *receive* data.

Method of Receiving Data	Percent
Automated	26.6%
Direct Query	24.3%
Portal Query	20.4%
Other	8.4%
Email	7.2%
Don't know	6.6%
Off-line	6.5%

Table 14 – Method of Receiving Data from Partners

²² There was no constraint with the survey that precluded respondents from selecting their own discipline as a recipient of shared information. As discussed in the summary of this report, the next level of analysis would be to analyze the level of information sharing within each discipline.

The largest response option was to receive data in an automated manner. This suggests that while the overall level of receiving data is lower than the level of sending or providing data, the manner in which it is received indicates that information sharing is more oriented to workflow integration. In other words, receiving data through an “automated” means suggests that the shared data are integrated into the receiving system rather than merely being made available to the receiver. However, the overall distribution of the methods for receiving data, as listed in table 14, are largely similar to that presented regarding sending/providing data, as described in table 8. When combining Direct Query and Portal Query, nearly half of respondents (44.7%) indicated that they received data by querying it from other systems.

Technology Used to Receive Data from Partners

Question: For Automated file/data transfer, what technology is used to receive data from other agencies?

If respondents selected “Automated” as the response option in the prior question, they were asked to identify the technologies used to receive/access data from their partners. Like the other questions, this question was asked for each of the disciplines selected by the respondent and each of the 38 predefined types of information received from the selected partners. Table 15 illustrates the distribution of various technologies used to receive data based on seven response options presented in the survey.

Technology Used to Receive Data	Percent
Direct Database Access	25.1%
Web Services	24.6%
File Transfer	21.9%
Messaging	17.1%
Other	6.2%
Remote Procedure Call	3.0%
Don't know	2.1%

Table 15 – Technologies Used to Receive Data from Partners

The distribution of the technologies used to receive data in an automated manner was very similar to the distribution of technologies used to send/provide data, as illustrated in table 9. The most used technologies for each was “Database Access,” and the least used was “Messaging.” Meanwhile, “Web Services” and “File Transfer” were reversed at positions 2 and 3, but the overall pattern was very similar. As noted in the discussion regarding the technologies used to send/provide data, one would expect the use of Web Services to increase over time, as this is the predominant technology in use now throughout the IT industry.

What Architecture do You Use to Receive Information From Partners?

Question: What information sharing architecture or approach is used to receive data from other agencies?

Respondents were asked to identify what technology architecture or underlying technology was used to receive information from partners. Respondents were asked this question for each discipline that they had previously identified as receiving information from. Respondents were given a limited set of seven predefined response options to select from, as illustrated in table 16.

Architecture Used to Receive Data	Percent
Don't know	42.5%
Point-to-point Exchange	20.0%
Other	12.6%
Middleware	9.9%
Service Oriented Architecture (SOA)	6.1%
Enterprise Service Bus (ESB)	4.7%
Data Warehouse	4.3%

Table 16 – Technology Architecture Used to Receive Information

This question required a more technical understanding about **how** information was shared, rather than **what** information was shared. The large percent of surveys in which respondents selected “Don’t know” suggests that this level of detail is beyond many people’s understanding of information sharing. This disparity is even more pronounced than in table 10 (which shows the architecture used to send/provide information). The analysis of the other response options is essentially the same as well between tables 10 and 16. Most exchanges are “Point-to-point,” which likely reflects the fact that older exchanges used this technology. By the same token, there is a lower level of usage of newer technologies (at least within the criminal justice space), which should be expected to increase over time.

What National Standards do You Use to Receive Information From Partners?

Question: Does your organization use national standards in information received from other agencies?

The last question asked about information received from partners; it was intended to assess the use of national standards and best practices. As noted in the discussion of this question in the Send/Provide section, this question referred to the collection of response options as standards—although they more realistically represent standards, emerging standards, guidelines, and best practices. Respondents were assumed to understand this distinction and to be familiar with the terms. Responses to this question are presented in table 17.

Standards Used to Receive Data	Percent
Don't know	56.1%
Unknown	18.1%
Global Justice XML Data Model (GJXDM)	15.2%
National Information Exchange Model (NIEM)	6.2%
Justice Reference Architecture (JRA)	4.0%
Global Federated Identity and Privilege Management (GFIPM)	0.5%
Emergency Data Exchange Language (EDXL)	0.0%

Table 17 – Standards Used to Receive Data

Like the responses to the previous question, most respondents did not appear to be familiar with these terms and did not know if these standards or best practices were used to receive information. This is similar to the responses to these same questions regarding data that are sent/provided to partners. Three-quarters of respondents (74.2%) responded either “Don’t know” (56.1%) or “Unknown” (18.1%). The two most-used standards are GJXDM and NIEM at 15.2% and 6.2%, respectively. NIEM and GJXDM are data models that have had significant exposure to the justice and public safety communities, so it is

not unexpected that they are both fairly well known. GJXDM is the older standard, which has been superseded by NIEM, which may explain the slightly broader adoption and use of GJXDM.

With the use of other standards, the same similarity exists between data received and data provided/sent. The other three “standards”—EDXL, JRA, and GFIPM—appear to have had less success in terms of adoption and use. None of these has yet made a significant penetration into information sharing. (See the related discussion following table 11.)

The overall lack of awareness, adoption, and use of these standards is disappointing. Given the strong and sustained promotion of at least some these standards—the use of NIEM, the GRA, and in the past the GJXDM, have been required for federal grant programs from the Office of Justice Programs—one might wonder why respondents were not more familiar with them. This may in part be explained by the person responding to the survey. The survey asked respondents to have both business and technical knowledge in order to answer the different questions asked. It is likely that respondents had more business and less technical knowledge.

Section 4 – Need for New Exchanges, Barriers to Adoption, and Use of National Standards and Resources

The fourth and final section of the survey asked respondents a series of more general questions about their information sharing needs and other factors. For purposes of this analysis, all 148 respondents who were included as valid respondents were included in the tabulation and analysis.

Need for New Exchanges

Question: Please identify the types of information that you would like to receive or could provide electronically that are not currently available.

Respondents were asked to identify those information exchanges that they would like to either send to or receive from partners based on 36 predefined categories.²³ Each of the three following tables displays these 36 categories of information exchange sorted first by the need to Send or Provide Data (table 18), the need to Receive Data (table 19), and combined (table 20).

²³ Three categories of data exchange included in earlier parts of the survey (Firearms Registration, Sex Offender Registry, and Suspicious Activity Reports) were inadvertently omitted from the questions pertaining to needed information exchanges.

Need for New Exchanges that Send or Provide Data to Partners

Exchange Type	Send/ Provide	Receive	Combined
Offender Identification (Name, Contact Information, DOB, etc.)	19	19	38
Offender Identifiers (SID, FBI #, SSN, etc.)	19	22	41
Offender Demographics (Race, Sex, Height, Weight, etc.)	19	23	42
Incidents	16	24	40
Mug Shots	16	25	41
Arrest/Booking	15	23	38
Charges	15	22	37
Defendant Identification (Name, Contact Information, DOB, etc.)	15	17	32
Defendant Identifiers (SID, FBI #, SSN, etc.)	15	19	34
Victim	15	17	32
Defendant Demographics (Race, Sex, Height, Weight, etc.)	14	18	32
Offender Management (Admission/Term of Confinement/Release)	14	17	31
Case Filing	13	18	31
Biometric (Fingerprint) Identifiers	12	20	32
Case Disposition	12	28	40
Case History/Minutes Orders/Summary of Proceedings	12	38	50
Citations	12	19	31
Witness	12	10	22
Case Declination/Nolle Prosequi	11	18	29
Driver's License Information	11	24	35
Dispositions	10	22	32
Interviews	10	17	27
Program data (Treatment, Education, etc.)	10	19	29
Warrants	10	19	29
Court Calendar/Event	9	21	30
Discovery	9	8	17
Sentences	9	24	33
Bail/Bond	7	16	23
Telephone Calls	7	8	15
Terms and Conditions of Probation	7	22	29
Vehicle Owner Information	7	16	23
State Criminal History	6	23	29
Visitors	6	10	16
Financial Obligations	5	15	20
Medical	4	17	21
Protection Orders	4	21	25
Total	407		

Table 18 – Data Exchanges Needed – Send or Provide

Need for New Exchanges to Receive Data from Partners

Exchange Type	Send/ Provide	Receive	Combined
Case History/Minutes Orders/Summary of Proceedings	12	38	50
Case Disposition	12	28	40
Mug Shots	16	25	41
Driver's License Information	11	24	35
Incidents	16	24	40
Sentences	9	24	33
Arrest/Booking	15	23	38
Offender Demographics (Race, Sex, Height, Weight, etc.)	19	23	42
State Criminal History	6	23	29
Charges	15	22	37
Dispositions	10	22	32
Offender Identifiers (SID, FBI #, SSN, etc.)	19	22	41
Terms and Conditions of Probation	7	22	29
Court Calendar/Event	9	21	30
Protection Orders	4	21	25
Biometric (Fingerprint) Identifiers	12	20	32
Citations	12	19	31
Defendant Identifiers (SID, FBI #, SSN, etc.)	15	19	34
Offender Identification (Name, Contact Information, DOB, etc.)	19	19	38
Program data (Treatment, Education, etc.)	10	19	29
Warrants	10	19	29
Case Declination/Nolle Prosequi	11	18	29
Case Filing	13	18	31
Defendant Demographics (Race, Sex, Height, Weight, etc.)	14	18	32
Defendant Identification (Name, Contact Information, DOB, etc.)	15	17	32
Interviews	10	17	27
Medical	4	17	21
Offender Management (Admission/Term of Confinement/Release)	14	17	31
Victim	15	17	32
Bail/Bond	7	16	23
Vehicle Owner Information	7	16	23
Financial Obligations	5	15	20
Visitors	6	10	16
Witness	12	10	22
Discovery	9	8	17
Telephone Calls	7	8	15
Total		699	

Table 19 –Data Exchanges Needed – Receive

Need for New Exchanges – Combined

Exchange Type	Send/ Provide	Receive	Combined
Case History/Minutes Orders/Summary of Proceedings	12	38	50
Offender Demographics (Race, Sex, Height, Weight, etc.)	19	23	42
Mug Shots	16	25	41
Offender Identifiers (SID, FBI #, SSN, etc.)	19	22	41
Case Disposition	12	28	40
Incidents	16	24	40
Arrest/Booking	15	23	38
Offender Identification (Name, Contact Information, DOB, etc.)	19	19	38
Charges	15	22	37
Driver's License Information	11	24	35
Defendant Identifiers (SID, FBI #, SSN, etc.)	15	19	34
Sentences	9	24	33
Biometric (Fingerprint) Identifiers	12	20	32
Defendant Identification (Name, Contact Information, DOB, etc.)	15	17	32
Defendant Demographics (Race, Sex, Height, Weight, etc.)	14	18	32
Dispositions	10	22	32
Victim	15	17	32
Case Filing	13	18	31
Citations	12	19	31
Offender Management (Admission/Term of Confinement/Release)	14	17	31
Court Calendar/Event	9	21	30
Case Declination/Nolle Prosequi	11	18	29
Program data (Treatment, Education, etc.)	10	19	29
State Criminal History	6	23	29
Terms and Conditions of Probation	7	22	29
Warrants	10	19	29
Interviews	10	17	27
Protection Orders	4	21	25
Bail/Bond	7	16	23
Vehicle Owner Information	7	16	23
Witness	12	10	22
Medical	4	17	21
Financial Obligations	5	15	20
Discovery	9	8	17
Visitors	6	10	16
Telephone Calls	7	8	15
Total	407	699	1106
Percentage	36.8%	63.2%	100%

Table 20 – Data Exchanges Needed – Combined

The need to receive data exchanges appears to be greater than the need to provide new exchanges. Of the total number of information exchanges needed, almost two-thirds identified exchanges that needed to be *received* (63.2%) and one-third were identified exchanges that needed to be *sent* (36.8%). It is not

surprising to find that respondents felt they needed data from partners and did not identify as great a need to provide new exchanges.

Barriers to Adoption

Question: Please rank the following barriers to sharing information? (1 = high, 2 = medium, 3 = low, 4 = n/a)

Response Options:

Financial
Legal
Privacy
Lack of Planning
Lack of Cooperation or Interest
Internal Resources
Expertise

This question was included in the survey, but the tool did not capture the responses. It is unknown if the question was skipped as a consequence of the survey design logic and respondents never saw this question, or whether the question was asked. For some unknown reason, the results were not captured.

Factors for Success

Question: How important are the following factors when developing information sharing solutions? Please rank these following factors in order of importance (1 = most important, 4 = least important).

The survey asked respondents to rank the relative importance of the four factors identified in table 21.

Success Factor	Average Rank
Adequate Funding	1.98
Strategic Planning	2.47
Mandate	2.74
Project Champion	2.84

Table 21 – Ranking of Success Factors

The most significant factor leading to project success is Adequate Funding (lowest score has highest ranking). Following this was Strategic Planning, some form of Mandate, and, lastly, a Project Champion.

Use of National Resources

Question: Have you used any resources, created and/or supported by the following entities, in developing your information exchanges or information sharing environment?

A variety of resources are offered to the justice and public safety communities that focus on the adoption and use of national standards and information sharing technologies. Respondents were asked to identify those organizations and resources that they have used in support of developing information sharing capabilities.

National Resource	Count	Percent
Bureau of Justice Assistance (BJA)	28	16.7%
SEARCH, The National Consortium for Justice Information and Statistics	26	15.5%
IJIS Institute	25	14.9%
National Institute of Justice (NIJ)	19	11.3%
U.S. DOJ's Global Justice Information Sharing Initiative (Global)	19	11.3%
Justice Information Sharing Practitioners (JISP)	18	10.7%
Bureau of Justice Statistics (BJS)	14	8.3%
National Center for State Courts (NCSC)	13	7.7%
National Criminal Justice Association (NCJA)	13	7.7%
National Governors Association (NGA)	13	7.7%
Institute for Intergovernmental Research (IIR)	7	4.2%
American Probation and Parole Association (APPA)	5	3.0%
Association of State Corrections Administrators (ASCA)	4	2.4%
NLETS	2	1.2%
NCIC	1	0.6%
N-DEx	1	0.6%
DHS	1	0.6%

Table 22 – List of National Resources Familiar to Respondents

The organization or resource that was most familiar to respondents was the Bureau of Justice Assistance, which provides grant-funding opportunities for information sharing activities at the state and local level (table 22). BJA also funds many of the other resources included in this list. Of concern is the relatively low overall familiarity respondents had with all of these resources. Fewer than 1 in 6 respondents knew about the most familiar resource, BJA. All the other resources were even less well known. This suggests that greater outreach by these resources is needed to promote and support the use and adoption of information sharing national standards.

Adoption of Common Charges and Data Dictionary

Finally, respondents were asked if they used a common method to identify charges across multiple systems (a common charge table) and if they used a common data dictionary across multiple systems.

Question: Does your jurisdiction or organization use a common charge table?

Response Option	Count	Percent
Yes	40	23.8%
No	19	11.3%
Not Applicable	7	4.2%
Don't know	15	8.9%
Blank (no response)	87	51.8%
Total	168	100.0%

Table 23 – Use of a Common Charge Table

The majority of respondents either failed to respond to this question, responded that they didn't know, or that this issue was not applicable to them (table 23). Of those responding either "Yes" or "No," nearly twice as many indicated that they used a common charge table.

Question: Does your jurisdiction or organization use a common data dictionary (NIEM, Other XML-based, COSCA, etc.)?

Response Option	Count	Percent
Yes	34	20.2%
No	21	12.5%
Not Applicable	5	3.0%
Don't know	22	13.1%
Blank (no response)	86	51.2%
Total	168	100.0%

Table 24 – Use of a Common Data Dictionary

As in the previous question, the vast majority of respondents either did not respond the question or indicated that they did not know if they had used a common data dictionary, or the use of a common data dictionary was not applicable to them (table 24). Only one in five respondents indicated that they did use a common data dictionary, and this was about twice as many as those responding that they have not used a common data dictionary.

While information sharing does not require the use of a common charge table or a common data dictionary, using them can simplify the information sharing process. Each addresses a major challenge in information sharing.

- Using a **common charge table** ensures content or value equivalencies of one of the most important pieces of information shared in the criminal justice system—offense and charge information.
- Using a **common data dictionary** eases the challenge of ensuring semantic equivalency of data elements used in multiple systems or across business domains.

It is important to note that while implementing a common charge table or common data dictionary can be beneficial, both inevitably encounter boundaries to their usage. Ultimately, a national data model like NIEM must be used to improve the ability to share data beyond parochial boundaries. NIEM provides a mechanism to ensure semantic and structural data equivalencies across systems.

Perhaps the most notable observation about these responses is the fact that so many organizations **do not** use either a common data dictionary or a common charge table. This illustrates and underscores the importance of national initiatives such as NIEM to enable the accurate translation of data among multiple systems. These two questions may have also fallen victim to the knowledge of the respondents. If respondents had greater expertise in the business operations of their organization rather than technical knowledge about how their systems work, then there may have been fewer “Don’t know,” “Not Applicable,” or blank responses.

Aggregate Analyses and Observations

Respondent Profile

The vast majority of respondents represented states (52.7%), counties/parishes (24.3%), and municipalities (13.5%)—or a combined total of 90.5% (134 of 148). This reflects the target audience for the survey and indicates that the channels of distribution reached the intended audience. The distribution across disciplines was not as well-targeted. The law enforcement and public safety communities represented the largest segment of respondents (74 of 148, or 50.0%), with those identifying themselves as law enforcement representing the largest single discipline (42 of 148, or 28.4%). Corrections and community corrections (17.6%), prosecution (8.8%), and justice services (7.4%) represented the next three largest respondent groups and the remaining disciplines had far lower representation. Although the number of responses from other disciplines were low, this may, in fact, accurately reflect the overall size of these communities because law enforcement is by far the largest discipline with close to 17,000 independent law enforcement agencies nationwide; however, for purposes of this survey, the predominance of law enforcement responses clearly influenced most of the aggregate analyses.

The next level of analysis on these data is to analyze responses by discipline. This will provide a clearer picture of system usage and the level and types of information sharing currently in use. However, other than within the law enforcement communities, the numbers of responses within each of the other disciplines may be too small to yield meaningful results.

General Automation

Respondents indicated that all of the 31 predefined system and application types were used in one form or another. Here the bias toward the usage by the law enforcement communities is evident in that the most frequently used systems and applications are those typically associated with law enforcement.

Additional analyses were performed on those systems and applications that respondents indicated they “owned or controlled.” The intent of these questions was to determine the degree to which COTS products were used by the respondents. As discussed in Section 1, the results show that a slight majority of the systems and applications used by respondents are COTS products (53.5%). Those respondents using COTS products were asked to name the product or vendor.

Level of Information Sharing – Comparing Data Sent to Data Received

The overall level of information sharing between disciplines is fairly equivalent, if lower than expected. In aggregate, 32.4% of respondents *send* or *provide* data to one or more partners, while 29.3% *receive* data from one or more partners. There is a notable difference, however, in the types of information shared when comparing data provided/sent versus data received. Respondents send/provide far more different types of data to partners than they receive from partners. Comparing table 6, Information Sent/Provided – Most to Least Frequent, to table 12, Information Received – Most to Least Frequent, shows that the number of respondents who indicate that they *send* data to recipients ranges from 79 to 318. Meanwhile, the number of respondents who indicate that they *receive* data from recipients ranges from 24 to 192. These numbers reflect the total number of data type and recipient combinations, and suggest that respondents receive far less information than they provide.

Because of the large number of law enforcement and public safety respondents, any further generalizations about the overall level of sharing must be tempered with the understanding that aggregate results reflect the needs and capabilities of this discipline. In light of this caution, the following observations are offered:

- The disciplines that most frequently *sent or provided* information to other disciplines were Law Enforcement (63.1%), Courts (48.1%), Criminal History Repositories (44.5%), and Corrections (39.7%).
- Similarly, the organizations that most frequently *received data* included Law Enforcement (64.4%), Courts (56.8%), Corrections (47.8%), and Criminal History Repositories (41.6%).
- The most frequently *shared data* (either sending or receiving) was data pertaining to individuals (identified as either Offender or Defendant data), including Person Name, Person Identifiers, and Person Descriptors or Demographics. Again, the distribution of responses likely reflects the preponderance of law enforcement and public safety respondents.

Of greater interest were the means of information sharing used by respondents. To most respondents, information sharing—whether sending or receiving data—means some kind of query access. Direct or portal-based queries accounted for almost half of data sharing (Sending – 47.0%, Receiving – 44.7%). The level of automated data exchange is used by only about one-quarter of the respondents (Sending – 26.9%, Receiving – 26.6%), suggesting that automated, integrated information sharing is still not common. For those respondents who indicated that they shared data through automation, older technologies were used more than newer technologies: File Transfer Protocol and Direct Database Access methods were used more often than newer technologies like Messaging or Web Services. This suggests that many information exchanges may have been created before these newer technologies became available. It also suggests that newer exchanges are either relying on older, established mechanisms or fewer exchanges are being developed. Neither of these can be confirmed because dates of implementation were not asked in the survey.

After drilling into the details of individual information exchanges, respondents were asked to identify what architecture and standards were used in information exchanges. The most common architecture used to send or provide data was “Point-to-point,” followed by “Service Oriented Architecture.” The most common architecture used to receive data was “Point-to-point,” followed by “Other.” The most disconcerting aspect of the responses to this question was that the largest response option was “Don’t know” (Sending 33.7 – %, Receiving – 42.5%). This suggests that respondents were less technically familiar with their information sharing environment. When asked about the use of national standards, such as NIEM and GRA, the most common answers were “Don’t know” or “Unknown” (66.4% combined for Sending, and 72.4% combined for Receiving). Again, this suggests that respondents were not familiar with the underlying technologies used to share information. The most familiar standard was the Global Justice XML Data Model (GJXDM) (Sending – 15.6%, Receiving – 15.2%), followed by NIEM (Sending – 14.2%, Receiving – 6.2%), suggesting that most respondents were not familiar with the newer standards. This general lack of familiarity with and awareness of these standards should be a cause for concern to those promoting the adoption and use of these standards.

Need for New Exchanges and Use of Standards and Resources

In the final section of the survey, respondents were asked a series of more general questions. When asked what exchanges were needed, the most requested exchange was for court case history information. Again, since the largest segment of respondents was law enforcement and public safety, this shows that this information is not reaching them. When asked to rank “Success Factors,” respondents ranked these as (1) adequate funding, (2) the need for strategic planning, (3) the presence of a mandate, and (4) a project champion.

Respondents were asked to identify which national resources they had used. The top three were the Bureau of Justice Assistance, SEARCH, and the IJIS Institute. Finally, respondents were asked if they used a common charge table (or common charge identification mechanism) or a common data dictionary. Only a limited number of respondents answered these questions: 23.8% of respondents indicated that they used a common charge table and only 11.3% said they did not. This suggests that where a common charge table would be of use, most respondents indicated that they did use one. Likewise, when asked if they used a common data dictionary, 20.2% of respondents indicated that they used one and 12.5% said they did not. Again, the large number of other responses suggests either that neither of these features is applicable to their organization or they are not aware of their use.

As noted in the beginning of this discussion, this analysis is limited to the responses of all survey respondents across all disciplines. To better understand the level of information sharing within each discipline, these same analyses should be performed for each discipline. This would provide a clearer picture of which disciplines appear to be more successful at information sharing. Notwithstanding the need for this more granular level of analysis, the aggregate numbers present a picture of the state of information sharing within the criminal justice and public safety communities. Information sharing appears to be a relatively rare capability. The adoption of national standards and initiatives has a long way to go before these standards and initiatives become institutionalized.

Importance of Person-related Information

While the largest percentage of respondents represented law enforcement and public safety disciplines and this introduces some bias into the analysis of results, it seems clear that person-related information is very important and needs to be shared within the criminal justice system as a whole. When looking at what information is most important either to send/provide to or receive from other partners, person-related information is identified as most frequently shared. Bearing this in mind, person-related information (identifiers, descriptive demographics, etc.) should be incorporated in all information exchanges to maintain the integrity of the person data being shared.

Lessons Learned

Survey Design

The designers of this survey were aware that its length and complexity presented challenges. The greatest risk was that respondents would abandon the survey once they saw how detailed it was. The completion rate of 36.1% (148 completed surveys out of 410 surveys that were started) reflects this risk. Without knowing typical completion rates for similar surveys and audiences, it is difficult to assess whether the completion rate is acceptable.

Similarly, the questions asked ranged from operational to technical, and this required a broad base of knowledge typically not held by any one individual within an organization. Although the survey introduction pointed out the need for business and technical knowledge in order to complete the survey accurately, it is unclear if individuals possessing this breadth of knowledge participated in the survey response. If the respondent possessed limited knowledge in one area or the other, it may have compromised the accuracy of the results. This observation is based on the comparison of duplicate surveys where multiple individuals responded on behalf of an agency. Frequently, the responses from duplicate submissions varied significantly from one another, suggesting that answers vary based on the knowledge of the person completing the survey.

The survey allowed respondents to identify their discipline by selecting one or more of 11 predefined disciplines and “Other.” In order to analyze these results, respondents identifying their organization as multi-disciplinary or “Other” were recategorized into one of the 11 discipline categories. Should future surveys be conducted, the diversity of these responses should be considered when defining discipline categories.

The limitations of the survey tool contributed to the complexity of the survey. The QuestionPro survey tool offered sufficient flexibility and control to produce an instrument that reduced the complexity of the question flow, but did not eliminate it altogether. For example, the original survey design envisioned a process where respondents would be presented with a single list of disciplines from which they would select all the disciplines they shared data with at one time. Then for each discipline selected, the respondent would be led through the appropriate detailed questions. The tool could not manage the questions in this way and required respondents to address each discipline individually before addressing the detailed questions when that discipline was selected. This method made the survey much more tedious to complete, contributed to the appearance of complexity, and added to the length of time required to complete it. Due to the challenges of making the survey fit the tool, the survey design process took much longer to complete than originally anticipated. In the end, the features and capabilities of the tool dictated how the survey “flows,” and the survey designer needs to be very proficient with the tool to get the most out of it.

Outreach and Distribution

NAJIS followed an outreach and distribution strategy that relied on the participation of other criminal justice and public safety organizations and interest groups. This approach provided the broadest distribution to the targeted audience. The Global Advisory Committee represents over 30 justice and public safety organizations. Their willingness to endorse and distribute the survey to their membership organizations represented the best and easiest method of reaching the survey’s target audience. NAJIS

also distributed the survey through other, more focused organizations like JISP and the APA, as well as NAJIS's own email distribution list of past conference attendees. A disadvantage to using other organizations to distribute the survey is not knowing the level to which each organization promoted the survey to their respective constituencies. One way to improve the effectiveness of this strategy would be to conduct follow-up contact with each organization to encourage distribution of the survey. This was done in only a very limited way, and should be considered for future surveys. Overall, while it is difficult to assess the effectiveness of this approach, this strategy still appears to be sound.

Survey Tool Output

The survey tool has a significant influence and effect on the level of effort required to analyze the results. The QuestionPro tool produces output in both graphical and spreadsheet form. The graphical outputs were largely unusable because they were generated using all of the raw data and could not be recreated after cleaning and validating the data. The spreadsheet output of the response data became the basis for all analyses. Use of the spreadsheet data had its own challenges. The tool produces one row for each survey that was started and one column for every possible question and response option combination (plus headings). As a result, the spreadsheet output contained 413 rows and 13,468 columns, making it cumbersome to manipulate and analyze. Complicating this work, the tool only provided output in Microsoft Excel 2003 format, which limits the width of each worksheet to 256 columns. Consequently, the raw output was spread across 54 worksheets, which had to be consolidated before any analysis could be performed. Finally, the spreadsheets generated by the survey tool contained only a limited number built-in aggregations, and many new aggregations had to be added in order to effectively compile the results.

The online survey is by far the most effective method of distributing a survey targeted at a large number of respondents. However, these tools have potentially significant limitations both in terms of survey design and output capabilities. In the case of the latter limitation, other analytical tools may be more effective at analyzing results and should be considered (assuming that these tools can read the raw data produced by a survey tool or have their own capability to develop and distribute an online survey).

Conclusion

The 2011 National Justice Information Sharing Survey collected data on information sharing capabilities from only a small fraction of the criminal justice community. Survey administrators collected 148 complete and valid responses and included them in this analysis. It was not a scientific survey and cannot be generalized to represent the information sharing practices of the more than 17,000 law enforcement agencies and the thousands of other agencies and organizations in the criminal justice system when including prosecution, courts, corrections, and allied agencies. However, these responses do provide an informative “snapshot” of information sharing practices by criminal justice and public safety agencies representing all facets and disciplines of this community. It provides a glimpse into the level of technology use and information sharing that is occurring in the criminal justice community—especially at the state and local levels. The survey results show that information sharing efforts are being made by all disciplines within the law enforcement and public safety communities.

In spite of its limitations, the survey results create a baseline of actual information sharing practices in early 2011 against which future surveys can be compared to identify trends and patterns of usage. The goal of the many groups focused on improving information sharing is to assess the levels of adoption usage. This survey provides a means to do this, however imperfect it may be, and future surveys should be considered to measure progress in this area.