A Spillman Technologies White Paper

data conversion
Implementing a functional public safety system
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introduction

For many public safety agencies, data conversion is a primary decision that requires a significant amount of time and preparation. Before committing to data conversion, it is critical for an agency to have a thorough understanding of its existing information system in order to accurately assess operational needs. Whether converting full or partial data, many options and alternatives exist. The purpose of this white paper is to inform agencies contemplating data conversion about the complexities associated with the process.

What is Data Conversion?
The process of converting data stored in one format to another format is called data conversion or data migration. Transferring source documents from paper, digital, or image formats to a specific digital format is often the most difficult task when implementing a functional public safety system.

Who Uses Data Conversion?
A public safety agency that is implementing a new records management, jail management, or CAD system often requests to conduct some level of data conversion in order to move its accumulated records information from its existing system.

How is a Data Conversion Done?
Information is stored in a database, which is a collection of data grouped into different tables. A table is a collection of records which, like a file drawer, contains similar records of one kind. For example, records of names, vehicles, or property.

Data within a table is categorized into rows for records and columns for each field in a record. For example, the data elements for a name record on John Doe might be structured as last name, middle name, first name, age, height, etc.
Because there isn’t a standard structure for organizing data, the position of data elements can vary greatly from system to system. For this reason, an agency must work closely with its new system vendor to ensure the accuracy of converted data. The following steps are typically part of the data conversion process:

• An agency starts by identifying what information to convert and, with the help of its current system vendor, extracts the data from its database into an ASCII delimited file.

• Next, the data file is thoroughly analyzed by the agency administrator and new vendor implementation specialist to determine how many tables hold the desired data and pinpoint field sizes or any truncated, coded or masked data.

• Then, the agency and new system vendor decide where to position the information in the new system, considering the structure of the database and how the information will match up with the number of tables in the new system.

• Afterwards, the new system vendor writes a program to convert the data. This is done by running the data through a series of rules to create a clean file to upload into the new system. Often, the data is processed multiple times, called iterations, before uploading the information.

• Once the agency feels that the current iteration is acceptable, and the new system is prepared to accept the converted data, a final data conversion takes place. From this point on, data is no longer added to the former information system and the new system is used exclusively.

primary industry challenges

Many agencies share common concerns when choosing to conduct a data conversion and implement a public safety system. The following are some of the key challenges an agency faces when selecting data conversion services.

Purpose of Data Conversion
An agency must define the purpose behind why it wants to convert data and what it will do with the data once it is converted. A public safety agency should assess whether it will be primarily referencing the information or if the data will be actively used to run statistical reports or analyze trends. By defining these elements, an agency can identify important information based on how it will be used when the new system is implemented.
Data Integrity
The quality of the existing data is also a major factor when determining data conversion. Some systems contain portions of duplicate data, lost data, orphaned records, or records that haven’t been linked properly. Before beginning a data conversion process, an agency should assess how “clean” its data is. In other words, is the data reliable and accurate enough to convert and use as a basis for future data records? For example, an agency could be very discouraged after conducting a data conversion if its system contained numerous duplicate records for the same name John Smith. This issue would require additional work to remove the duplicate records from the new system and would ultimately inflate the estimated cost of the data conversion project. Therefore, an agency must decide whether a data “cleansing” must be performed prior to any information being transferred to a new system.

Value of Data Conversion
Converted data can sometimes have less value to an agency than previously thought. For example, an agency that converts only names and addresses may find that without being tied to incidents, vehicles, or property, the information has little significance. In addition, it would be useless to convert an agency’s data if all the information has been solely entered and stored in free-text fields because the data would not be fully integrated with future data entered in the new system. For these reasons, an agency should consider whether converted data will be valuable long after implementation.

Technical Work
Data conversion demands an intensive amount of work from both the agency and the vendor. An agency must carry out a comprehensive analysis of its data in order to successfully transfer data tables, fields, and data elements. Often during the conversion process, fields may not translate as anticipated because they don’t contain the same data elements from system to system. Therefore, the agency’s current data may not be structured in the same way once the information is housed in the new system. Code tables and field sizes must be matched, among other technical variations. As a result, conversion expectations must be clear to both parties, and the agency needs to take ownership in the outcome of the data conversion project.

Data Extraction
After identifying what information is needed, the agency should determine if and how it will be extracted from the current database. The agency should assess the current format of the data and decide whether it needs to enlist the help of the current vendor to complete the extraction process.
Spillman Technologies: Data Conversion

Spillman’s data conversion services

Spillman recommends a variety of conversion options to meet the unique information needs of each agency. However, it is important for a public safety agency to weigh the costs and benefits of each alternative before selecting a conversion option. Consideration should be given to the overall effects each option can have on data accuracy, system reliability, operational procedures, and personnel resources.

Full Data Conversion

Many agencies recognize that current system inadequacies are the reason they selected to purchase a new public safety software system. These inadequacies often manifest themselves in the way data is stored, such as duplicate names or the lack of coded fields. Often, the result is unacceptable data conversions unless the issues are fixed prior to the conversion.

While full data conversion is available, Spillman recommends that an agency prepares for data conversion by manually checking for errors and automatically cleansing data files. Spillman also suggests that agencies conduct a comprehensive review of the limitations of its existing data before attempting a full data conversion. In addition, agencies that do not have the manpower to cleanse the data beforehand should not attempt it due to the risks associated with converting duplicate data.

In order to successfully achieve full data conversion, an agency must carefully assess the quality of its data and have confidence in its accuracy. Often times, an agency will undergo full data conversion without understanding the consequences of converting numerous duplicate entries into a new system. Orphaned records and other data not properly linked can compound this problem. Ultimately, an agency can spend a significant amount of resources to convert data that isn’t valuable or accurate.

In addition, many agencies find it difficult to obtain assistance from current vendors when preparing data for extraction. If vendors aren’t willing to help in the conversion process, an agency can be left scrambling to resolve complex data issues on its own.

Minimum Data Conversion

One viable alternative open to agencies is to transfer a portion of existing agency data, such as names and/or criminal history information. This limited amount of data is converted into the Spillman system, and any associated data is saved in the accompanying text narratives, which still offers search capabilities. This option requires less effort and expense because only the most critical portion of data is mapped and converted into the Spillman system. It provides a means to keep data that is critical for historical reference or background information. Other data associated with the converted records can be preserved in Spillman’s unique Involvements™ feature, which can greatly decrease the amount of field-to-field mapping required.
No Data Conversion

In many cases, it is more useful for an agency to begin using a new system without any previous data converted to the new database. A significant benefit to this option is starting with a clean slate and full confidence in the integrity of data that will be entered, stored, and used in the system. Personnel can rely on Spillman data that is accurate, reliable, and accessible. In addition, an agency can be assured that all of its data will be integrated correctly, providing immediate access to data and collaboration with other agency departments. As a result, an agency can save a significant amount of time and money that would otherwise go toward data conversion by considering alternatives.

Parallel Data Systems

Spillman offers a parallel data system solution to an agency that opts to either convert minimal or no data. During the transitional period that begins with the implementation of the Spillman system, an agency can continue to run its former system alongside the new system. This allows an agency to reference historical data by querying the former system and provides the option for personnel to manually enter any vital data elements, enabling the agency to maintain the integrity of its new Spillman system while building a rich database from previous records. Parallel systems can be utilized as long as the former data remains valuable to an agency or until its former system, or hardware, fails to operate.

other considerations

Public safety agencies can end up dissatisfied with the result of a data conversion if expectations are not met. Spillman strongly recommends that an agency be proactive during its data conversion process to establish clear expectations and decrease the time and costs associated with the project.

Communication

Spillman relies on open communication with an agency administrator to conduct a successful data conversion. It is critical for the agency administrator to fully understand the scope of how data has been entered in the current system, how the Spillman system structures data, and how the agency will be entering future data into the Spillman system. This enables both parties to ensure the accurate conversion of critical data.

Responsiveness

If an agency opts for some form of data conversion, the agency administrator should be aware of the role the agency will play throughout the process. Progress is more efficient when the agency administrator interacts with Spillman representatives during every step of the conversion to help map the data and test the data once it is converted.
Public safety agencies rely on comprehensive data to reference names, vehicles, property, wanted persons and other records. Before considering a complex data conversion, an agency must fully understand its current system, data entry policies, and future plans for data entry and storage.

Spillman's priority is to offer agencies a variety of data conversion options to fit their unique needs, resulting in the most cost-effective transition to the Spillman Public Safety System.