

CHAPTER THREE

APPRAISAL AND APPLICATION

GENERAL SUMMARY

The state selection process verified the concerns about security and risk exposure expressed in the Interim Report by state legal departments. The states that declined participation in the project did so after assurances that the research team did not want sensitive or confidential information. The process of field exclusion from data records was explained to them to no avail. After making this argument, the discussion turned to the potential burden on support staff and the current workload of those asked to participate in the on-site survey process. It became obvious that the persons involved in the decision process had determined to exclude themselves without further consideration. The research team believes that the states perceived a minimal return for the effort that they would have to put forth as a pilot state. In order to gain the participation of all states in a national data-management system, tangible rewards in the form of both short-term and long-term benefits will need to be proven and assurance of security will have to be demonstrated. Representatives from state departments of transportation will need a firsthand demonstration that the system does not contain overly sensitive information, does not require excessive involvement from support staff, and can provide relevant data pooling and processing of both internal (state's) and external (national) data. The current model system would require additional enhancements and improvements to bring it to an acceptable level to be effective in a demonstration that was meant to soften the concerns of risk exposure and convince them of the value in participating in this venture. A more thorough interview/presentation process with the state agencies to promote a national data-management system would provide the opportunity to discover what information is of value and demonstrate the data collection process to relieve concerns of "overburdening" their administrative staff. The "data bites back" issue discussed in the Interim Report can only be resolved by clarifying the legal protection rights of states' data after they are collected in a pooled database.

The on-site survey process proved adequate to complete a general assessment of the state's data environment given the time allowed. Each individual department was able to provide enough information about its data processing to give the research team a general overview of the structure (data

fields) and flow of information. Time did not allow a thorough content review of the exported data records with functional managers in each department; the ramifications were realized during data analysis. The managers and technical support staff assisting the research were helpful. However, a knowledge gap between department heads, functional managers, and technical staff became evident as the survey process progressed. Each individual state demonstrated overlap between management and support, and users varied widely. Several factors seem to contribute to these problems, including:

- Administrative authority and location of the information system;
- A large and complex organizational structure;
- Limited technical staff supporting multiple agencies in the state;
- A highly centralized technology department that controls the information systems but is not familiar with the functional needs of the departments;
- Communication gaps between functional managers and technical staff; and
- Decentralization of departments and agencies that share an informal information flow.

The pervasive issue throughout the state survey process was the lack of a single administrative and operational approach to electronic data handling. Though information was accessible or passed to the next functional department in the chain, its content often changed to suit only the needs of the specific department. Often, a gap in content required that extra time and cost be spent to acquire information that should already have existed in the data record. For instance, specific details such as the narrative section on an accident report did not get recorded or included in an electronic data file that was passed through to the legal department for a tort claim. The information had to be retrieved in paper copy during the discovery phase of case investigation, often without the benefit of a single common identifier to tag the desired file. An immediate benefit to states participating in a national system would be the results of a thorough assessment that could direct improvements to their own internal data processing at no additional cost.

Table 3.1 provides a breakdown by field and value of the information and data obtained from the on-site survey process. The table offers a perspective of the data analysis and normalization process required to bring a given state's data into a common and somewhat standard set of references, such as the core data elements.

Table 3.1 Data Fields and Values

Dept. Resource	<u>California</u>		<u>West Virginia</u>		<u>Florida</u>		<u>Missouri</u>		<u>Washington</u>	
	Fields	Values	Fields	Values	Fields	Values	Fields	Values	Fields	Values
Legal										
Department File	81	173			25	39			40	160
Claims File										
Risk Management										
Department File					21	140	21	N/A	23	70
Insurance Co.			191	400						
Engineering										
Department File										
Highway	114	510					100+	500	100+	500
Traffic Operations										
Department File	330	1,320								
State Info Services	56	280			114	392			90	720
Accident File			170	200						
Total	581	2,283	361	600	160	571	121+	500+	153	1,450
Aggregate	1,255	4,904								

The plan for site visits and systems analysis was based upon the information gathered in Phase I. The preliminary research indicated that electronic systems were capturing a nominal amount of information relevant to the core data elements, when indeed it was coming from subordinate agencies or systems. Table 3.2 demonstrates the expected resource versus the actual resource where information was found as it pertained to directly supporting the core data elements. The table provides a list of alternate resources from which information could be retrieved for primary use or supplemental support.

Table 3.2 Distributions of Target Data by Department

#	Information	Expected Resource	Referred Resource	Alternative Resources
1	Sovereign Immunity Issues	Legal Agency		None
2	Claims Procedures	Risk Mgmt.		None
3	Lawsuit Procedures	Legal Agency		None
4	Contractor Indemnification	Legal Agency, Risk Mgmt.		None
5	Insurance Policies & Issues	Legal Agency, Risk Mgmt.		None
6	Training	Legal Agency, Risk Mgmt.		None
7	Risk Mgmt. Structure	Risk Mgmt.		None
8	Claims Statistics	Risk Mgmt.	Limited Content:	None
9	Lawsuit Statistics	Legal Agency	Limited Content: Legal Agency	None
10	Attorney Statistics	Legal Agency	Limited Content: Legal Agency	None
11	Injury Characteristics	Legal Agency	Limited Content: Legal Agency	State Police Accident Report, DMV
12	Highway Characteristics	Legal Agency	Limited Content: Legal Agency	Hgwy Engineering, BTS
13	Accident Statistics	Legal Agency	Limited Content: Legal Agency	State Police Accident Report, DMV
14	Driver Statistics	Legal Agency	Limited Content: Legal Agency	State Police Accident Report, DMV
15	Vehicle Statistics	Legal Agency	Limited Content: Legal Agency	State Police Accident Report, DMV
16	Highway Statistics	Legal Agency	Highway Engineering	State Police Accident Report, DMV
17	Employee Statistics	Risk Mgmt.	Risk Mgmt.	None

The agendas established for state interviews and system surveys were based upon assumptions derived from the preliminary research. In the course of conducting the interviews and surveys, it became apparent that more time and labor than was anticipated was required for identifying relevant content, and later analysis and normalization.

Legal departments have not been traditionally driven by statistical data, and consequently have the least experience with and utility for using computer-based systems for more than electronic record

keeping. The legal information systems could be compared more to a giant electronic filing cabinet, rather than an informational tool for manipulating and processing outcome-based statistics. Therefore, it was not surprising to find that the greatest variation in computer-based tools used to process information was within legal departments. This variation ranged from simple word processing to full-blown database implementation. The database structures tended to be narrow and specific to the legal processing of claims with minimal fields for indirect, but related information. The systems proved to be adequate for internal needs, even if underutilized. The legal data will require the most significant time and cost to analyze, normalize, and translate for a national system. Further research will be required to discover all subordinate agencies that can contribute source information required to calculate the core data elements.

The risk management departments are more dependent upon statistical information, therefore the systems tend to be more standardized and designed for analysis and decision making. Risk management departments that serve as the administrative body for tort filings often had the fields for pertinent legal data built into their own systems. The legal data fields within risk management systems appeared to have a higher ratio of completed data fields than independent legal systems. Risk management seems to be the pivotal group for legal and traffic operations departments from an information and management perspective. The services provided to both departments by risk management could be greatly enhanced with a functional blending of legal and traffic operations information. The proactive nature of risk management and the need for response and planning made it a rich environment for software developers, and it is here that the majority of proprietary software is found. The level of technical expertise and understanding of the software varied with each state's support staff, which directly affected the research team's ability to perform a thorough data analysis and field identification process. Since risk management departments were historically more efficient at making use of computer technology for administering information, they appeared to have stronger technical support. Surprisingly, the risk management data did not directly support a significant amount of the core data elements in the model system either.

The standardization issue is not limited to legal and risk management departments. A quick Internet search of federal highway agencies and organizations reveals a great deal of activity and debate over standardization in many areas of transportation. Nonetheless, directing this pilot and any future efforts toward the creation of a uniform standard for data is a must to realize valid and meaningful data

comparisons. The research team believes that an evolutionary process of coding and analysis applied to the cumulative data pool of participant states (dynamic standard) could eventually result in a fixed and uniform data standard. As new states are added to the system, their information would be added to the process of identification, verification, and inclusion to the standard coding structure. The process would require no alterations to the individual state systems. However, as state information systems transition in functionality, adoption of standardized elements could occur gradually during regularly scheduled maintenance and upgrade operations. The current process of standardizing information for the model system relies heavily on manual normalization of data and a mapping process that links the normalized data to the core data elements. A national implementation of the data-management system should make every effort to focus on data from traffic operations and state highway patrol departments. Including the data from these departments and adding a common identifier to data files could provide a complete picture of a tort claim from accident to litigation, obtained with a few “clicks” of the mouse.

An alternative to developing a uniform standard is to adopt an external standard code tool from a third-party entity, such as the Public Risk Data Project’s “Cause of Loss Codes” used to code claims by the alleged causal factors. The PRDP project has gained popularity with about 10-20 proprietary software vendors, such as Dorn Risk Master, which have incorporated the Cause of Loss Codes into their software. This is the same tool used to design the structure for the Highway Deficiency component of this model system. The down side to this initiative is imposing a foreign structure upon the data entry and processing scheme that would require significant changes to a state’s internal systems if they are not already using one of the proprietary software vendors. The number of states reporting use of the proprietary software is minimal. However, PRDP recently made two announcements that may make it a viable partner for further development of a national system: a new version of the loss code tool that includes worker’s comp cause codes and permission for vendors to acquire the visual basic source code and object code at no cost for incorporating it into their software. Based upon the value of being involved in PRDP’s Data Exchange, there is no reason why these tools could not be assimilated into a national system.

A key function of the data-management system that has not been addressed is the potential for states to access and manipulate the collected statistics from each of their departments in a more dynamic manner. The ability to maintain state statistics separately and in more detail than what would be

displayed in the overall reporting mechanism was a topic discussed at the conclusion of Phase I and the beginning of Phase II. Unfortunately, this level of functionality could not be constructed using the vertical table structure currently in place. However, reconstruction of the model system's core data environment can provide that functionality and even provide a reverse translation process for bi-directional data transfer from state system to model system and back again. Access to this level of detail would be secured for the individual state only. In effect, the state could achieve an interdepartmental database without the disruption and cost of having it done within the state's information systems.

Design Criteria and Outcome

The proposal to create a direct network connection with each pilot state was quickly abandoned due to extreme opposition from the states. The primary reason for rejecting a direct connection between the state's network and the data-management server was the concern for network security. Many of the states keep their own internal network systems or individual computers that host claims information secure from external access, and were not open to any type of linking to their systems. The concerns were legitimate and warranted, especially with the rise of recreational hackers and the ability to download intrusion programs from rogue web sites. The use of removable media (CD-recordable disk, zip disk, tape backup) or an FTP transfer requires minimal time and effort on the part of department staff and serves the need of data input quite well. It also makes the data easier to verify for content and validity, since is packaged in its own file. A fully automated process would require that the validity and integrity of the data be checked programmatically and require more development and programming time. In the short term, manual conformation and assimilation of a state's data into the system would be more cost effective, but long-term operation of a national system would require a programmatic function to take care of this process.

The technology used for this project was selected on the basis of function, familiarity, support, and future potential. The operating system and hardware performed exceptionally well and offers long-term functionality for use of this system in a national system. The database software proved to be problematic for the type of expertise that was available, since it did not offer the ease of use that it claimed. The database program was the only component used out of the entire suite of products. The manner by which the web development software (Cold Fusion) pulls information from a database

permits the use of even the simplest relational database program to be used in a database-driven web site. The Foxpro database was more than adequate for this project. The programming requirements for functions and processes were accomplished within the program or batch programs written in C+. This development approach makes the system more “open source” and scalable since it is not strictly limited to the vendor’s design and internal functions. The costs of programming support are justified by the utility of the system and minimal restriction of vendor support and licensing agreements. Future administration will be easier for any entity that might host the system, since basic programmers and a little training in the web application software should enable them to fully administer the system. Based on growth of the system, transition to an enterprise-level database system would be simple.

Though the research team was not able to realize the full potential of the model system envisioned in the work scope within the allocated time and budget, enough of the system was completed to demonstrate the potential of a web-based information resource and data-management application for collecting and disseminating tort claims information to serve a host of clients. The current functionality of the model system offers the ability for states to enter aggregate information directly into a single horizontal table. The entry forms were originally meant to offer states that depend on a paper information system a simple way to get their information into the model system. For states that provide electronic data files, the entry forms would be customized to accept only the information that could not be retrieved electronically. The model system transfers the data from the horizontal table to the vertical tables once every 24 hours, so that comparisons can be made with other states that have manually entered their aggregate information in the same manner. The display function allows users to sample four different reporting mechanisms: a summary-at-a-glance report for two to five states on one category, a two-to-five-state comparison of one data category for a single year, a one-state comparison in one category for three years, and one state in two categories for a single year. The site includes a component that can collect a state’s expert witness and testimony information as formatted by each state and make it searchable by “key word,” which includes dates, case number, and any other non-alpha character description that states include. The search component is very versatile, permitting broad or very specific searches through the use of operators, such as “and”, “or”, “<” and “>”. The site offers an information exchange tool called a Discussion Forum or Bulletin Board that users can access to make announcements, ask questions, post documents, carry on a long-term discussion or debate over any related topic, etc. There are a number of uses for this component, limited only by the users. Finally, the

site offers a component that lists links to other web sites that provide information related to topics addressed in the overall site. The inclusion of this component demonstrates that the site can provide a venue of legal, risk management, and highway operations information resources.

The state agencies maintain electronic files that support accident, injury, highway, and engineering topics addressed in the AASHTO study, but a significant amount of claims and risk management data fields that support a direct association with the core data elements is either not present or not being populated. A short-term solution for the lack of data content found in the legal and risk-management agencies could be the completion of a web-based form once each month. The form would be customized to supplement the state's electronic data file and would require no more than 2 person-hours each month. States operating electronic information systems would have an easy and uniform method of providing legal and case management statistics. States using predominantly paper-based systems will use the full-fledged data entry forms within the website to enter all the desired information. All other data could be accessed from electronic files maintained by the state electronic information services or the department of motor vehicles. For instance,

- All 50 states prepare information for the Fatality Analysis Reporting System maintained by the Bureau of Transportation Statistics. These statistics are a subset of the DMV's database. The DMV is the central repository for accident data including highway defect data, vehicle statistics, driver statistics and initial injury information.
- All 50 states prepare data for the *Highway Statistics Report* published by the FHWA. Highway statistics were used in several calculations appearing on the website.
- All states publish a directory of information services executives.

A number of transportation-related organizations exist that could benefit from an initiative to capture comparable legal, highway, accident, injury, and driver statistics. Federal and state policy makers would also benefit from the identification of regional and national trends related to vehicle performance, highway user behavior, and environmental conditions. Security and

flexibility are the keys to state participation: states are more likely to agree to participate in the project if three conditions are met:

- The data are secure from non-authorized access or review;
- Minimal project support is needed from state personnel; and
- Maintenance of a data system will accommodate transitions in the information system of that state.