An Exploratory Study of Best Practices for Implementing Integrated Justice Systems: Comparing the Perceptions between Administrators of Failed and Successful Implementations

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ABSTRACT

This paper is an exploratory study to determine best practices for implementing local integrated justice systems. Local integrated justice systems have become increasingly important in local governments as administrators seek ways to improve the criminal system processes with a goal of increasing efficiency in processes to reduce costs while not compromising public safety. Unfortunately, current implementation results have been mixed, at best. This study compares the perceptions of the best practices of justice system administrators of failed systems to those of successful systems. This study contributes new knowledge to the government information systems development and implementation by providing a quantitative analysis of best practices rather than anecdotal information.

INTRODUCTION

During the last ten years, electronic information has had a dramatic effect on commerce and popular culture. The justice system is affected by these societal forces in the way it is expected to process information and respond to a new age of criminals and crimes. To meet citizens' demands today, justice agencies system must apply current information technology capabilities to the justice process itself. This challenge is often described as "integrated justice:" the ability to apply technology to improve information management and sharing between justice system agencies at all levels of government [OJP 2000]. Integrated justice has been the focus of several initiatives including the Federal Attorney General's Global Information Network Committee and the national Office of Justice Programs. Typically, the agencies involved with justice include the

County Attorney's office (prosecuting attorney), an indigent defense office (defense attorney), Sheriff/arresting agency, a Court system, and a juvenile services agency which may include the local school districts (Anonymous, 2003) The agencies share their data, but not electronically. The most common method for sharing is to provide the other parties with paper documents where pertinent data is re-entered at the receiving agency. Each time the data is re-entered, the opportunity for errors in critical case tracking information increases. Given the desire to link data from the local to the federal level to better manage and capture offenders, it is no wonder that justice agencies, particularly at the local level, are under increasing pressure to find ways to overcome the difficulties in sharing information. Doing so not only increase their ability to solve crimes and keep communities safer but it also helps them meet their responsibility with limited time and resources.

And as an integrated justice system implementation becomes a necessity rather than a thought, administrators desire to increase their chances of success, where success is defined as data being entered at the right entry point at the right time and made available to all agencies dependant on the data in a timely fashion, and for the sharing of data to be accurate to improve all the agencies' decision making processes and other business processes. How administrators can lead successful implementations – what best practices they should use – is the focus of this study.

BACKGROUND

Integrated systems are systems that rely on a single database to store required data that is then accessed by various end users to meet their functional needs. Ideally data is defined once, entered once at its source and stored once in the database. [www.uh.edu/fast/FAST-glossary.htm] An integrated system generally has the following characteristics: [www.uh.edu/fast/FAST-glossary.htm]

- shares a common data model
- has a common definition for every data element
- has a single collection point for the data
- has data that is available universally throughout the system
- has a consistent naming convention for data elements
- has a common data dictionary
- transfers derived values between modules
- requires minimal if no reconciliation between modules to ensure data integrity
- shares code
- shares business rules
- has consistent headings on screens and reports
- has consistent navigation, look and feel for screens and reports
- has a single authentication process where users enter a user identification and password once to access all authorized components of the system
- has a single security and administration point

Integrated justice systems began to emerge in the late 1990s when the Office of Justice Programs (OJP) recognized that as state, local, and tribal governments forged ahead with the development of information sharing architectures, the OJP office was presented with an opportunity, through

the efficient, coordinated, and targeted use of grant funds, to assist governments in achieving a integrated justice systems to better support local and national law enforcement endeavors [http://www.ojp.usdoj.gov/archive/topics/integratedjustice/ag-draft.htm#integration].

Since that time, over 500 local governments have attempted to develop integrated justice systems [http://www.ojp.usdoj.gov/archive/topics/integratedjustice/ag-draft.htm#integration] so that governments could benefit from improved data collection and access. Justice agency personnel in virtually all 50 states have long been hampered by a lack of real time, detailed information about defendants in the system and continue to seek ways to maximize the benefits of an integrated system. (Gattin, 2003) These benefits include the elimination of duplicate data entry, immediate access to accurate and time sensitive data, and streamlining information sharing among the county's disparate criminal justice databases. Further benefits include scalable solutions to support future growth as well as a better coordinated communication system between and among agencies (Anonymous, 2003). Despite over 500 attempts at implementation, and with all state and local governments under pressure to develop some type of integrated system to support national level criminal justice or cross-boundary criminal justice efforts, implementation results of integrated systems have been mixed, at best. And unfortunately, these systems usually cost tens of millions of dollars and take years to deploy. (Gattin, 2003)

This study attempts to identify critical practices to improve the chance of success by analyzing justice agency administrators' perceptions of best practices for implementing integrated justice systems. This study is distinguishable from other best practice studies in that it measures and compares what public administrators who have completed an integrated justice implementation perceive as best practices rather than provide a case study of a particular successful implementation or anecdotal information regarding a successful development and implementation process (Davenport, 1998). The topic is of particular relevance today as justice agencies are under increasing pressure to collaborate and cooperate in data sharing to improve the justice process. In doing so, government officials face significant challenges not often faced by business and industry such as a workforce protected by civil service laws and financial resources that are open to constant public scrutiny. Hence, identification of consistent and credible knowledge of best practices for integrated systems implementation, particularly for local governments, could have broader implications beyond justice systems.

RESEARCH STUDY

The purpose of this study was compare user-perceptions of best practices for successful systems implementations from groups with failed implementations against results from groups with successful implementations, where failed implementations are defined as systems that were developed and implemented but were not adequately used by the personnel responsible for the data entry, and successful implementations are defined as systems that were implemented. The hypothesis is that both groups would agree on the practices that were used (in the case of the successful implementations) or those that should have been used (in the case of the failed implementations) to improve the likelihood of successful implementation.

The study participants consisted of justice system administrators at the county level from across the United States. Justice system administrators typically include presiding judges, sheriffs,

administrative attorneys for prosecuting offices and administrative attorneys for defense agencies as well as social service agencies serving juvenile offenders. They occupy leadership positions that are considered critical to the integrated software implementations (Anonymous 2003).

Surveys were sent to the equivalent of a presiding judge of the Superior Court of 100 counties randomly selected from counties with populations greater than 100,000 that were listed with the Office of Justice Programs as having applied for or received an integrated systems grant under the integrated systems initiative. The survey was sent to the judge with a request to share a copy of the survey with his or her partner administrators in the arresting agencies, prosecutor's office, indigent defense office, the other courts, and the information technology managers. The survey requested the administrator to self-report if the implementation was a success or failure, identify the group with which the administrator most closely identified, and then respond to twenty-seven (27) statements to which survey participants were asked to indicate their degree of agreement or disagreement of importance to a successful integrated system implementation using a Likert-type scale (See Appendix A for best practice statements used in the survey). The respondents were also asked to comment on the implementation process, specifically what they would have changed and what they would have repeated (lessons learned), and any failures either from the entire implementation process or from his or her respective agency.

The twenty-seven (27) survey questions were gleaned from current literature on software implementation best practices (Scheer et al, 2000; McGredie et al, 1999; Parr et al, 1999; Frants et al, 2000) and from the lessons learned listed on www.search.org. The questions from the literature were modified to cover topics relevant to integrated justice software implementations and were validated by agency administrators who had implemented an integrated system within the past five years but were not potential participants in the eventual survey. The team of five narrowed the best practice statements from 33 statements to the twenty-seven included in Appendix A.

The original survey was numbered to allow for the tracking by county and its responses from the various administrators. The mailing returned 164 surveys from 38 counties. Surveys with the same number but different responses for successful or failed implementations were eliminated as well as responses that did not indicate a particular administrative group. Also, surveys from agencies dealing with juvenile issues were eliminated due to the small number of returned surveys as compared to the other administrative type groups. Counties with only one response were also eliminated. The eliminations resulted in a usable sample size of 134 responses from 31 counties. Nineteen of the counties reported failed implementations; twelve reported successful implementations.

SURVEY RESULTS

The purpose of the study was to determine if groups implementing successful integrated systems perceived the best practices the same as the group with failed implementations. The hypothesis is that both groups would score each statement similarly because failed implementers could identify what went wrong and the successful implementers could identify what worked well. To test the hypothesis, a t-test for two samples assuming equal variances was run for each statement. The hypothesis was that mean scores for each group would be similar with small variances

between the scores. This assumption meant that administrators with successful implementations could identify those practices that were important to their success and those with failed implementations could identify the practices that they felt could have made the implementations successful. The groups had an unequal number of responses. To equalize the sample sizes, a random selection of 50 respondents was selected from each group. The means for each group and the resulting p-value for each statement are listed in Table 1: Mean Score, Variance and p-Value for Each Statement for Each Statement by Group.

	Mean Score		***Variance***		
Statement Number	***Successful***	***Failed***	***Successful***	***Failed***	***p-Value***
1	3.10	3.40	0.25	0.28	0.08
2	3.20	3.20	0.11	0.69	0.71
3	3.72	3.80	0.98	1.06	0.69
4	3.86	3.80	0.94	0.94	0.76
5	3.60	3.14	1.28	0.36	0.313
6	3.10	3.10	0.61	0.36	1.00
7	3.78	3.68	0.44	0.50	0.73
8	3.78	3.78	0.44	0.44	1.00
9	3.50	3.40	1.03	0.53	0.79
10	3.78	3.78	0.44	0.44	1.00
11	3.60	4.20	1.02	0.44	0.11
12	4.10	4.28	0.58	0.49	0.22
13	3.76	3.90	0.92	0.79	0.45
14	3.96	3.96	0.61	.61	1.00
15	4.02	4.08	0.75	0.77	0.73
16	4.40	4.50	0.28	0.53	0.71
17	4.10	4.40	0.61	0.75	0.57
18	4.00	4.00	0.75	0.25	1.00
19	3.10	3.10	0.61	0.86	1.00
20	3.30	3.58	0.75	1.53	0.66
21	4.70	4.70	1.00	0.75	1.00
22	3.90	4.10	1.36	0.36	0.62
23	3.10	3.10	1.61	0.11	1.00
24	3.00	3.10	0.50	0.11	0.68
25	4.60	4.60	0.25	0.50	1.00
26	3.56	3.22	0.53	0.69	0.38
27	3.78	3.78	0.69	1.19	1.00

Table 1: Mean Score, Variance and p-Value for Each Statement by Group

Based on the mean scores, statement 21 was scored highest by both groups, followed by statement 25, 16, 17, and 12 respectively. The variances between the scores were also similar with high p-Values. Both groups agreed that the governing body should endorse (statement 21) and should provide a separate budget (statement 25) for the project. These responses corroborate other research indicating that senior management's backing is a key project component [3, 6, 8, 9]. The qualitative responses also validate the scoring as ten of the responses from the failed implementations listed having a separate budget for the project as one of the practices they would perform differently. Although several reasons were listed, four of the responses indicated that when the budget was integrated into the regular budget, they would re-allocate the funds for

other purposes when needed, severely hindering the progress of the project. Also, by re-allocating the funds, one administrator acknowledged he sent message to his staff that, "the project was not important." When his project was finally completed, the staff did not use the system, instead continuing to rely on the old ways of doing business.

Both groups ranked low the statement regarding early initiation of the data conversion process, which contradicts Frantz's (Frantz et al, 2002) advocacy of early and frequent data conversion. Data conversion is expensive and financial constraints may prevent realization of this best practice. For example, many of the agencies that participated in this survey had legacy systems, with three agencies using a Wang system from the 1980s. To extract data from the system required calling a consultant who is available infrequently and at a very high cost. Thus, it is likely that administrators are reluctant to commit resources to data conversion until later, when system specifications have been finalized.

An interesting and seemingly inconsistent ranking was found in statement 1: "Agency senior management leadership is critical …" The respondents found it more important for the Board of Supervisors or Commissioners to show leadership rather than the agency administrators. This could be explained by the government management process in which, if the governing agency doesn't provide the resources for the project, then the project has less of a likelihood of being successful. While agency senior management leadership is important, the perceptions from the survey could be interpreted that the design and deployment of the system required less leadership than expected but more support from the governing body in terms of public support and resources.

All the mean scores were at least 3.10, indicating that regardless of implementation outcome, respondents tended to agree all the statements are important to the success of the project, in varying degrees.

QUALITATIVE ANALYSIS

The data collected attempts to measure the difference in perceptions about best practices between justice agency administrators of failed and successful integrated justice systems implementations. In addition to the Likert-scaled questions, respondents also were asked to discuss what worked and what they would do differently (lessons learned). An analysis of administrators of successful implementations showed the following common comments:

1. Significant changes in business processes necessitated a change in the operational culture. Specifically, data entry positions in some of the agencies were eliminated through attrition or by moving the positions to those agencies that had a "first point of entry" of data. These "first point of entry" agencies are the courts and the arresting agencies.

2. Through the elimination of data entry positions, new (and fewer) positions were created for the specific tasks of providing analytical support to the agency administrators or building local systems to improve other functional processes within the organization.

3. The electronic sharing of data improved the time between establishing indigence, providing a court appointed attorney, and less time for some offenders behind bars.

4. The sharing of data provided more accurate information regarding how much time the prosecutor had before a case was dismissed due to lack of filing an indictment. It also reduced the number of conflicts arising due to not knowing the real identify of the defendant!

The successes did not come without challenges. One county administrator acknowledged that the hardest challenge was with the employees who had been with the county the longest. Those employees questioned every move and did no more than their original job description that oftentimes meant maintaining manual records. These staff members *had* to be moved to other agencies or functional areas within the county; "otherwise we would have just had yet another IT project that just sat there." Lack of knowledge about hardware requirements delayed some implementations. One county administrator admitted their County IT Officer claimed that each county building had been wired for network connectivity when in fact the buildings were not. Other challenges included knowing how long the implementation would take and finding funding for new positions created as a result of the implementation and the staff to fill them who had the skills to maintain the new software. Most of the programmer-type employees in the counties in this study are procedural programmers and the software most counties chose for the integrated system was object oriented. The learning curve, even among those with training, was high for the current employees. Many of the counties also had a salary cap for new employees below the market rate for new programmers, making it difficult for the counties to attract *and keep* highly motivated and well qualified new employees. Thirteen of the counties reported high turnover among the new staff which is consistent with current government studies found at www.nga.org of IT professionals who are hired below market rates. To reduce the turnover, four of the counties advocated for and won new position categories with the skills required for the new programmers, providing them with comparable market compensation. This marked a significant change in most of their human resource operations. The county administrators found themselves reviewing most all the positions for current market pay and having to adjust other salary ranges, which also increased the overall budget.

Further, the one consistent message from all the groups regardless of implementation experience was the need for the teams as well as the administrators to be trained in team building and collaboration. Available resources for training were generally scarce in most counties in the study, as human resource development is not a priority. One county judge admitted that he insisted that funds be provided for staff training at his budget meeting with the supervisors.

CONCLUSION

The survey response rate indicates interest in sharing and learning about integrated justice system implementation best practices. The response rate across agencies is also an indication of this interest. These best practices can represent the beginning of a common ground of practices that counties can use to inform future agencies of the challenges and hard decisions that must be made to improve their overall justice system practices. There are many stories about failed

government software implementations, with a number of reports running in the local paper about tax dollars wasted on inadequate systems that were designed and then not used. Government institutions do not have the resources to cushion themselves from failed implementations, so administrators would benefit from further research to discover what works best.

This study represents a beginning. The current data that has been collected requires further corroboration between the qualitative comments and the survey rankings. Correlation studies need to be performed for significance between and among variables and among groups by administrative type as well as county size and justice system complexity. More qualitative and quantitative data needs to be collected, analyzed and tested from as many and different types of counties as well additional information about the type of systems that are working best and the challenges of the data sharing. For example are the counties using a wide area network and if so, what are the advantages over using an intranet? What security challenges are they faced with or did they face with personal information? How did they resolve issues such as conflicts between what agencies wanted and what other agencies were willing to share? What types of trainings proved best? And when training was not availed, how did the team cope to be successful? Did one type of development environment prove more successful than others? The next steps for this line of research is to extend the survey to answer these questions, learn the differences between implementations in larger counties versus smaller counties, compare perspectives of administrators before, during and after a development process, and compare results across size and rural versus urban communities.

APPENDIX A

Best Practice Statements Used in Survey

1. Agency senior management leadership is critical in designing and deploying an effective integrated criminal justice system.
2. Senior leadership should be actively involved in both the creation and implementation of the integrated criminal justice system.
3. The involved agencies should have a clear and articulated vision, mission and goals for the integrated criminal justice system.
4. The agencies need to have a coordinated, clear and cohesive system framework that is understood by all levels of all the affected agencies, and that supports the objectives and goals of all the agencies.
5. Outside consultants can facilitate the development and implementation efforts.
6. The agencies involved with the development and implementation efforts should maintain ownership of the development and implementation process
7. Effective communication with all employees and stakeholders is vital to the successful development and deployment of the integrated criminal justice system.
8. Accountability for results must be clearly assigned and well understood for the project team.
9. Accountability for results must be clearly assigned and well understood for the affected agencies.
10. The integrated criminal justice system must provide intelligence for decision-makers, not just compile data.
11. The system development and implementation responsibilities should be shared between the County's centralized information technology department and the different agencies where the software will be used.
12. The project team should represent all agencies where the software will be used.
13. It will be necessary for each agency to change its administrative processes to fit the software.
14. Project team members' normal job responsibilities should be reassigned to other employees for the project duration.
15. The senior management teams of the affected agencies should ensure the project team has resources to network with peers at other institutions undergoing similar development initiatives.
16. A project manager should be assigned full-time to the development and implementation.
17. Employees should receive training on how to work as a team on a project before implementation begins.
18. A separate, dedicated work environment specifically created for the project team aids the development and implementation efforts.
19. A rewards and recognition program should be linked to each agency's performance during the implementation process.
20. The implementation process should be positive, not punitive, that is, performance measurement serve as learning systems that help the agencies identify what works and what does not so as to continue with and improve on what is working and repair or replace what is not working.

21. The Commissioners or Board of Supervisors should endorse the integration project.
22. Results and progress toward program commitments should be openly shared with employees and the board of supervisors and commissioners.
23. Results and progress toward program commitments should be openly shared with the public.
24. Conversion of data from the old software system to the new should begin early in the implementation process.
25. The project should have a clear and separate budget not integrated into the agencies' regular annual budget.
26. The project implementation's oversight team should include the administrators of the affected agencies.
27. The Commissioners or Board of Supervisors should be aware of potential organizational impact on the county's criminal justice agencies that will result from the implementation of an integrated criminal justice system.

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