

Interorganizational Information Integration in the Criminal Justice Enterprise: Preliminary Lessons from State and County Initiatives¹

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Abstract

Traditional governmental structures have organized the capture, use, and management of information along agency lines. These “information silos” are not very useful in a dynamic environment. Information integration is considered one of the most significant ways to change the structure and function of public organizations. It has the potential to support the transformation of organizational structures and communication channels between and among multiple agencies working in different locations. This article contributes to this knowledge-building effort by examining the factors that influenced the success of selected criminal justice integration initiatives. Useful integration strategies are also identified.

1. Introduction

Information integration is considered one of the most significant ways to change the structure and function of organizations. In its most simple conceptualization, information integration allows managers to work at the same time, with the same information drawn from multiple disparate sources. It has the potential to support the transformation of organizational structures and communication channels between and among multiple agencies working in different locations. The question remains, not whether we should invest in integration initiatives, but which initiatives should be pursued and what barriers must be overcome in order to be successful?

Information sharing and integration is a relatively new challenge for public agencies. Traditional governmental structures have organized the capture, use, and management of information along agency lines. Overcoming these deeply entrenched program and information “silos” is a particular challenge agencies face as they pursue the benefits of integrated information. Justice agencies, in particular, need to share information in a timely and effective way in order to secure public safety. As a result, a number of efforts within the justice community are seeking to build knowledge and understanding about information integration. This article

contributes to this community-wide knowledge building effort by examining the factors that influenced the success of selected criminal justice information integration initiatives.

2. Information Integration

Understanding the objectives and the benefits of any particular integration initiative is necessary to the identification of barriers and the development of strategies for overcoming those barriers. The following sections present two frameworks for expressing the objectives of an integration initiative and a set of categories to support the identification of benefits.

2.1. Integration Objectives

Not all integration initiatives are the same. Some focus on a specific problem while others focus on building systemic capacity. Table 1 shows one way to classify integration initiatives in terms of their focus and the associated level of organizational involvement. Without oversimplifying the important factors contributing to the success of an information integration initiative, there seems to be a logical progression of complexity. It should be clear that there is not a completely linear complexity continuum between A and F. Specific characteristics of the initiatives such as the number of participants or the institutional framework will influence the final result.

However, in general terms these two dimensions helped to understand the kind of challenges that are being faced. For example, an inter-governmental initiative with a focus on building systemic capacity can be generally understood as more complex than an intra-organizational initiative focusing on a specific need or problem. Most of the cases selected for this report can be identified as being in cells D, E, or F. Therefore, they are considered initiatives that involve high complexity. Therefore the way they have overcome different challenges provides valuable lessons for similar and less complex information integration initiatives.

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Initiatives can also be classified based on the objectives of their integration: comprehensive, incremental, and selective. These groups are not mutually exclusive – initiatives categorized as comprehensive can have some characteristics of selective or incremental strategies. In fact, many counties and states have complex initiatives with a mix of comprehensive, selective, and incremental components. In addition, some initiatives start as selective or comprehensive and become incremental due to the changing nature of the technology and the needs of the justice community.

Table 1. Types of integration initiatives

Organizational Level	Focus on meeting a specific need or problem	Focus on building a systemic capacity
Inter-Governmental	E	F
Inter-Organizational	C	D
Intra-Organizational	A	B

Comprehensive integration initiatives attempt to integrate information from many different organizations and levels of government. They are the most likely to be both inter-organizational and inter-governmental in nature and typically involve building systemic capacity rather than solving a specific problem. The Colorado Integrated Criminal Justice Information System, initially developed over a four-year period, is an example of such a strategy.

Selective integration initiatives integrate information in certain areas or types of organizations (e.g.: courts, law enforcement, etc.). Normally, these projects attempt to gather information about one function from different levels of government. However, some times the projects focus on different functions in the same level of government. The Oklahoma Offender Data Information System (ODIS) which is focused on managing the state’s law enforcement agencies’ data, is an example of a selective integration initiative.

Incremental integration initiatives take a gradual approach to developing information integration in a limited number of organizations and levels of government, typically pursuing a more comprehensive information integration project in the long-run. An example is Harris County’s (Texas) Justice Information Management System. This system has been in place for over 20 years and the plans for system enhancement extend well beyond basic law enforcement and court procedures to include open warrants, address records,

pawnshop data, gangs and gang members, and vehicle registrations.

2.2. Integration Benefits

As Dawes [8] points out, information integration, as well as information sharing, offers organizations a greater capacity to share information across organizational boundaries, to discover patterns and interactions, and to make better informed decisions based on more complete data. Bellamy [3] adds that information integration in the justice enterprise can lead to improved safety and more coordinated justice services. Decentralization, improved decision making, high quality services, empowerment, and greater productivity have been mentioned as potential gains from information integration projects. Increased productivity, improved decision-making, reduced costs, increased revenues, and integrated services [13, 15] have been identified as positive results as well.

Understanding the type of information sharing being pursued and the challenges associated with achieving the stated objectives is important to understanding the benefits that organizations can expect to realize. The benefits realized from information integration differ from organization to organization and according to characteristics of specific projects. However, there are certain types of benefits that can be expected in almost any information integration or information sharing initiative. Dawes [8] classifies these benefits into three categories: technical, organizational, and political.

Technical benefits are those related to data processing and information management. Caffrey [5] notes that information integration reduces duplicate data collection, processing, and storage and therefore reduces data processing costs that attend every public program. An information integration initiative can also promote better standards and shared technical resources.

Organizational benefits are related to the solution of agency-wide problems or the enhancement of organizational capabilities. Improving the decision making process, broadening professional networks, improving coordination, increasing the quality of services, and reducing costs are some examples of organizational benefits [16, 2, 15].

Political benefits might include better appreciation for government-wide policy goals, more public accountability, more comprehensive public information, integrated planning, and service delivery are some examples of this kind of benefits [2]. According to Jane Fountain [11], political benefits can also be considered as individual benefits for public officials as a result of the use of specific technology characteristics or applications.

Despite the tremendous benefits, information integration, like many other IT-related initiatives, presents organizations with tremendous challenges. Those challenges result, in large part, from the reality that

integrating criminal justice information involves, ultimately, large parts of, if not the whole criminal justice enterprise. This is made even more challenging by that fact that these enterprises differ so greatly among states and localities. Those involved in justice integration initiatives must be aware of the differences and the implications of those differences as they look to their colleagues for guidance and best practices. This study provides insight into some integration objectives, strategies, barriers, and current practices. It presents along with those insights, case information so that the insights shared can be considered in their original context and then explored, by potential adopters, in terms of their own environments.

3. Barriers to Achieving Integration

A review of the academic and practitioner literature identified four key categories of barriers to information integration. Experience and research shows that any single initiative is faced with a myriad of highly interdependent barriers, and as a result integration teams must employ multiple strategies to overcome these barriers. The cases illustrate a number of examples where integration teams adopted strategies to mitigate the impact of each barrier as well as the cumulative effect of multiple barriers. This section presents four integration barrier categories.

3.1. Turf and Resistance to Change

Among the barriers to information sharing at the organizational level are turf as a form of resistance to change, integration experience, and technology acceptance [4, 12]. Most of these barriers are recognizable at the organizational level and in many cases represent either decision-makers interests or characteristics of the organizational culture and structure.

As a form of resistance, turf seems to be a strong barrier to information integration initiatives. According to Cresswell and Connelly [7], the concept of turf seems to include at least three major reasons organizations act defensively: (1) to avoid the costs of change, (2) to reduce or control risk, and (3) to preserve autonomy or protect the organization's position in a competitive or adversarial environment. Turf can be conceived of as a personal or organizational problem, and it refers to the defense of status, power, or other resources that may be at stake for individuals in any particular integration initiative

3.2. IT and Data Incompatibility

Known as technical, technological, or information-system barriers, these barriers are mainly related to incompatibility or specific complexity of hardware,

software and telecommunications systems [5, 6, 9]. Another source of problems in information integration initiatives are mismatched data structures and incompatible database designs [1]. Information technology and data incompatibility are challenges that can diminish the potential positive effects of information integration. Minimal uniformity and consensus on data, infrastructure, and procedures, as well as shared decision making, are necessary to achieve most integration objectives [7]. However, as Dawes [8] suggests, even when the organizations involved use the same kind of data, sharing often remains problematic due to conflicting data definitions. Reliability and compatibility of the data are necessary to foster an environment in which organizations are willing and able to integrate.

3.3. Organizational Diversity and Multiple Goals

Organizational diversity and multiple goals can be considered primary organizational barriers. Dawes [8] establishes that "given the diverse costs of information sharing, it is probably unreasonable to expect an organization to share its information resources without an expectation that it will gain internal benefits, improve its public image, or expand its influence over others"(380). Conflicting organizational goals and priorities are also significant barriers for any collaborative IT project [9]. Meyer and Gardner [14], as well as Chengalur-Smith and Duchessi [6] have identified other organizational characteristics such as centralization, organizational culture, strategy, and size, as important factors of success.

Building trust and collaboration across agencies with very diverse and, in some cases, competing goals, is a challenge many integration initiatives face. On the one hand, the Justice community is formed not only by multiple agencies, but also by multiple levels of government, and by complex interactions between these different branches and levels of government. This particular situation increases the difficulty of integration projects. On the other hand, professionals from different organizations might see the same problem in different ways, if these different perspectives are sought after and used to inform integration decision making. Organizational culture shapes the way people deal with problems and how they make certain decisions. In general, each of the states and counties has developed its own strategy to overcome organizational diversity and differences among the organizations participating in their integration initiatives.

3.4. Environmental and Institutional Complexity

These barriers relate to the political complexities of every governmental system. Some examples of these barriers are [8]: (1) external influences over the decision-making process, such as legislative committees, interest

groups, civil servants, and other governmental jurisdictions like local governments; (2) the power of agency discretion, that refers to the capacity of high level bureaucrats to influence the programs and policies; and (3) the primacy of programs, that reinforces vertical connections and disincentive collaboration among agencies.

These barriers result from the structure of the American political system. The United States government is based on independent branches of government with shared powers. Organizational and regulatory frameworks are established for supervision and control between branches and not for cooperation among them [10, 11]. Thus, the criminal justice system involves organizations from at least two government branches (executive and judicial). Successful projects must find ways to avoid institutional impediments and work collaboratively towards a common or shared objective.

4. Method

The results of this study are based on a review of relevant research, case studies, and other materials related to information integration in the criminal justice enterprise. Case study techniques were used to collect and analyze data needed for the research [17]. This study draws on published materials on integration initiatives, obtained by searching both print and electronic sources. Additional and updated information was gathered through structured interviews with participants from selected initiatives.

The data collection was performed in three stages. First, a comprehensive review of available material on information integration initiatives was performed. Second, from this initial review the research team identified several important factors and selected three state initiatives and three county initiatives as main case studies. Finally, the research team gathered documentation on the selected initiatives from different published sources and conducted structured telephone interviews with key informants involved in these initiatives. Each informant was asked to update and respond to materials sent to them in advance. After responses were received, we followed up with phone interviews.

Interview results and documentation were analyzed for theoretical concepts and patterns in the data. First, key aspects were identified from the literature and data were explored using specific theoretical categories. Second, new concepts and categories, which emerged during the analysis were added to the initial theoretical frame (specifically benefits and impediments). Finally, selected cases were reviewed in detail to understand several strategies that were used by states and counties to obtain certain degree of success in their interorganizational information integration initiatives.

5. State and County Information Integration Initiatives

There is growing attention on integration as a critical strategy for increasing the effectiveness of multi-jurisdictional, multi-governmental enterprises such as the justice enterprise. As a result the integration of information across traditional boundaries is growing in importance to the agendas of local, state, and Federal agencies. The emergence of enterprise architectures at the federal and more and more at the state level is an example of the investment that is being made in an infrastructure to support cross-boundary information sharing. Standards to support data sharing are being invested in as well.

The justice community in particular is investing in the development of standards to support data sharing. For example, an XML Technology Working Group, as part of the Justice Integration Information Technology Initiative, the US Department of Justice, Office of Justice Programs, is currently working to coordinate the efforts of federal and state agencies in the design of interoperable standards for criminal history and public safety records. Selected examples of information integration initiatives are described below. The examples are provided to build understanding of integration efforts by illustrating the problems solved, successful strategies employed to deal with these problems, and the benefits obtained. This section describes three county-level and three state-level examples.

5.1. Information Integration at the County Level

This section presents three cases of exemplary information integration at the County level. These cases help to build understanding of strategies to achieve successful information integration in the criminal justice enterprise.

5.1.1. Brief Description of the Cases. The Justice Information Management System (JIMS) in Harris County began in 1977. Currently, it has a staff of 43 and an annual budget of over \$3 million of County funds. The system contains over 180 million criminal justice records and over 85 million civil justice records. The user community consists of over 18,000 individuals from 144 county agencies, 111 other local agencies and governments, 11 state agencies, 15 Federal agencies, and over 800 subscribers. The system has grown to include civil justice information in addition to criminal justice information. JIMS includes jury management and payroll processing as well as an extensive civil justice component. JIMS also includes a GIS system adaptable to various agency needs. The primary goal for establishing

the Justice Information Management System (JIMS) in Harris County was to create an adaptive information system, which could respond to the ongoing information needs within the county.

Table 2. County Overview

County	Integration Approach	Start Date	Levels of Government
Harris County, Texas	Incremental / Systemic Capacity	1977	County
Hennepin County, Minnesota	Comprehensive / Systemic Capacity	1999	Grew into Statewide Project
Marin County, California	Incremental / Systemic Capacity	1984	Multi-County

Hennepin County’s Criminal Justice Coordinating Committee (CJCC) oversees the County’s integration efforts. CJCC was formally established in 1998 with a memorandum of understanding, but had been in place informally for twelve years prior. The Criminal Justice System Information Integration Project (CJIISP) began in 1999 and was a natural fit for this multi-agency committee. Each of the local criminal justice agencies cited above are represented on the CJCC and provide high-level guidance for this information integration effort. In addition, representatives from Hennepin County serve in an advisory capacity on various state-level boards created to guide the CriMNet initiative. The goal of the Criminal Justice System Information Integration Project (CJIISP) is to create an information network that allows agencies real time access to information of other criminal justice agencies.

In Marin County, the Criminal Justice Information System (CJIS) began in 1984 and was built over a seven-year period. Over time it grew into a five county effort. The consortium began when key justice officials from Kern, Marin, and San Joaquin counties pooled financial resources to develop a new information system. The District Attorney Case Management (DARWIN) phase I has been implemented and is quite successful. The system interface seamlessly with the CJIS database and provides some technology enhancements including MS Office, imaging, and web interface. The current goal of CJIS is system enhancement through incorporating new technology and new features into the system.

5.1.2. Critical Success Factors and Results. Several factors converged to provide an opportunity for the creation of JIMS in Harris County. A class action suit on jail overcrowding revealed a weakness in the County’s

information systems. The County had three information systems that were unable to interact with each other. Political and organizational factors opened the window of opportunity the county needed in order to act. The County’s courts and law enforcement agencies, along with the data processing operations organization, completed an exhaustive analysis of information used by the criminal justice enterprise. It then produced recommendations for a data processing center that would replace the three systems in existence. The County ultimately chose to take an incremental strategy to solving its information integration issues by developing components in smaller steps. The development decisions were based upon an understanding of information flows, business rules, and user needs. The Harris County Commissioner’s Court and the District Clerks’ Office were key champions to the establishment of JIMS.

CJIISP was initially a county effort, but eventually grew into a statewide project. The executive director of the Minnesota Business Partnership was able to explain the complex process of integrating information systems to the State Legislature and how applying corporate “best practices” could help the state to integrate its criminal justice information. The State Legislature was very supportive of the idea of establishing a statewide criminal justice information system. Within Hennepin County, real-time data exchanges have been implemented between arrest events (law enforcement) and pre-sentence detention (the Sheriff and pretrial evaluations performed by Community Corrections) and prosecution (County Attorney). Real-time data exchanges between prosecution and the courts have also been implemented. Funding for these integration initiatives comes from the U.S. Department of Justice, and the Minnesota State Legislature. Private industry in Minnesota has also played a major role in the initial success of the endeavor.

Marin County’s CJIS has become a national model for cooperation in criminal justice information integration. It is an example of interorganizational cooperation and resource sharing. The consortium consists of five counties and CJIS continues to be supported from resources of the consortium’s members. This cooperative approach has worked very well for the counties involved. Each member of the consortium was responsible for developing and working on the components that were most important to it. As a group, the counties agreed upon which standards to use. A contractor was then hired to develop the initial code. The Marin County Information Systems and Technology (IST) Department played a major role in the development of the Criminal Justice Information System.

5.1.3. Challenges and Future Plans. JIMS has been in place for over twenty years. Given its length of existence, the system faced problems of obsolescence. Harris County decided to stay with its grand-design architecture by migrating its legacy database to a more current model.

There are plans to enhance the system to include open warrants, address records, pawnshop data, gang information, and vehicle registration.

Hennepin County is the largest county in Minnesota with a population of over 1.1 million. It is the most complex county in the State. At one time the Customer Entry system was too slow to keep up with the demands placed upon the system. The CJIISP also lacked standard purchase order numbers across the systems. CJIISP plans to conduct an analysis of city prosecution business functions to streamline their activities by leveraging information already captured by law enforcement. There are also plans to develop an event-driven application adapters for the systems of records used by Adult and Juvenile Probation. CJIISP is also working on integration analysis and development for the introduction of a new statewide court system.

The Marin County justice community is being served by an increasing number of discrete systems. CJIS currently provides access to adult criminal, civil, and juvenile justice information. Probation case management was added to the system in 2002. Marin County and the other members of the consortium are in the process of developing a new integrated justice system – E-JUS. E-JUS will provide greater connectivity and enhance the ability to share and view data amongst the systems. The consortium has plans to add a system in 2003 – Law Enforcement Information (ALEIS). There are plans to add a new Statewide Information System for the Courts in 2004.

5.2. Information Integration at the State Level

In this section, three state level information integration initiatives are presented. The three cases are considered examples of successful integration in the criminal justice enterprise. This section briefly describes each of these three initiatives.

5.2.1. Brief Description of the Cases. The Colorado Integrated Criminal Justice Information System (CICJIS) is a seamless criminal justice information sharing program that incorporates several state agencies as primary participants and some federal and local governments. CICJIS promotes standardization of data and communications technology among law enforcement agencies, district attorneys, the courts, and state-funded corrections for adult and youth offenders. CICJIS facilitates information sharing by electronically moving data from one agency to the next and by providing query access on other systems. The annual CICJIS budget line was approximately \$1 million and another \$200-400,000 came from grants. The goals of criminal justice information sharing in Colorado are getting the right information to the right people at the right time and place.

Table 3. State Overview

State	Integration Approach	Start Date	Funding
Colorado	Comprehensive / Systemic Capacity	1995	State Legislature
Delaware	Incremental / Systemic Capacity	1990	Federal and state agencies
Pennsylvania	Comprehensive / Systemic Capacity	1996	Governor's Office and the U.S. Department of Justice

The formal launching of the Delaware Justice Information System (DELJIS) occurred in 1990, when the courts' Disposition Reporting System merged with the Computerized Criminal History. Currently, users are able to instantly determine the status of a case, thus enhancing the ability to process criminal cases in a more efficient way. Through the system, users can share criminal history, warrant, and case information. The system also considers extensive use of videophones for many purposes. DELJIS has had the financial support from federal and state agencies. Creating and improving the system cost approximately \$10 million since 1982. Currently, the Delaware Criminal Justice Information System contains comprehensive information from law enforcement to courts and corrections. The main goal of DELJIS is to create an integrated information environment that will expand services to agencies and individual criminal justice professionals by providing accurate and timely information that can be shared across participants.

In 1995, the Pennsylvania Improved Management Performance and Cost Control Task Force reported over 400 different ways to reduce cost, increase accountability, and improve service. One year later the IT Strategic Planning Initiative was announced. The Commonwealth of Pennsylvania Justice Network (JNET) started as a collective project between several state agencies, but it has since integrated counties, municipalities and local police departments. Currently, JNET is a statewide effort in which about 32 commonwealth agencies, 36 counties, and 250 municipal police department are participating. In addition, 9 federal agencies are also accessing Pennsylvania justice information. The JNET system uses a web-browser interface that allows agencies to share different types of information. In using the system each agency has control of its own data, and it can decide its level of information sharing. JNET has received funding from sources such as the Governor's Administration

Office and the U.S. Department of Justice. The estimated total budget for 2002 was \$12.5 million. The Commonwealth of Pennsylvania Justice Network has the goal of enhancing public safety by providing a common on-line environment whereby authorized state, county, and local officials can access criminal justice information from participating agencies. In 2002, JNET won a national award from the Federation of Government Information Processing Councils.

5.2.2. Critical Success Factors and Results. The Colorado Integrated Criminal Justice Information System (CICJIS) was developed in less than four years (from 1995 to 1998). Several performance measures were established by the Legislature. One of the initial success factors for Colorado was the state legislature's support and oversight. There were three additional relevant players involved in the initial development of CICJIS: the Information Management Committee, the Executive Policy Board, and the CICJIS Task Force. The information integration initiative plan retained the autonomy and platforms of involved agencies; therefore each participant maintained its own legacy system and ownership of its information.

DELJIS can be described as using a well-planned incremental approach. One of the most important factors that helped Delaware to be successful was user involvement. User involvement in the design phase of the system, followed by adequate user training seemed to be a successful strategy in this case. In addition, relatively small geographic size and a limited number of local agencies were also organizational characteristics that facilitated the integration effort. Another factor was the partnership with Troop Two of the Delaware State Police. Their support was essential in getting other law enforcement agencies to accept the Automated Warrant System. Currently, the board of managers conducts annual evaluations of the plan. The State Legislature was considered the most important player in the development of DELJIS.

Ensuring agency independence was a key factor in enhancing cooperation among organizations in the JNET initiative. Another important factor was the use of private sector technical knowledge in the development of the integration initiative. Outsourcing technological support to companies such as BearingPoint (formerly KPMG Consulting) and Diverse Technologies Corporation helped avoid some technology-related problems. In addition, the JNET governance structure includes people from several agencies. The IT Strategic Planning Initiative was also a factor in the successful development of the endeavor. The JNET Executive Council was also considered an important player. It has members from each of the governing agencies and can be considered the governance structure of the information integration initiative.

5.2.3. Challenges and Future Plans. For Colorado, future plans include enhancing existing queries, value add to query results, registering sex offenders earlier in the criminal justice process (at conviction), and expansion opportunities both inside and outside of the criminal justice enterprise. The CICJIS program is developing enhancement requirements to meet homeland security information sharing needs, while integrating additional agencies for both criminal justice and homeland security goals. The State is looking at using the CICJIS program information-sharing model as a statewide standard. Challenges include lack of funding, current system solution scalability, and relatively high maintenance costs. Previous data integrity challenges have been significantly reduced with a database design change and a complete rewrite of the data and referential integrity rules. Now that the system has been in production for five years and is a success, expansion opportunities are being considered. The initial CICJIS design was comprehensive but may no longer meet the scalability and reliability requirements of the program. While maintaining the business rules and standards, CICJIS is converting its solution to a web services environment utilizing Justice XML.

There are several challenges that DELJIS has to overcome. First, information quality is still a problem. Second, not all critical agencies are participating in the system. As a consequence, important information is not shared among the justice community. Third, the composition of the board of managers is not homogeneous. Some of the members are technical staff that cannot fully represent the strategic view of their respective agencies. Finally, it is still necessary to create common standards and to enhance searching capabilities. Delaware is converting several mainframe applications into client/server applications. They are also investing in applications to support credit card payments through the Internet (ticket fines) and are working with the Delaware State Police to electronically record accident reports.

The main challenge to JNET's efforts is budget constraints. A second challenge is the lack of formal structure for the decision-making. As was mentioned, the JNET governance structure is comprised of representatives from several different agencies and there are still struggles over the decision-making process and how power is allocated. In addition, the JNET System allows agencies to share justice data. However, not all agencies participate at the same level of data sharing. Statewide deployment of JNET is planned for 2004.

6. Useful Strategies for Interorganizational Integration Initiatives

The following core set of strategies are being employed by the initiatives examined in this study, to deal

with key barriers to information integration in the justice enterprise.

Table 3. Useful Integration Strategies

Integration Strategy	Integration Barriers Addressed
Retain Autonomy of the Involved Agencies	<ul style="list-style-type: none"> ◆ Turf and Resistance to Change ◆ Environmental and Institutional Complexity
Establish and Exercise a Governance Structure	<ul style="list-style-type: none"> ◆ Organizational Diversity and Multiple Goals ◆ IT and Data Incompatibility
Secure Strategic Partnerships	<ul style="list-style-type: none"> ◆ Environmental and Institutional Complexity ◆ IT and Data Incompatibility
Build on Long-Range and Comprehensive Planning	<ul style="list-style-type: none"> ◆ IT and Data Incompatibility ◆ Environmental and Institutional Complexity ◆ Turf and Resistance to Change
Build Understanding of the Business Process	<ul style="list-style-type: none"> ◆ Organizational Diversity and Multiple Goals ◆ Environmental and Institutional Complexity
Secure Adequate Financial Resources	<ul style="list-style-type: none"> ◆ IT and Data Incompatibility ◆ Turf and Resistance to Change
Obtain and Nurture Executive Leadership and Legislative Support	<ul style="list-style-type: none"> ◆ Turf and Resistance to Change ◆ Environmental and Institutional Complexity

6.1. Retain Autonomy of the Involved Agencies

A strategy regularly adopted in the cases studied is the recognition and retention of the autonomy of different agencies involved in the integration initiative. As a group, members of each initiative made decisions together, but the members were respectful of individual agency decisions concerning each agency’s information and infrastructure. An example of this is the Colorado Integrated Criminal Justice Information System (CICJIS). Each agency participating in the initiative maintained its own legacy system and made most of the decisions pertaining to the information contained within it. This kind of integration strategy was seen as a first step to more comprehensive and integrated projects requiring process or infrastructure integration.

6.2. Establish and Exercise a Governance Structure

A well-organized governance structure was considered in each case be a factor in the success of their integration initiatives. Most of the cases benefited from a well-organized governance structure charged with providing leadership, defining goals and objectives of the project, and enabling efficient analysis of policy environments and technical solutions. A governance body was considered an important coordination and control mechanism for the agencies involved in integration. Each case recognized and acted on the need to have policy-level members in the governance structure. The governance bodies provided a venue for cross-boundary integration teams to explore the diversity of their organizational goals and to focus on establishing a shared goal for the integration initiative. The governance bodies also provided a venue for the necessary debate that surrounds the development of system and data standards necessary to support interoperability.

6.3. Secure Strategic Partnerships

Participants in successful integration initiatives have formed strategic partnerships within the justice community, beyond the justice community and with the private sector. In the integration initiatives studied, participants considered success to be more dependent on forming strong relationships and building trust than on using any particular technology. Using strategic partnerships was found to be effective in helping teams deal with the complexity of the environment. Some projects found that partnerships with end users were critical to their success. These partnerships resulted in access to multiple perspectives on justice business processes and the use of integrated information. In addition, technical assistance provided by vendors appears in several initiatives as a success factor. A positive effect of the partnership with private vendors was the impact on IT and data incompatibility issues. In one case, public-private partnerships resulted in an improvement of technical expertise concerning a specific piece of hardware or software. The Commonwealth of Pennsylvania had success in using technical knowledge from the private sector in developing its integration initiative. It has also had success with outsourcing its technological support to outside companies. In Minnesota, the executive director of Minnesota Business Partnership was able to successfully explain to the State Legislature how applying corporate “best practices” could help the state to with its criminal justice information integration initiative.

6.4. Build on Long-Range and Comprehensive Planning

Most organizations involved in the cases studied engaged in comprehensive planning before starting with

the development and implementation of their integration initiative. This prior planning allowed integration efforts to exist within a broad strategic view of integrated justice. Indeed, according to Cresswell and Connelly [7], initiatives based on comprehensive planning and a long-range perspective achieve a wider, more systematic range of objectives. Prior and ongoing planning efforts in the cases allowed for the identification of environmental complexity and resulted in the adoption of short and long-term strategies to address this complexity. Planning also informed change management strategies and specific technical development efforts. Early integration planning highlighted the need for an interoperable technical infrastructure to support integration. A number of the cases invested early on in cross-boundary standards efforts to support interoperability. Harris County designed its integration initiative with future needs in mind. Likely needs for support and growth were considered in the development of the County's Justice Information Management System. Similarly, Delaware developed an incremental approach that included long-range planning and periodic enhancements.

6.5. Build Understanding of the Business Process

According to Cresswell and Connelly [7], the design of information architectures and applications requires clear and highly-detailed knowledge of specific procedures that generate or use criminal justice information. Successful organizations have this highly detailed knowledge about their business process and a solid understanding of the reasons why they are engaging in the integration projects. Each of the initiatives demonstrated a good understanding of their own processes as well as the processes of their partners. They used the process of building this understanding to identify and highlight the organizational similarities and differences. For example, they were able to identify how a single data element was viewed and used differently by different agencies, and even by different units within a single agency. Process analysis efforts allowed integration teams to reduce complexity by making the processes of each agency explicit. For example, Delaware staff talked to every user of the system to understand their needs and have a clear picture of the processes of the different agencies involved in the initiatives. These efforts also resulted in the shared understanding for how each process supports or does not support the shared goal of the integration effort and the specific and appropriate goals of each individual agency.

6.6. Secure Adequate Financial Resources

Adequate financial resources were identified as necessary to take advantage of the promises of information integration projects. Support from state and federal grants was considered a persistent success factor.

How resources were used also seemed to influence success. Using resources in an enterprise-wide manner, in particular, was found a factor in achieving success. Financial support was often seen as an incentive to reduce resistance to participation. In addition, the cases indicate that the availability of financial support resulted in more agencies being willing to move forward on the changes necessary to support technology and data compatibility. Adequate financial resources allowed those agencies that were resistant based on a lack of their own resources to consider the opportunities of integration independent of the impact on local, already constrained budgets. Many of the initiatives reviewed in this study received funding from State or Federal sources. However, governments have found other ways to fund integration initiatives. For example, in Marin County, the Criminal Justice Information System began when key officials from four neighboring counties in California pooled money to begin the development.

6.7. Obtain and Nurture Executive Leadership and Legislative Support

Successful projects have either a strong executive champion, the support of the legislature, or both. Obtaining the support and buy-in from an executive leader or a legislative body necessary for an information integration project to move forward. Integration efforts require organizations and individuals to change. In a number of the cases, leadership support was critical to efforts to secure necessary change. Securing the necessary change in the cases studied required an open and collaborative process, and clear and consistent leadership support. At the state level, legislative support is considered essential for the success of broadly based integration initiatives. The complexity of the environment and the sometimes unclear lines of authority were found to be less of a barrier those cases where the legislature provided leadership and support to the initiative. In most of the cases studied, the legislature was closely involved in the design, implementation, and evaluation of the initiative. Colorado is a good example of this legislative involvement. In Colorado, a Statutory Commission of the Legislature was a key player in establishing the state's comprehensive integration initiative. Delaware is another good example of legislative support. The State Legislature played a major role in the development of the Delaware Justice Information System.

7. Final Comments

Interorganizational information integration is a difficult challenge for the justice community. It presents public managers with a myriad of opportunities and barriers. Understanding how these barriers and benefits

are interrelated contributes to a better understanding of this type of initiative. This paper presents some evidence of the complexity of interorganizational information integration in the criminal justice enterprise. Additionally, this study highlights some strategies that have been useful to improve the probability of success in these complex integration initiatives.

Further research is necessary to better understand the mechanisms by which these strategies either avoid some barriers or exploit some enablers. The relationships between information technologies and organizational structures are complex and dynamic. Longitudinal studies are necessary to capture the dynamic interplay between technological artifacts and social processes in interorganizational information integration initiatives. Many of the challenges are similar to other IT projects, but their cross-boundary nature makes them powerful examples to learn from.

8. References

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