Background

Over the last several years, a number of state and local actions have provided the opportunity for Multnomah County criminal justice agencies and service providers to undertake this project. Briefly, the major chronological events leading to the formalization of this project include:

- A Local Public Safety Coordinating Council (LPSCC) was established in response to the 1995 passage of Oregon Senate Bill 1145 by the 86th Oregon Legislative Assembly and the subsequent passage of Multnomah County ordinance 839.

- A public safety technology bond was passed by the voters of Multnomah County in May 1996. The bond provided $7.5 million for needed criminal justice infrastructure and investments to facilitate and support the sharing of criminal justice information.

- In 1997, LPSCC created the Data Standards Committee. This committee received criminal justice agencies and private service provider's proposals for projects to be funded under the bond technology program. These proposals were evaluated by the Data Standards Committee and a recommended group of projects was forwarded to LPSCC for approval. Two of these projects were a DW project and an Evaluation - Decision Support project.

- In September 1997, a Quality Assurance (QA) contractor was retained to provide independent oversight of the overall bond technology program.

- In October 1997, the DW and Evaluation - Decision Support projects were combined into the DSS project. Additionally, the decision was made to retain the services of an external project manager for the initial stage(s) of DSS implementation.

- In December 1997, a project manager that had a background in setting up Data Warehouse projects and DSS applications was hired. His official start date being January 5, 1998.

- In March 1998, the project received approval from the bond technology program and executive committee to move forward with the proof of concept and requirements phase of the project.

Problems and Opportunities
Problems

- Data Access and Sharing

  At the current time, the components of the justice system have unique information systems that do not easily or routinely share data. This limits the capability to easily access information *and* to compare and analyze data from multiple sources.

- Inadequate Access and Analysis Tools

  Currently, tools for access, inquiry, and analysis are often technology-platform dependent and are not easy to learn or easy to use. Many of the current tools' information access and analysis methods require information systems staff intervention or training on the use of sophisticated and complex analytic tools.

- Reliance on Tradition and Personal Expertise

  At the present time, practitioners tend to rely on tradition and personal expertise to decide among options for disposing of a case, because they have little knowledge of or access to information that indicates what sanctions or programs work. There is a recognized need to go away from the exclusive use of tradition and personal expertise and toward the use of factual data to determine what actions will work best.

Opportunities

- Public Safety Technology Bond Funds

  The bond measure passed by Multnomah County voters provides funds intended to address needs such as those motivating this project.

- Increased Interest in Program Effectiveness Data and Research

  Increased interest at the local and state level in the need for better data and research in support of criminal justice is increasing awareness and visibility.

Current Project Description
DSS-Justice relies on three main "components":

- Operational Databases

  Currently, we source information from several external software applications, including:

-	OJIN	Oregon Judicial Information Network (State-wide court case tracking system)
-	SWIS	Sheriff's Warrant and Inmate Tracking System (Multnomah County's jail management system)
-	DACTS	Multnomah County's District Attorney Case Tracking System
-	PPDS	Portland Police Data System
-	DOC	Department of Corrections

- Data Warehouse

  The data warehouse serves as a central repository for all of the extracted data we receive from the source applications. Until May, 2003, our data was extracted via custom-coded programs developed either here at Multnomah County, or by the technical staff at the proprietor agency. Since May, 2003, we have used an ETL tool by Informatica to do our extractions and data cleansing. (*Note*: data extracted from systems outside of Multnomah County (PPDS, OJIN, DOC) still use custom programs that run on their mainframes to extract the data and FTP flat files to our environment. Once the flat files are received, they are then run through the Informatica mappings for further processing.)

  The vast majority of our raw data is updated nightly - Monday through Friday. However, the cubes (which are pre-built customized "views" of the data) and various tables used for analytic purposes are updated monthly. For example, the offender and case information is updated nightly; the programs that calculate the offender's criminal history for sentencing support purposes and loads those tables, is run on a monthly basis.

  The biggest challenge involves trying to link data from multiple sources together in a reliable manner. Each independent system potentially has its own way of storing key information: names, identifiers (such as State Identification Number, FBI Number). It is a major undertaking to try to link a person in jail management system to the same person in court case tracking system. *All of the mappings to perform this linking are custom-coded using Informatica and/or stored procedures, and maintained here at Multnomah County.*

  One of the biggest benefits to the linking process is that it can clearly point out discrepancies between the various systems. One of our most useful reports is the "Potential Link" report. This shows people who appear as two different offenders in the data warehouse, but they have one or more identifiers that could have allowed them to be linked as one person. For example, a person could have linked by State Id number (SID) but didn't because the FBI numbers were different. The report might show that the FBI number is identical in 3 systems, but one system shows basically the same value, with 2 of the characters transposed. This has resulted in the data proprietors going back and cleaning up the data in their own systems.

- Query and Data Exhibition

  At the time the DSS-J Project was begun, there were very few vendors offering the type of OLAP presentation options that we were looking for. The "decision" to go with a vendor called Viador was pretty much made for us. We also have developed some custom reports in-house.

  Since that time, there have been several new products introduced to the market. The County is considering re-evaluating these types of tools in order to determine a

countywide standard in this area.

We also have an end-user product that some agencies are using to create ad-hoc reports. COGNOS is the name of that product. Clients using COGNOS have direct access to their own data in DSS-J for this purpose. For example, the Sheriff's office may create ad hoc reports with data stored in the warehouse from their own system, but not from, say, the courts.

The data warehouse resides on a DB2 database and our data mart resides on an Oracle database, both running on UNIX servers. Our ETL tool, Informatica, resides on a SQL Server database running on a Windows server.

Proposed Future Enhancements

In addition to an on-going effort to validate the existing data in DSS-Justice, our project plan for the future includes:

- Potential future data sources:

  - JIN   Juvenile Information Network
  - LEDS   Law Enforcement Data System
  - Gresham Police
  - SPIN   Supervision Tracking System
  - COJIN   Mugshots

- Upgrades to hardware/software:

  - Upgrade report/cube presentation tool.

- Support researchers, both internal and external to the County, in their efforts to provide feedback leading to improved service to the community.

Summary

This is a very brief, very high-level overview of a *very* complicated process. The current staff includes four employees: the DSS-J Coordinator, a technical lead, a data conversion specialist and an application developer.

The exciting news is that, at this point in time, the criminal justice community is truly becoming aware of the great potential that the DSS-J data warehouse has. The downside is, we have identified nearly *7 years worth* of requested work waiting in the wings! Obviously, with the small staff we have today, that seven-year figure could actually be low. This is a very expensive

project to keep afloat, and finding stable sources of funding continues to be one of our biggest obstacles.