



JNET Statewide Consolidated Warrant Search
Data, Information, & Knowledge Management
Commonwealth of Pennsylvania

Pennsylvania Justice Network
Nomination for 2008 NASCIO Award

Executive Summary:

The Pennsylvania Justice Network (JNET) is the Commonwealth's primary public safety and criminal justice information broker. Through the full commitment of its member agencies, leadership, and staff resources, JNET promotes safe communities throughout the Commonwealth by providing a secure integrated justice system to all of Pennsylvania's public safety partners. The secure portal of JNET connects over 33,000 authorized practitioners throughout the Commonwealth's sixty-seven counties to critical information from various contributing municipal, county, state, and federal agencies.

Information systems connected to JNET benefit from the JNET vast data exchange and messaging capabilities, while JNET users benefit from over fifty secure criminal justice and public safety applications. These applications include access to the Pennsylvania State Police (PSP), the Administrative Office of Pennsylvania Courts (AOPC), Pennsylvania Department of Corrections (DOC), Department of Welfare (DPW), Pennsylvania Board of Probation and Parole (PBPP), Juvenile Court Judges Commission (JCJC), as well as many additional inquiry sources.

One of the most notable benefits of JNET is the ability to access active warrant information through three separate warrants sources: Summary warrants issued by the AOPC, civil warrants issued in the interest of DPW child support cases, and criminal warrants retained by the PSP and the National Crime Information Center (NCIC).

While access to these warrant sources is essential, the siloed nature of various warrant information systems of JNET required officers to conduct individual searches using three separate applications. This disparate view of warrant information meant that officers did not receive a comprehensive view of an individual's outstanding warrants at one time. The JNET Consolidated Warrant Search project aimed to reuse existing connections to agency data sources and consolidate warrant information returned from the AOPC, DPW, PSP, and NCIC into a single consolidated application for law enforcement. The new application would allow users one-stop-shopping when searching for active warrants, thereby increasing justice system efficiencies.

To this end, JNET first implemented a statewide Global Justice XML Data Model (GJXDM) document and procedure process. Leveraging the GJXDM, JNET set out to build a Consolidated Warrant Search Application into the existing Web portal. For integration, JNET deployed an Enterprise Service Bus (ESB) to facilitate communication and data sharing between participating agencies. Not only did the ESB allowed disparate networks and databases to be queried simultaneously, it also categorized and organized result sets so they could be easily viewed and understood by law enforcement in the field.

Through the implementation of standardized data modeling, integration technology, and project methodology, JNET began to pilot the first statewide Consolidated Warrant Search Application on October 31, 2007. The application was released to all users shortly thereafter, and at the turn of the calendar year, the application was experiencing over 14,000 queries per month. JNET achieved its goal--*provide users with a single, unified, comprehensive warrant interface.*

While Public and Officer Safety were the primary business drivers behind the Consolidated Warrant Search, the application is providing substantial cost savings as a result of increased efficiencies. Application use exceeding 14,000 per month coupled with response time efficiencies show that an estimated \$230,165 will be realized as ROI during this fiscal year alone. Personnel time and organizational funding streams can begin to target increases in public safety presence and reductions of time sitting behind a computer terminal.

Description of the Business Problem and Solution

Historically in Pennsylvania, the PSP have administered and operated the primary warrant repository within the Commonwealth. The Commonwealth Law Enforcement Assistance Network (CLEAN) ideally indexes every existing criminal warrant available to law enforcement, including out of state warrants. Unfortunately, criminal warrants approved or issued by the Pennsylvania Courts were not always being entered into CLEAN. Until recently all warrants issued by the Court in Pennsylvania would have to be manually entered into the CLEAN system. This human interaction often resulted in delayed and/or incomplete information within the CLEAN database. In addition warrants issued by the court for child support cases within Pennsylvania are considered civil matters and therefore are not available through CLEAN. While CLEAN offered out-of-state NCIC information, it was estimated that only 60 percent of the warrants issued within the Commonwealth were available in the CLEAN system. As a result, law enforcement was forced to check separate databases in order to fully validate warrant availability. As such, full warrant checks were not always completed, decreasing both public safety and the efficiency of justice services within the Commonwealth.

To address these deficiencies, JNET sought to provide a single point of inquiry for all existing warrant repositories. This Consolidated Warrant Search would ensure that law enforcement could quickly and easily search all warrant repositories with confidence that the results were complete and accurate. For the Consolidated Warrant Search application to succeed, JNET needed to pull warrant data from the databases of three organizations; AOPC, The Department of Public Welfare's Pennsylvania Automated Child Support Enforcement System (PACSES), the PSP CLEAN, and the NCIC.

With each of the various agencies partnering and sharing information, JNET needed to create a secure and trusted information sharing model for the project. The application needed to incorporate user authentication, data integrity, access control and audit capabilities into a single-sign-on web application. This meant that technology would play a critical role in the project's development.

In March, 2007 the JNET Consolidated Warrant Search Project was formally initiated. A Project charter was drafted with input from not only the agencies contributing warrant information to the project, but also feedback from JNET user community targeted to use and benefit from the project.

Three of the key technologies that made the Consolidated Warrant Search Application possible were Business Process Management; an Enterprise Service Bus; and the adoption of the Global Justice XML Data Model (GJXDM) standardized data messaging format.

In cooperation with Commonwealth partners, JNET implemented a statewide Global Justice XML Data Model (GJXDM) document and procedure process. This uniform process set standards and policies for statewide data exchange, and has resulted in tangible cost savings to Commonwealth taxpayers. By leveraging GJXDM, JNET, AOPC, PSP, and PACSES could utilize a common data dictionary to ensure that data fields were being consistently utilized in an appropriate and repeatable manner. It also ensured that all agencies were on the same page in regards to schema and message format. With the GJXDM backbone in place, JNET set out to build a Consolidated Warrant Search Application into their Web-based portal.

Business Process Management (BPM) methodology helps organizations take a structured approach to the design, automation and improvement of key processes. These processes are often complex and comprised of both human and IT components. JNET implemented BPM to manage the creation of the Consolidated Warrant Search process. During the design and modeling phase of the project, the team

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used the BPM methodology to identify all of the warrant search process components and how they would interact to produce search results that criminal justice practitioners could use to take action. Using the BPM methodology, the team was able to map out the process from start to finish including user authentication, input of search criteria, validation and formatting of the search, execution of the search across the AOPC, DPW, CLEAN, and NCIC databases, and finally, formatting and display of the results. This organized approach ensured that all factors and exceptions were taken into consideration in the development of the Consolidated Warrant Search Application. Once the application was put into production, JNET team members used the BPM methodology to monitor how efficiently information was flowing through the process and where improvements could be made.

After the process was established, JNET needed to put the technology in place to facilitate its execution. A key component in the process was the JNET ESB. An ESB is a software tool that allows data to flow between information systems designed using disparate programming languages. In other words, an ESB could be considered a universal translator through which computer systems speak to each other, regardless of how they were programmed. For JNET this capability was critical since the Consolidated Warrant Search Application would pull data from three disparate warrant databases. The ESB made it possible for JNET to submit the same warrant search criteria to the three AOPC, PACSES and CLEAN databases through a single user query and retrieve results from all three systems as well.

Once the warrant search results were obtained from the three databases, they needed to be delivered to the user through a single-sign-on, Web-based interface and Web service. JNET designed the Consolidated Warrant Search Application using open standards, meaning the application would seamlessly integrate with other systems designed to comply with the same standards. This would allow the application to be easily integrated with other functions within the secure JNET portal.

Significance to the Improvement of the Operation of Government

One exceptional aspect of the Consolidated Warrant Search Project is the level of collaboration and information sharing that took place among agencies in order to make the project a success. Too often, agencies treat data under their custody as proprietary information that's not accessible to those outside their firewall. This is often due to concerns regarding data security and integrity. But despite best intentions, this view limits the ability to leverage data as actionable intelligence in the benefit of society. By demonstrating the successful sharing of information across disparate systems and jurisdictions, the Consolidated Warrant Search project serves as an example of what can happen when agencies collaborate for a common good.

Another unique aspect of the project is the use of cutting edge information technologies for law enforcement. The use of BPM, ESB, and open Web standard technologies is gaining momentum in the private sector due to the ROI these technologies provide in terms of increased efficiency and reduced costs. However, state governments and law enforcement communities have been slow in adopting new information technologies for data integration and sharing. This results in a siloed approach to information access among criminal justice practitioners. Using BPM, ESB, and open Web standards to unlock the power of information contained within three disparate systems that span local, state, and federal jurisdictions makes the JNET Consolidated Warrant Search application one of the most innovative, useful, and cost-effective law enforcement tools in the nation.

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The success of the Consolidated Warrant Search has encouraged JNET and its partners to pursue additional federated search solutions for the JNET user community. JNET has begun efforts on a Consolidated Offender Photo Search as well as a Consolidated Person Inquiry. Because of the success experienced in the Consolidated Warrant Search, agencies are becoming eager to participate in information sharing efforts; ensuring a more efficient and effective administration of justice within the Commonwealth of Pennsylvania.

JNET began to pilot the first statewide Consolidated Warrant Search Application on October 31, 2007. The application was released to all users shortly thereafter, and at the turn of the calendar year, the application was experiencing over 14,000 queries per month. By consolidating all warrant repositories into a single application, JNET dramatically increased the effectiveness and efficiency of law enforcement and justice services within the Commonwealth.

Benefits of the Project

After being released to the JNET user community, the JNET Consolidated Warrant Search executed 10,849 inquiries during its first month of availability, and over 14,000 during its second. Projected over the course of one year, the application can expect to be utilized by law enforcement well over 170,000 occasions. This projection will undoubtedly increase over time as law enforcement officials become more familiar, aware, and dependent upon the service.

By reducing the number of individual queries needed for a complete warrant search from three to one, JNET has saved each Officer approximately four minutes per offender when using the JNET Consolidated Warrant Search. When compared to projected use, the JNET Consolidated Warrant Search will save law enforcement over 9,402 man hours. At an average salary of \$47,000 per year, the JNET Consolidated Warrant Search will save an estimated \$230,165 in Commonwealth funding streams during FY 2008/2009 alone.

Regardless of costs saving and improved efficiencies, the JNET Consolidated Warrant Search is primarily a public safety application designed to assist law enforcement. Since deployment, the JNET Consolidated Warrant Search has received the following feedback:

- The JNET Consolidated Warrant search has given the officer in the patrol car the ability to search for all existing warrants on a person from a single search. This ability enhances officer safety and makes the officer more efficient.
- The JNET Consolidated Warrant search has, for the first time in my career, made domestic relations warrants easily available to law enforcement. These warrants have not been accessible to police for many years, and offenders often slipped through the holes in our justice system. This tool will be a great help in bringing these people to justice.

On March 20, 2008, the Westmoreland County Sheriff's Department initiated new court procedures that included running each defendant scheduled to appear before the Westmoreland County Common Pleas Court against the JNET Consolidated Warrant Search. In only three weeks of use, the county sheriff was able to serve over four-hundred warrants resulting in the collection of over \$17,362 in outstanding costs and fines owed. The served warrants encompassed several court jurisdictions from across the Commonwealth of Pennsylvania, proving the horizontal integration of the JNET

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Consolidated Warrant Search. When policies such as Westmoreland County's are implemented throughout all sixty-seven Commonwealth counties, additional savings will continue to increase.

The JNET Consolidated Warrant Search Application is a primary example of the advantages and opportunities that arise when information is shared across local, state, and federal government agencies. The Consolidated Warrant Search application makes it easier for more than thirty-three thousand criminal justice practitioners across hundreds of jurisdictions to obtain a comprehensive view of an individual's outstanding warrants through a single, unified search.

By creating a bridge across siloed information systems, the Consolidated Warrant Search ensures that sensitive information is accessible through a secure delivery model in order for the facilitation of justice. The advantages of the Consolidated Warrant Search application can be classified into three primary categories:

1. Accessibility to information
2. Efficient use of resources
3. Effective execution of justice

Prior to the development of this application, criminal justice practitioners in Pennsylvania had limited access to information pertaining to outstanding warrants issued by various county, state(s), and federal agencies. This hindered law enforcements' ability to assess an individual throughout the various stages of the Pennsylvania criminal justice system. With the Integrated Warrant Search application, law enforcement officers, judges, prison officials, parole managers, and child welfare officers now have access to a comprehensive warrant profile. This has proved to be an invaluable tool in various settings such as random traffic stops, ruling or sentence decision, prisoner intake at a correctional facility, probation and parole terms, and outstanding child support fees assessments.

Efficiency in law enforcement is another key advantage of the Consolidated Warrant Search. Criminal justice agencies are under constant pressure to enforce laws, reduce crime, and ensure public safety; all with reduced budgets and resources. Prior to creating the Consolidated Warrant Search, criminal justice practitioners used three siloed, legacy search applications to obtain a comprehensive warrant profile of the subject in question. This disparate search process required the repetitive entry of query criteria and took approximately two minutes for each search. The Consolidated Warrant Search delivers "round-trip" transaction times of less than six seconds, delivering the same results almost instantly. In addition, search application availability has been measured at higher than 98.5 percent. Consistent availability and split second results means that law enforcement agents have efficient access to actionable information on-demand in order to make critical decisions.

The effective execution of justice in the Commonwealth of Pennsylvania is perhaps the most critical advantage provided by Consolidated Warrant Search. The comprehensive view of information provided by the new system ensures that criminal justice practitioners are capable of holding individuals responsible for the full extent of their actions. Prior to the deployment of the system, many individuals would interact with components of the Pennsylvania criminal justice system without the system ever realizing that these individuals had outstanding warrants or child support obligations.