Cutting down on red tape:

Bridging Islands of Information With XML Document/Data Exchange

An Image-X White Paper March 12, 2003

The most valuable asset an organization has is its information or knowledge base. As an organization grows, the sharing of and access to information and knowledge becomes ever more critical, at the same time an organization's growth makes management of this knowledge and information more and more complicated. Facilitating the exchange of information and knowledge between and within departments is an essential first step to integrating an organization's knowledge assets.

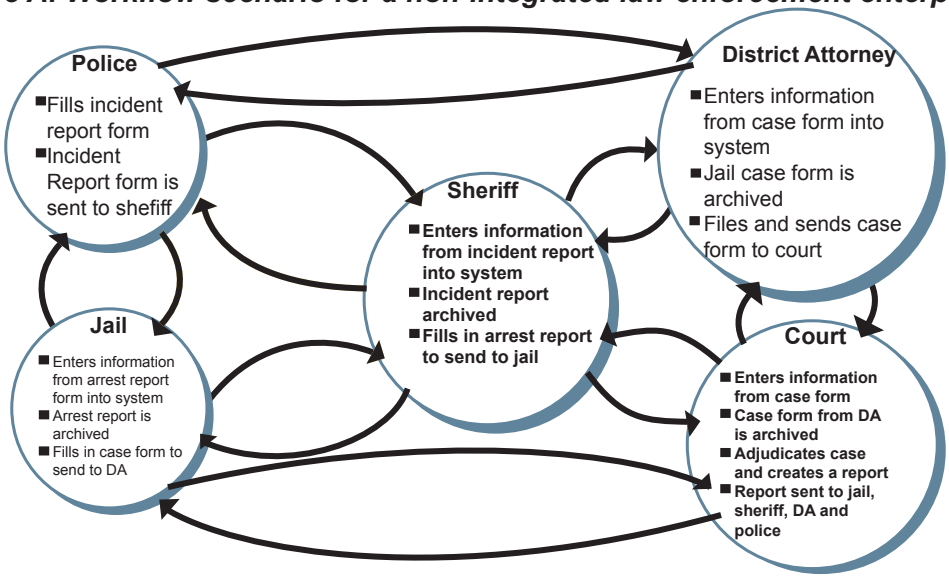
An organization's knowledge is important for the short term and the long term. In the short term information is critical to the operations of an enterprise and in the long term information is crucial for younger generations to learn and work from. Organizations with numerous departments have difficulty managing their information because the departments that comprise the enterprise act independently. These departments hold information that is needed not only by each department, but all the departments.

"The need to share information throughout the enterprise has created an inefficient and costly workflow. At each step, a department takes information from a form and then physically inputs that information"

Islands of Information

As an enterprise comes into existence, it becomes segmented into different departments or islands to facilitate management of the enterprise. While these organizational separations allow specialized and expert knowledge to thrive, they create significant barriers between departments which prevent the access of the vary expertise that is needed. In many instances the need to communicate or access information throughout all levels of the organization creates a mind-bending over complicated workflow. Often these barriers are a difference in the networking platform, mainframe system or particular organization structure used. In Figure A above, the everyday interaction between the police, sheriff, jail, district attorney and court is outlined.

Figure A: Workflow scenario for a non-integrated law enforcement enterprise



The need to share information throughout the enterprise has created an inefficient and costly workflow. At each step, a department takes information from a form and then physically inputs that information or data into a new and unique system creating a new entry containing the same information that was originally inputted into the enterprise at step 1. These redundancies create productivity, time and cost inefficiencies at each level of the enterprise. The measurable cost inefficiencies are staggering, the Bureau of Labor Statistics estimates that it costs an organization an average of $25 an hour just to the process data.

While these costs create a large incentive to bridge the islands of information, the current workflow, which is largely dependant on forms to access and send information, is ingrained to a point where modifying or attempting to overhaul it would be cost prohibitive. Any solutions need to adapt to an organization's workflow, as well as be cost effective in order to actually create any return on investment.

<image x>

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XML Document/Data Exchange - The Optimal Solution

Like human communication, communication between computers is only possible when all systems understand the same language. Much like a Mandarin speaker and a German-speaker need a translator to communicate and understand the bits of information passing between them, a computer running PeopleSoft and a computer running ORACLE also need a translator to facilitate communication. Extensible Markup Language or XML is that translator.

Again look at figure A. If the police puts a suspect's booking information on a floppy disk and then gives it to the sheriff, jail, DA or court in an attempt to integrate the systems, it wouldn't work. While, the police's system knows and understands that John Doe is the suspect's name and that 1450 was the code for his offense, the others systems are ignorant to these qualifiers. In fact, the sheriff's, jail's, DA's and court's systems see John Doe not as a name but as little 1's and 0's with no specific destination or meaning. XML provides a way to give John Doe a interpretable meaning to all systems. But while XML is a standard way of interpreting data, there is no standard authoring tool or way to assemble the data in the first place.

The optimal solution would allow an organization to maintain its current system of collecting and authoring data (forms), while adding the qualities of XML. Forms that departments create are carefully planned and created so that they meet the needs of all parties involved. Forms provide departments with all the necessary data, however, forms are very expensive to manage and they do not facilitate a quick transfer of information. There have been attempts by enterprises and vendors to put forms into a completely electronic format, but these forms are limited only to the systems that they are built for and they cannot be interpreted correctly by other systems. The information being transferred in these electronic forms is "dumb" data, which prevents it from being universally interpreted. Additionally these electronic form solutions are expensive to develop and implement.

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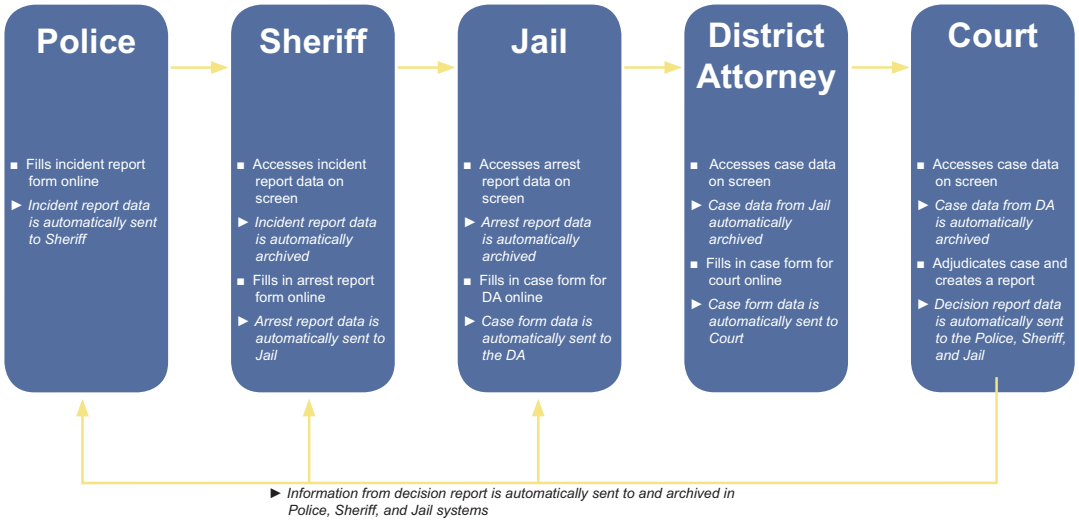
As outlined in figure B, the justice system can integrate and streamline their processes by combining their current paper forms with XML tags. Post integration, data can be interpreted and used by any type of system. The cost of conversion is minimal and the electronic forms that are generated look exactly the same as they do in paper format, requiring no retraining or gap between implementation and realization of productivity gains. Using XML technology, forms can be enhanced to bridge islands of information and integrate departments spread across an enterprise.

Figure B: Workflow scenario for an XML integrated law enforcement enterprise



The Benefits

XML document exchange allow departments to work together effectively and efficiently. The gap between islands can be effectively reduced with efficient XML based document exchange resulting in significant intangible returns on productivity, collaboration and innovation. These types of returns have no real measurement in the short term, but in the long term and through the life cycle of the system, these types of returns can be measured by decreased retraining time, reduction in turnover costs and significant productivity gains.

XML document exchange effectively eliminates temporary islands of information. These situations exist when time is lost due to printing, sending, and data entry resulting in monetary and productivity losses. Since all data is in an electronic and interpretable format, all departments within the enterprise can access and exchange data in real time. Bridging temporary islands of information is crucial to the short and near

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term operations of an enterprise.

In the long run XML document exchanges are inexpensive to develop, implement, change, and manage. Printing and data entry costs are virtually eliminated since XML document exchange allow systems to work as integrated systems. There are no development costs for the forms since they already exist and are easily converted to an electronic format. Hardware costs are eliminated because XML document exchange integrates all existing systems without introducing new hardware. The tables below relate the potential returns on investment for each department described in the scenarios of figures A and B.

"XML document exchange is the most simplified and cost effective knowledge management solution that can be used by an organization to bridge their islands of information."

Police Cost Analysis

Case Costs	Non-Integrated	XML Integrated
Data Entry	$1.50	-
Form Filling	$1.50	$1.50
Copying/Printing	$0.20	-
Scanning/Archiving	$2.00	-
Sending	$0.50	-
Subtotal	**$5.70**	**$1.50**
X 1,000 Cases Per Month	$5,700.00	$1,500.00
X 12 Months Per Year	$68,400.00	$18,000.00
Yearly Savings	**$50,400.00**	

Sheriff Cost Analysis

Case Costs	Non-Integrated	XML Integrated
Data Entry	$3.00	-
Form Filling	$1.50	$1.50
Copying/Printing	$0.20	-
Scanning/Archiving	$2.00	-
Sending	$0.50	-
Subtotal	**$7.20**	**$1.50**
X 1,000 Cases Per Month	$7,200.00	$1,500.00
X 12 Months Per Year	$86,400.00	$18,000.00
Yearly Savings	**$68,400.00**	

Jail Cost Analysis

Case Costs	Non-Integrated	XML Integrated
Data Entry	$3.00	-
Form Filling	$1.50	$1.50
Copying/Printing	$0.20	-
Scanning/Archiving	$2.00	-
Sending	$0.50	-
Subtotal	**$7.20**	**$1.50**
X 1,000 Cases Per Month	$7,200.00	$1,500.00
X 12 Months Per Year	$86,400.00	$18,000.00
Yearly Savings	**$68,400.00**	

District Attorney Cost Analysis

Case Costs	Non-Integrated	XML Integrated
Data Entry	$1.50	-
Form Filling	$1.50	$1.50
Copying/Printing	$0.20	-
Scanning/Archiving	$1.00	-
Sending	$0.50	-
Subtotal	**$4.70**	**$1.50**
X 1,000 Cases Per Month	$4,700.00	$1,500.00
X 12 Months Per Year	$56,400.00	$18,000.00
Yearly Savings	**$38,400.00**	

Court Cost Analysis

Case Costs	Non-Integrated	XML Integrated
Data Entry	$1.50	-
Form Filling	$1.50	$1.50
Copying/Printing	$0.60	-
Scanning/Archiving	$1.00	-
Sending	$1.50	-
Subtotal	**$6.10**	**$1.50**
X 1,000 Cases Per Month	$6,100.00	$1,500.00
X 12 Months Per Year	$73,200.00	$18,000.00
Yearly Savings	**$55,200.00**	

Total Enterprise Cost Analysis

Case Costs	Non-Integrated	XML Integrated
Data Entry	$10.50	-
Form Filling	$7.50	$7.50
Copying/Printing	$1.40	-
Scanning/Archiving	$8.00	-
Sending	$3.50	-
Subtotal	**$30.90**	**$7.50**
X 1,000 Cases Per Month	$30,900.00	$7,500.00
X 12 Months Per Year	$370,800.00	$90,000.00
Yearly Savings	**$280,800.00**	

Assumptions:
1) Cost of data entry is $1.50 per entry, this is a labor cost.
2) Cost to fill forms is $1.50 per form, this is a labor cost.
3) Cost is $.20 per form or case copied, this includes labor and material costs.
4) The cost to scan and/or archive each form is $1.00, this includes labor and material costs.
5) Sending costs are $.50 per each form sent, this includes handling and actual shipping costs.

Conclusion

When making a decision about knowledge management an organization must look at three things: cost, longevity, effectiveness, and ROI. XML document exchange allows existing forms to be enhanced and used in the most efficient and effective way. To be successful and competitive in the future, organizations need to manage their knowledge effectively to bring departments together in both the short term and the long term. XML document exchange is the most simplified and cost effective knowledge management solution that can be used by an organization to bridge their islands of information.

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