Georgia Courts Automation Commission Court Filing Interoperability Pilot Lessons Learned Document II

May 20th, 2002, Version 1.0

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This document is dedicated to **Mr. Don Forbes**, recently retired as Executive Director of Georgia Courts Automation Commission, and **Judge Hilton Fuller**, former Chair of Georgia Courts Automation Commission. Without their continued vision, leadership and support since 1997, the Court Filing Interoperability Pilot would not have taken place, electronic court filing and automation would not be so advanced in Georgia, and this document would not have been written.

Special thanks is given to **Jerry Garland**, current Executive Director of Georgia Courts Automation Commission, and **Judge David Emerson**, current Chair of Georgia Courts Automation Commission, for their continued support and leadership.

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Executive Summary

This document ("Lessons Learned II") provides an update to the Georgia Courts Automation Commission Court Filing Interoperability Pilot Lessons Learned Document published December 4th, 2001 ("Lessons Learned I"). The first lessons learned document is available on the Georgia State University Electronic Court Filing website at http://e-ct-file.gsu.edu/CourtFilings/Interoperability/.

"Part I. Introduction" outlines the contents of Lessons Learned I as compared to Lessons Learned II.

"Part II Definitions" includes new definitions not contained in Lessons Learned I. For a full list of definitions, see Lessons Learned I.

"Part III Background" lists the four vendors and three courts involved in the first Interoperability Pilot. It summarizes the associations among the courts and vendors and explains the technology components implemented during the first pilot. Technology components common to all vendors include an e-filing interface, middleware, and an administrative interface. Part III also introduces and provides background on two new Georgia projects: Child Support E-filing and Juvenile E-Filing. These projects leverage technology developed in the Interoperability Pilot to achieve e-filing.

"Part IV Interoperability I, II, and III" diagrams and explains in detail the architectures of Interoperability I, II, and III. This part shows how a new vendor was able to insert itself into the system, simply by adhering to system standards. This part also shows how new, more advanced technology has been added on top of existing technology over time. New technology includes the use of XML-based juvenile documents instead of PDF or TIFF documents and Court XML Policy.

"Part V Additional Lessons Learned" provides new lessons learned and broader observations and advice not included in Lessons Learned I. This part suggests "picking low-hanging fruit" by focusing on electronic filing transactions that have characteristics that make them easier and quicker to implement, less risky, and more valuable from an automation perspective. This part also suggested developing a standards-based distributed system and to start developing sooner rather than later.

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Part I. Introduction

Georgia Courts Automation Commission's ("GCAC") mission is to encourage and facilitate automation in courts in the State of Georgia. In furtherance of this mission, GCAC sponsored a Court Filing Interoperability Pilot Project ("Interoperability Pilot" or "Georgia Pilot") that began in 1999 and concluded in December 2001. The purpose of the Interoperability Pilot was to provide Georgia courts and attorneys with proof-of-concept of electronic court filing and to better understand the need for, and barriers to, developing court filing systems and standards in Georgia.

The Pilot had two phases. Phase I completed in July and August 2001. Phase II completed in November 2001. A lessons learned ("Lessons Learned I") document was published on December 4th, 2001 that detailed the following:

- Definitions
- Pilot Objective
- History
- Gathering Information and Selecting Participants
- The Pilot
- Technical Agreements and Issues
- Court Rules
- Analysis
- Conclusions

If you have not already read "Lessons Learned I," it is suggested reading. "Lessons Learned I" and a number of companion documents can be found on the Georgia State University Electronic Court Filing website at http://e-ct-file.gsu.edu/CourtFilings/Interoperability/.

This document, "Lessons Learned II," is an update on "Lessons Learned I." This document provides an update on events and installations done since the initial pilot. Although the pilot is over, GCAC and others have continued to leverage technology and experience developed during the pilot to build or enhance new systems.

This document includes the following new definitions:

- Message
- Form
- Electronic Document or Document
- XML Document

For a complete list of definitions, see Lessons Learned I.

Part II. Definitions

1.1 Message

The term "message" means a set of data sent from one information system to another information system without an associated stylesheet. A message is for machine use, not human use. The terms "message," "form," and "document" have different meanings. The data format of a message should be well-defined, structured, and tight. An XML Filing, as the term is used in this document, is a example of a message.

1.2 Protocol

A "Protocol" is two or more messages sent to and from information systems based on a set of agreed rules. Protocols may be simple or complex. Protocols may include messages, forms, documents, or other types of information within them. Legal XML Court Filing 1.0 is a protocol that specifies how to send an XML filing message and an XML confirmation message. The XML filing may have a form or a document within it.

1.3 Form

The term "form" refers to a type of "document" that contains fill-in data fields and, most often, associated field labels. A form is for human use and would be authored by a human. A "form" and a "document" are not synonymous terms.

1.4 Electronic Document or Document

The term "electronic document" means any type of electronic document in any format (e.g., Microsoft Word, Adobe PDF, a TIFF image).

An "electronic document" is different than an "XML document." An "XML document" plus a "stylesheet" is equivalent to an "electronic document." Unlike forms, documents include a large amount of free-form prose (or what technicians often called "unstructured text").

1.5 XML Document

The term "XML document" is used synonymously with the W3C's definition of an XML document. [1] The term "XML Document" refers to an "xml instance document" or what the W3C defines as an "XML Document." The term "XML-based document" refers to an "electronic document" made of an XML Document and a stylesheet.

[1] See XML 1.0 <http://www.w3.org/TR/1998/REC-xml-19980210#sec-documents>.

Part III. Background

Georgia Interoperability Pilot

In the original Georgia Interoperability Pilot, four vendors and three court middleware installations successfully exchanged Legal XML Court Filing 1.0 XML Filings and XML Confirmations.[2] The four vendors were:

- @Court
- Counterclaim.com
- E-Filing.com
- Verilaw

The three middleware installations were:

- Douglas County Superior Court (@Court)
- Chatham County State Court (E-Filing.com)
- Whitfield County Superior Court (Verilaw)

During the Pilot, @Court installed middleware in Douglas County Superior Court. @Court's middleware communicated with a Visual Basic .dll ("SUSTAIN API") developed by GCAC using the SUSTAIN Software Development Kit. The .dll, in turn, opened new cases and filed documents into the Douglas County SUSTAIN case management system.

E-Filing.com installed middleware, its EStamp server, and its EStamp client in Chatham County. Verilaw installed its system in Whitfield County. The court assigned to Counerclaim.com withdrew from the Pilot. As a result, during the pilot, Countercliam was only able to send XML Filings and receive XML Confirmations.

In Phase II of the original pilot, all four vendors filed XML Filings into the three middleware installations and received XML Confirmations in return. In December 2001, subsequent to the pilot, @Court could no longer maintain its middleware. At the same time, the Douglas County Superior Court and the Georgia Department of Human Resources initiated a Child Support E-Filing project. The result was that E-Filing.com moved its system into Douglas County to replace @Court's system.

[2] In the Lessons Learned I document, it was reported that only two middleware installations received Court Filing XML and returned resulting Confirmation XML. Subsequent to the publication of Lessons Learned I, Verilaw provided the E-CT-Filing Project written evidence that E-Filing.com posted Court Filing XML to Verilaw middleware and received an XML Confirmation in response. Accordingly, this document varies from Lessons Learned I in reporting that three middleware installations successfully exchanged Legal XML Court Filing 1.0 filings.

In December 2001, two other events occurred that impacted interoperability testing. First, GCAC needed Legal XML Court Filing 1.0 compliant middleware for its juvenile electronic filing project, also in Douglas County. Second, Tybera Development Group came forward with a middleware installation and expressed interest in conducting interoperability tests with other vendors.

As a result of these events, two more interoperability tests were done among vendors in January and February 2002. These interoperability tests will be referred to as Interoperability II and Interoperability III and are described more fully below.

Juvenile E-Filing

In April 2001, Georgia began planning a Juvenile Electronic Court Filing Project. The Juvenile Project's goals are to:

- Electronically file documents and filing information into Douglas County Juvenile Court's SUSTAIN case management system,
- Pilot the use of XML-based documents and an XML editor, and
- Utilize reusable, configurable components that can be easily rolled out to other Georgia juvenile courts.

The Juvenile Project differs significantly from the Interoperability Pilot in that XML-based forms and documents, rather than PDF or TIFF documents, are being filed into the court. What is similar about the Interoperability Pilot and the Juvenile Project is that the filing components developed during the Interoperability Pilot are being reused in the Juvenile Project. Indeed, it would be impractical to build an entirely new e-filing system simply because XML-based forms and documents, rather than PDF or TIFF documents, are filed into the court. This document, therefore, refers to the Juvenile Project in the context of interoperability and e-filing. A future lessons learned documents will provide full details of the Juvenile Project.

Child Support E-Filing

Historically, the Georgia Department Human Resources has prepared and filed child support cases in bulk using a mainframe document generation system that outputs Word Perfect documents. The Word Perfect documents are the edited, printed, and filed in the court as paper documents.

In December 2001, GCAC, Georgia State E-Filing Project, and E-Filing.com began developing and implementing an electronic filing system to automate child support filings. As of this writing, the system has been implemented in Douglas County Superior Court. Several successfully tests were done in February, March, and April 2002. Live filings began May 17th, 2002.

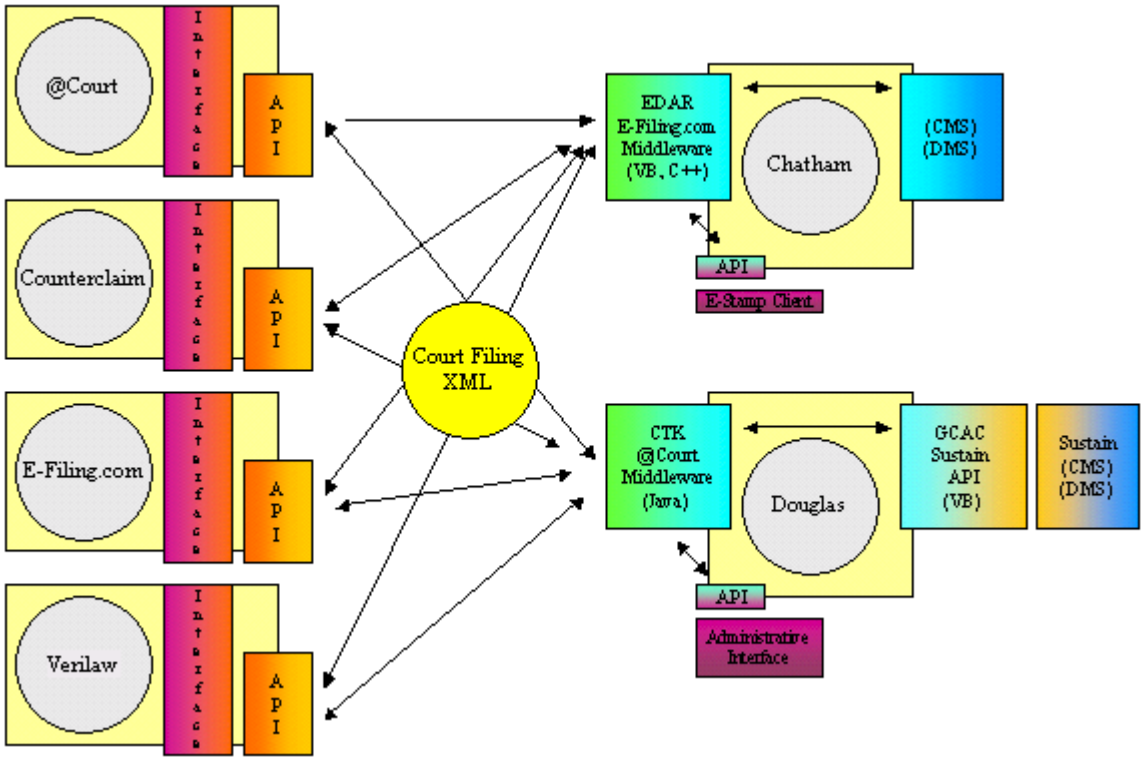
In the Interoperability Pilot, it was anticipated that any type of civil filing would be filed by any party into the Douglas County Superior Court. The @Court system was designed to accommodate all civil filings. For a number of practical reasons, when E-Filing.com

replaced @Court in Douglas County, the scope of filings shrank from all civil filings to only Child Support filings.

Part IV. Interoperability I, II and III

Interoperability I

The following diagram shows the configuration of vendors, courts, and technical components developed and used during Interoperability I.



The gray circles on the left represent (a) @Court (b) Counterclaim.com (c) E-Filing.com and (d) Verilaw. Each of these vendors used a web-based interface that allowed an attorney to electronically file a document into the court. These interfaces accommodated "one-off" filings, as that term is defined in Lessons Learned I.

The yellow circle in the middle represents Legal XML Court Filing 1.0 XML Filings and Confirmations. Each of the vendors passed XML Filings and received XML Confirmations. The vendors sent and received XML over HTTP using both Java-based and Microsoft-based (ASP, VB, C++) implementations. The vendors did not use SOAP[3].

At the top right corner, Chatham County used E-Filing.com's "EDAR" middleware. EDAR received an XML Filing, unencoded the base64-encoded document (a PDF)

[3] See http://www.w3.org/2002/ws/.

within, converted the document to a TIFF and then sent the document to the E-Filing.com EStamp Client ("Administrative Interface") where it was electronically stamped and filed by the court clerk. The EStamp client stored electronically filed documents on the Chatham server and synchronized those files with a repository on the E-Filng.com server. It is understood that that data also passed to the Chatham County Case Management System.

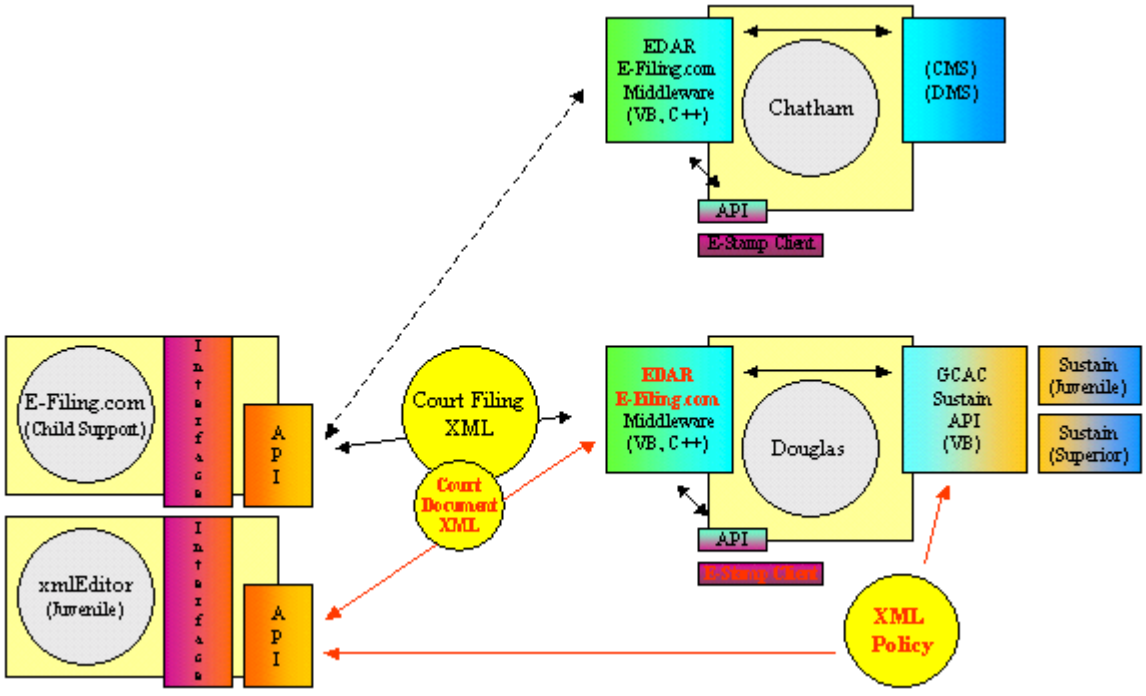
@Court's middleware installed in Douglas County functioned similarly to E-Filing.com's middleware except that PDF documents were not converted to TIFFs and, although there was an attempt to add PDF-stamping functionality to @Court's Administrative Interface, the technology never fully functioned.

In Douglas County, @Court's middleware (java-based) called GCAC's SUSTAIN API (a VB .dll) that, depending on the API call, opened a case and returned a case number, added parties, or added a document to the SUSTAIN case management system.

Verilaw is not depicted in this diagram as having a middleware installation. However, as mentioned earlier in the document, Verilaw did have a functional middleware installation during Interoperability I.

Interoperability II

The following diagram shows the configuration of vendors, courts, and technical components developed and used during Interoperability II.



In Interoperability II, Child Support test TIFF documents were filed through an E-Filing.com interface, while juvenile XML documents were filed directly from the xmlEditor. In both cases, the documents were wrapped in a Legal XML Court Filing 1.0 envelope with relevant filing information.

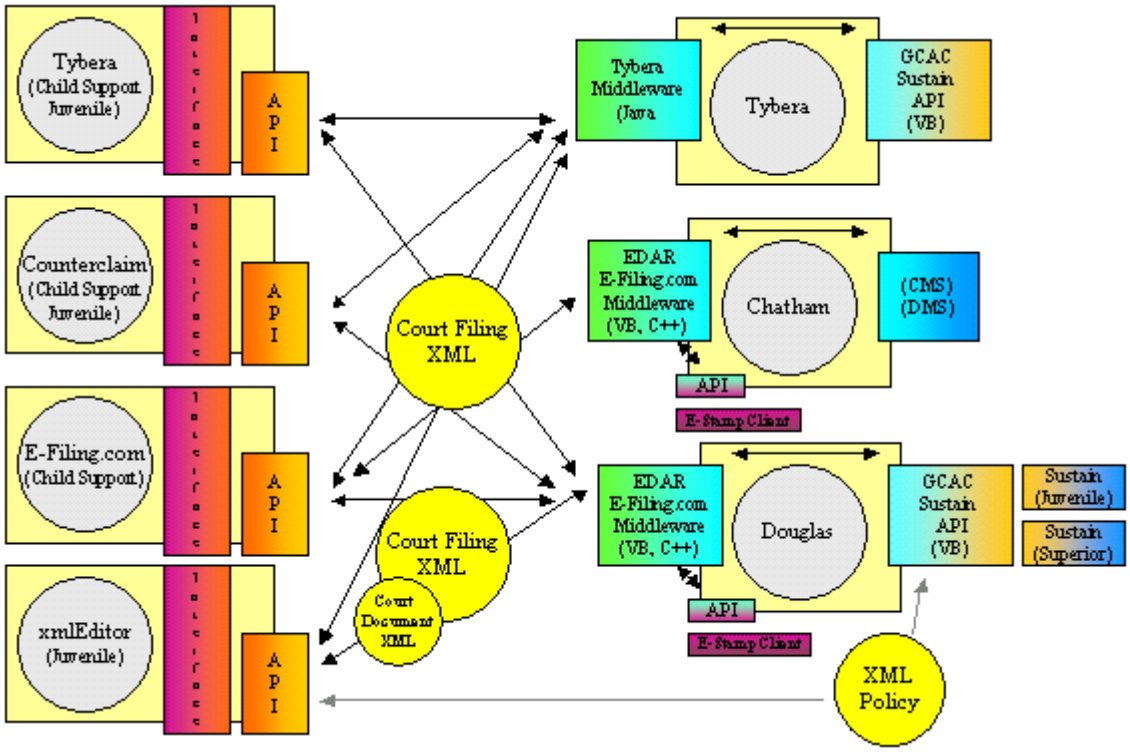
Both child support and juvenile documents flowed through E-Filing.com's EDAR middleware. In the workflow, Juvenile XML documents were converted to TIFF documents so they could be stamped using E-Filing.com's EStamp client (which only stamps TIFFs). GCAC modified the SUSTAIN API to route filings to either the Superior Court's SUSTAIN case management system or the Juvenile Court's SUSTAIN case management system. Both SUSTAIN implementations live behind the Douglas County Court System's firewall, but they are separate installations on separate servers.

In the Superior Court, SUSTAIN received a stamped TIFF document, which can be accessed via the SUSTAIN interface. In the Juvenile Court, SUSTAIN received both the stamped TIFF document and the (unstamped) XML document.

In addition to utilizing XML documents, another distinction between Interoperability I and Interoperability II is the use of "Court XML Policy." In the juvenile project, Court XML Policy is generated from the SUSTAIN case management system and used by the xmlEditor to populate the filing interface with information such as case categories, document types, and filer types.

Interoperability III

The following diagram shows the configuration of vendors, courts, and technical components developed and used during Interoperability III.



Interoperability III differs from Interoperability I and II in the addition of a new vendor (Tybera) and a reconfiguration of various components used previously. Interoperability III demonstrates the true power and flexibility of developing an architecture of interoperable components and connecting those components using XML. Indeed, with very little effort, a new vendor was able to successfully insert itself into the system simply by adhering to existing system standards. In the future, like the success of distributed nodes on the Internet, it can be expected that successful integrated court and justice systems will evolve based on this type of distributed model.

Part V. Additional Lessons Learned

Pick the Low-Hanging Fruit

The Lessons Learned I document reported that Phase II of the Interoperability Pilot was "partially successful." Although the technology worked to pass XML-formatted data between systems, GCAC and the vendors did not have sufficient resources to fully integrate payments systems or robust security. Although there were a number of practical reasons for reducing the scope of electronic filing in Douglas County Superior Court from all civil filings to only child support filings, one important practical reason was that Child Support cases, for reasons discussed below, have proven to be relatively easy-to-pick "low hanging fruit."

One of the lessons learned reported in Lessons Learned I was that "mass filing" proved to be more successful than "one-off" filing. As has become clear, "mass filing" is only one

of a number of characteristics that makes a particular type of filing "low hanging fruit." Other characteristics include:

- **Volume of Transaction**: High-volume transactions should be prioritized over low volume transactions.
- **Simplicity**: Simple transactions should be prioritized over complex transactions.
- **Security**: Transactions that require relatively less security should be prioritized over transactions requiring relatively more security. For example, Government-to-government transfers or transfers involving a few parties with existing trust relationships should be preferred because a relatively few existing trust relationships provide more inherent security than a large number of anonymous relationships.
- **Sophistication of Parties**: Government and large private parties are often more sophisticated and have more advanced technology than individual filers or small organizations. If non-government parties are involved in the transactions, exchanges that involved sophisticated parties, such as banks or large law firms, should be prioritized over less sophisticated parties.
- **Risk**: Low risk transactions should be prioritized over high-risk transactions.
- **Implementation Speed**: Especially for new systems where the technology has not been proven, the ability to quickly implement a system may have psychological and political benefits to those involved in a project, those observing the project, and those who might fund future projects.
- **Subjective Importance**: Transactions that are political or otherwise subjectively important to stakeholders or to the public should be prioritized over less important transactions. It is important to gain momentum by achieving quick wins and a good reputation.

Child support cases meet nearly all of the criteria above. Child Support cases are high volume. Child Support cases are relatively simple. At least it can be said that concentrating on only one type of filing, rather than all civil filings, has been easier. Although security is always a concern, risk is mediated because there is only one filer, the Georgia Department of Human Resources, rather than many. The Child Support office, as a government agency, is a sophisticated and has access to government technical support that individual filers or small firms might not have. Although there have been delays, Child Support has been implemented with good speed. Finally, automating the child support recovery process has significant subjective and real-world importance, since it may actually facilitate the collection of money from dead-beat-parents.

Even in jurisdictions with significant resources and especially in jurisdictions with fewer resources, electronic filing projects should focus on filing type that meet some or all of the above criteria.

Develop a Standards-Based Distributed System

A decade ago, give or take, "court automation" focused on developing systems inside a court. Today, many jurisdictions seek to implement technology that link existing, often very different, systems into a much broader integrated court and justice system.

Large integrated justice systems can be viewed as a whole (and planned, built, and funded as a whole) or viewed as individual pieces that fit together (and planned, built, and funded as individual pieces). For a number of practical reasons, GCAC has never undertaken to develop or implement one large integrated court system. Instead, GCAC has focused on building discreet pieces of the whole, while always focusing on using, developing, and reusing standards and standards-based technology.

The distributed nature of this approach is evident from the Interoperability diagrams above. Notice in the diagrams above, there is no centralized message exchange system. There is no centralized database. There is no centralized logging. There is no centralized security. There is no centralized authority. Significantly, there has been no need for millions of dollars in funding, although adequate funding is necessary, especially for qualified and motivated human resources.

An important part of this system is the use of industry standards, especially information exchange standards. The use of information exchange standards means that it is not necessary to develop and harmonize one system, one set of data, one set of requirements, or one set of business rules for all organizations. Rather, it is enough to allow everyone to use and develop systems tailored to individual organizational needs, but require information exchange to happen using agreed data standards (e.g., XML formats) and exchange mechanisms (HTTP, FTP, or SMTP over the Internet or an Intranet).

Start Now

Planning and organization are very important for any project. GCAC has always planned its projects in advance and with much consideration. GCAC has been, however, very aggressive is simply starting a project, implementing, and moving forward with new projects.

Although there are always risks in implementing ahead of, or on, the "bleeding edge," the results in Georgia have been excellent. GCAC continues to have successes in its projects. Practical experience and lessons learned from early projects compound and help advance and speed current projects. Technology is evolving and becoming better. None of this progress could have been achieved had GCAC not simply started.

Do not wait for the following:

- Perfect and Complete Data Analysis and Modeling
- Perfect and Complete Requirements Analysis
- Perfect and Unanimous Political Harmony
- Perfect and Complete Standards

- A Large Sum of Money
- A Still Target

None of the above has been done by GCAC or in Georgia and none of it was required to successfully start building what is becoming a better and better system with more and more participants. This is not to say do not undertake these tasks or dream of this state of affairs. Indeed, all projects should undertake these tasks. However, experience has shown not only that a still target will never exist, but also, and more importantly, that practical experience developing systems informs and illuminates requirements rather than the other way around.

Moving forward with practical implementations does not mean there should be no planning or a lack of vision. The future must be considered. The following items should be given strong consideration before moving forward:

- Use and Development of Standards or a Framework for Standards
- Modularization and Componentization
- Version Control

In Georgia, there has been great focus on these items and it has been this concentration that has made technology implemented in Georgia interoperable, reusable, and successful.