SUSTAIN Over CITRIX

Issue:

The court system in the State of Georgia had a need for a fast and secure connection to their case management systems with a low barrier to accessibility. The goal was to find an alternative that would provide state wide accessibility and allow the system and all maintenance requirements to be housed here in Atlanta. Cost, ease of implementation, and the mitigation of unknown factors were primary objectives in making a purchase.

A decision for the method and means of accessibility had to be made as well as selection of the actual case management system.

Considerations:

Because the scale of this project extended state-wide, there were a variety of questions that needed to be considered. Both the connection and the case management system itself had to be examined. The deliberations revolved around the scope of the project, technical needs and limitations, education and time frames.

- o How many courts are involved? Now/6 months/1 year/3 years/5 years from now?
- o How many users? How active are the users expected to be on the system? How many users are expected to be concurrently logged in?
- o What technical parameters are we working with? Internet connectivity? Future cost and maintenance of the connections?
- o What are the current systems that are being used in the courts to be served? What kind of Training will be needed?
- o How many remote connections can the case management database support? How much and how fast is this database expected to grow?
- o Monetary parameters? Charges to the courts for the use of this service?
- o Time considerations? Urgency of the project?
- o Indigent Defense offices that open in 2005? Release dates?

Decision:

Of the options that were available to the AOC, a _Citrix_ implementation for accessibility was the most complete and viable option which met the needs of the AOC and the Judiciary. The case management system that was determined to be the most suitable, feasible and practicable fit was _Sustain_.

These decisions were based on numerous factors that were carefully scrutinized and repeatedly reviewed by the AOC. Proven accomplishments, fiscal constraints, time concerns, and peripheral factors all led to these choices and they are explained in further detail below.

1. The recent success of the PeopleSoft over Citrix implementation for the Georgia Technology Authority (GTA) was a definite determining factor in this decision. The seamless integration and launch of this initiative gave credence to Citrix as a possible solution to the needs we had at that time.

2. When House Bill 1EX was enacted the AOC was faced with an exorbitant amount of programming changes required to adjust existing applications. In order to be compliant and perform the mandates of this bill, the AOC was required to expend a great deal resources to realize this. With the added burden of limited staff these tasks proved to be crushing. AOC IT did not want to experiment with unfamiliar software and reinvent processes that were already in place and purposeful.

3. The ability to promote standardization, just like PeopleSoft, also supported the decision for Citrix. The Judiciary is an extremely decentralized entity and the use of Citrix advanced the AOC's initiatives.

4. Education and training for any new software was a major topic that was considered. Citrix had a minimal learning curve for both implementation as well as integration into the courts. The procedures for employing Citrix had already been realized through the PeopleSoft over Citrix project and the AOC could benefit from available known practices. The decision to use Sustain as the case management system was also supported under this premise because it was an established and proven system within the courts. Preparation for the use of this software was alleviated by it's presence in the Judiciary.

5. The case management and connectivity decisions also faced an implicit approval by the courts. The AOC recognized that these two resolutions had a high level of acceptance by the courts.

6. The use of Citrix also alleviated the financial commitments in other areas. These savings were recognized in time and travel required to support the case management system. Citrix supported a responsible use of taxpayer dollars by satisfying the role that was needed as well as lessening the supplementary funds essential to the supporting of the product. Added expenses for new and different software choices would exponentially inflate costs of this project.

7. Another key element in making the final decisions was efficiency. Citrix and Sustain are both scalable and resourceful software packages which enable multiplicity within the Judiciary. Sustain offered a multitude of advantages because of its confirmed ability to perform the obligations of the case management system thus increasing effectiveness and reducing the expenditure of resources testing new systems.

In review, the decisions were made based on Total costs of Ownership (TCO), efficiency, availability required resources, legislative compliance, and pas experiences and knowledge.

A comprehensive report for this project was submitted to Jane Martin as a formal compliance for the grant. The AOC had to replace a large number of MCIS, PCIS, TCIS installations after HB1EX was passed and was threatening clerks with jail time if they didn't comply. Instead of rewriting the access based 'CIS programs, it was decided that the fastest way was to put them on Sustain on Citrix so that our agency was covered in that we offered a compliant case management system that could treat the fees as required by House Bill 1EX. As summary of this report follows:

1. Use of State of Market technology, innovations in use
   a. Uses widely available technology
      i. Citrix widely used
      ii. Sustain is #1 installed case management system
      iii. XML now a industry standard for data transfers
   b. Innovative Uses
      i. Takes a currently small network application and allows it to be used as a centrally distributed and integrated justice type application with better security, reliability, availability, and connectivity while allowing local courts to remain independent of other courts and autonomous in execution of daily activities
         1. Security
            a. Uses stronger authentication means
            b. Encrypts communications
            c. Managed Security of database, firewall, and auditing of resources
         2. Reliability
            a. Any front end server can connect to any database allowing for redundancy of access to front end
            b. Database servers clustered to not rely on single hardware point of failure and able to failover to backup server within seconds when needed to
         3. Availability
            a. Users can now connect from any PC. If their office is shut down for any reason, operations can still continue and be available independent of local office status.
            b. Users can work in multiple courts easily if they are assigned to multiple courts
               i. Allows for better use of staff.
                  1. Dynamic reallocation of workforce possible depending on court work load.
         4. Connectivity
            a. Connections made available to any PC with internet
               i. If public user is allowed, then John Q. Public can review data that they are allowed to as if at court kiosk.
                  1. Public connection can be limited to certain court kiosks if desired, though.
      ii. Allows for better allocation of resources

1. Instead of spending travel time to go physically to each court modifications, maintenance, and updates can be done at a central location to all databases.
2. Connections to other agencies greatly facilitated as databases are centrally located.
    a. Once one database is connected, the connection process can be applied to all databases much quicker and easier than if distributed
    b. Connections can be more robust and stable with better infrastructure and connectivity available than at local courts
    c. Faster response times to changes in reporting, in sending information in response to queries, and regular reporting processes

2. Overcome barriers to technology to technology integration and insertion, information integration, information sharing, payoffs to homeland security
    a. Barriers
        i. Lack of resources
            1. Human – Lack of
                a. To work on integration at local level
                    i. To support extension of application to integrate with other justice agencies
                    ii. To support maintenance, installation, updates of local applications
                b. Trained in advanced concepts
                    i. XML integration with applications
                    ii. API programming of widely used Sustain application
                    iii. Data mapping to standardized dictionaries (i.e. – GJXDD/GJXDM)
                    iv. Management of servers and server farms
                    v. Management of terminal services and connections
                    vi. Management of databases
            2. Human – Compensated by
                a. Centralized and concentrated resources
                    i. With greater access to installations fewer persons can do more work in less time due to repeatable standardized, controlled, stable, and accessible environment
                    ii. Concentrating the resources with correct training on a readily accessible, standardized, and controlled environment means less need for more full time employees with higher than average pay scales due to specialized knowledge and training being allocated thinly and ineffectively across a large number of inaccessible remote installations
                    iii. Courts maintain autonomy of operations, but have access to greater technology resources due to centralized

installations and have faster and more effectual integration with other justice agencies and public

        1. Operations remain the same, but allowing a concentration of human resources allows for faster implementation times for more courts with the court installations readily accessible, standardized, controlled, and stable

3. Mechanical/Software Code Related – Lack of
   a. Equipment needed for distributed connections to courts would be exceed costs of centralized installations
      i. Requiring comparable installations at each court would be unrealistic due to cost and implementation time
         1. Numbers of equipment needed would approximately quadruple along with time for set up and installation costs
         2. Server farm of shared front ends and clustered backbends would equal 4 main servers per court, plus integration connection servers instead of having courts able to share front ends and database servers with an redundant server per so many users instead of per every court.
   b. Maintenance of Equipment would exceed centralized installations
      i. Due to sheer number of servers, code changes, varied equipment, and varied code setups, maintenance would on site person per court, plus one to two backup field agents per group of courts versus group of three network persons, three software programmers, one crystal reports person, one database person, and three Sustain application administrators per large group of courts
      ii. Security, availability, and reliability would also be diminished greatly versus central installations
   c. Coding Updates would have to be distributed, secured, installed to each and every court installation
      i. Much more difficult due to repetition of procedure in unstandardized, relatively uncontrolled local environments with much more chances for unexpected complications due to environmental differences

4. Mechanical/Software Code Related – Compensated by
   a. Centralized and Concentrated Data Center
      i. Equipment can be of higher degree of quality in build and in configuration than would be possible at local court level with funding only allowing for minimal server configuration in hardware and software

1. Due to using concentrated server farms that serve multiple courts, funds can be concentrated to purchase better equipment
2. Due to less equipment being needed and using fewer larger servers, more robust implementations can be obtained such as load balancing of the front end servers and clustering of the back end servers to provide operations with greater reliability that would not be able to be obtained with local court installations and single court funding

    ii. Maintenance becomes much faster with standardized, controlled, stable and readily accessible installations

1. Once a patch or routine is created, it can easily replicated to other servers in the same datacenter

  b. Centralized Coding Repository and Distribution

    i. Code updates to XML interfaces and application API's can be secured, versioned, and distributed efficiently and faster than is available with local court installations

1. Code changes could be distributed by script as soon as ready to all courts instead of relying on local visits, local installs, or download and clean up tactics of allowing local court persons to download and install update packages and then rush to provide emergency service as needed when packages produce unexpected results due to varied installation environments

b. Pay offs

  i. All courts involved would receive access to Sustain API work and XML integration efforts faster and with less expenditures than possible with local court installations

1. API work and XML integration efforts would be made available to all courts involved as soon as ready

  a. Uniform Traffic Citation (UTC) transfers to DMVS would be the responsibility of AOC instead of local courts that have a proven track record of unreliable transmissions and reliance on older methods of transfer such as postal mail.

  b. Integration with sheriff and police offices would be facilitated by allowing groups of courts to leverage law enforcement software vendors to provide integration methods and data transfer methods by common means to courts

    i. Current sheriff office integration efforts, such as in Douglas county (and possibly Walker County), could be replicated to other courts as soon as sheriff office and law enforcement software vendors came on board and cooperated with integration efforts

      c. Large bang for the buck for touching largest portion of population in that smaller courts have greatest amount of contact with public

          i. More persons cycle through lower court levels due to traffic citations, marriage licenses, fire arms permits, minor infringements, etc.

          ii. Conversely, the lower courts are the least funded and most populous in that there are a large number of lower courts generating a large number of data and funding through fees, but due to the distribution, the funding and data is not currently harnessed easily or at all because of the distribution throughout the many courts.

      d. Courts are involved with a large portion of the justice process and are the conduit between the law enforcement and corrections agencies

          i. Courts involved from prosecution and some pretrial services to sentencing and sanctions to move the person and process from law enforcement to corrections

              1. Reference: http://www.ojp.usdoj.gov/bjs/largechart.htm

3. Goals and objectives, activities to accomplish, evaluation plan, metrics, risk evaluation

    a. Goals and Objectives

      i. Summary

         1. To host a local court type application as a centralized and accessible type application on a secure, reliable, and available platform that will facilitate the use of less resources, and facilitate the application of data transfers methods already developed to all courts involved.

    b. Other items to be provided as soon as finished.

4. Schedule

    a. To be provided when finished

5. Degree of involvement of multiple first responder communities

    a. With work on project work and implementation, minimal involvement

      i. Most involvement will come from agreements to send data in a standardized way.

    b. With results of project:

      i. Law enforcements will be able to communicate with courts to transfer arrest records and to receive criminal histories of particular offenders from the dispositions of court cases

      ii. Largest Benefit - Criminal histories will be better reported, more accessible, and available to those involved with first response activities

         1. Examples –

           a. Uniform Traffic Transmissions to DMVS

           b. Metric databases with collected statistics and histories available for use by secured and authenticated agencies

              i. Selected Transfers to Georgia Crime Information Center (GCIC) from metric databases

        c. DMVS and GCIC information will be more up to date and readily available sooner due to better reporting by the courts involved with project.
            i. Both drawn upon by Homeland Security for information
       2. Reports from lower courts also will create larger amounts of information about larger amounts of the population due to interfacing with the lower courts due to traffic and minor violations being handled

6. Degree of involvement of multiple levels of government, jurisdictions such as city, county, state, multi-state, Federal
    a. Centralized applications will cross all levels of government from municipal to State
       i. From small municipal courts and magistrate courts the data will be flowing to be available on a statewide level
       ii. The project will require the cooperation, work, and funding by the local jurisdiction up to the state level
       iii. DMVS and GCIC databases fed by courts in turn feed national level databases such as NCIC

7. Involvement of private sector organizations
    a. Directly
       i. Will require involvement of private software vendors to provide ability to interface with their software
          1. Such as with the sheriffs and their "Eagle" software package
    b. Indirectly
       i. Not sure about this. Not certain private organizations would be involved
          1. Courts tend to have a buffer with direct private organization involvement due to criminal cases having to be brought to court by some law enforcement agency
          2. Can't legally sell this data to private organizations and although public record, certain minimal barriers are still likely to exist such as kiosk in court house being only publicly available search terminals.
       ii. Grass roots organizations such as citizen's watch wouldn't be cleared to look at much data except what is made available at public kiosks currently and would go through police to bring charges.
       iii. The legal field would be involved in that they would now be able to e-file once the OXCI application was implemented for the Sustain courts involved.
          1. Not sure if this helps with the Homeland Security case directly though.

8. Ease of ability to apply to other communities nationwide, associated costs
    a. Ease
       i. Ability to transfer general setup would be quite easy on a state level.
          1. If no centralized case management system, take a capable local court application, centralize it, publish it out to the courts (through Terminal Services or Web Application), create or adopt standard interfaces to application that can be replicated (adoption of standards from the World Wide Web Consortium(W3C) for XML basic building blocks, Organization for the Advancement of Structure Information Systems (OASIS) for XML uses, the Office of Justice Programs (OJP) for the vetted and standardized dictionary and data model for justice use of the

Global Justice Data Model and Data Dictionary would provide for the basics needed to build the basics of the data exchange interfaces)

2. Or, if having a standard case management system, create standard interfaces and transmission methods.
    a. Standards for data transmission into and out of courts created here in Georgia can and some are being submitted to standards organizations
        i. Example – OXCI
            1. The OXCI implementation for Sustain will be the model filing method that will be submitted as an implementation of the next OASIS Court Filing specification which will then be submitted to the National Center and the Conference of Chief Justices for approval
            2. The use of the Global Justice Data Dictionary and Data Model (GJXDD/M) to create the subset schemas, the SOAP envelope and attachment transmission method are applicable to many other forms of court related data transfers and integration efforts other than just E-Filing and will be slightly modified to allow for transfer of more than filings into and out of the courts.

3. All software, hardware, and technology used if widely available and generally accepted as standards for each type of use
    a. Side note, a truly web interfaced product would be more efficient as it would raise the abstraction level between hardware and software to an even higher level of independence from each other, but a Citrix terminal services type implementation is much faster to implement and does not require a large programming effort to produce the same effect of allowing the applications to be available over the web from a centralized source.
        i. Terminal services is a short cut as it takes a non remotely distributable application and enables it to be presented and interacted with from a remote location, even initiated from a web browser, without hardware dependence.
    b. The skill set for XML, Citrix, Visual Basic, and Open Database Connector (ODBC) work is wide spread with certifications available for Citrix, Visual Basic, and certain databases available in case agency has to acquire new staff and needs a minimum level assurance of basic skill set knowledge.

b. Costs
    i. For hardware for specific application
        1. See calculator on spreadsheet provided with budget information
    ii. For other costs, would be determined by availability of application that could be distributed, central agency available to handle application, existing infrastructure of central agency, existing capacity of central agency

1. Main Factors that would increase cost
   a. Data Center capacity expansion
   b. Staff expansion and training
   c. Application acquisition or adaptation
9. How sustained without additional grant money
   a. The main expenditure of the project would be the initial cost of the hardware.
      i. Current staff is being used for project and was an expenditure before and after project.
      ii. Expansion of the project to include other courts would be very minimal compared to the initial expenditure to build the foundation
         1. Small courts may be able to be added to existing foundation, once built, if remaining capacity is not exceeded.
10. Benefits to Homeland Security
   a. See above responses
      i. Particularly:
         1. Section 2, b.
         2. Section 1, b, 3
         3. Section 5, b

Additional advantages of Citrix can be found throughout the Web and various publications. The following information has been compiled for explicatory purposes.

Citrix Systems is the global leader in access infrastructure for the on-demand enterprise and the most trusted name in enterprise access. Citrix … products offers both access to centralized applications through the Citrix MetaFrame Access Suite and remote access to individual desktop computers through the products of the Citrix Online Division.

The Citrix MetaFrame Access Suite is access infrastructure that:

- Gives workers secure, easy and instant access to enterprise applications and information from anywhere, at anytime, using any device, over any connection.
- Enables IT staffs to manage heterogeneity by centrally consolidating applications, simplifying their deployment, management, monitoring and measurement.
- Ensures that the right people have access to the right resources to protect the security of enterprise information assets.

More than 160,000 organizations worldwide rely on the MetaFrame Access Suite to do their jobs, and Citrix Online products are used by another 4,900-plus companies worldwide. These organizations include the world's most successful companies – 100% of the Fortune 100, 99% of the Fortune 500, 97% of the Fortune Global 100, and 92% of the Fortune Global 500.

Access Infrastructure for Government

Protecting critical infrastructure takes a combined and coordinated effort.
Today more than ever, government depends on the ability to access, share and act on vital information—across functions, agencies and borders. Citrix Access Infrastructure Solutions for Government provide public servants seamless, secure access to the mission-critical applications and information required for effective response to emergencies, recovery from disasters and delivery of basic services. From centralized and scalable Citrix MetaFrame Presentation Servers, applications and information are easily Web-enabled and delivered to any device, at any location, over any connection—including low-bandwidth and wireless. Worker productivity and efficiency are increased, while increasing citizens' satisfaction and keeping the costs of IT infrastructure low.

- Provide secure, consistent access to government applications and information to a geographically dispersed workforce
- Increase administrative efficiency and leverage existing infrastructure
- Provide a higher level of service to citizens and employees
- Enable authorized and secure information and application sharing across agencies
- Provide critical infrastructure protection in the event of a planned or unplanned outage

Application Deployment in Government
Ensuring authorized, secure and consistent access.
Citrix® Application Deployment Solutions instantly and securely deliver CRM and government ERP applications as well as real-time information to any device, from any location, over any connection. Instead of agency IT staff taking weeks to configure every PC in every department, applications are

installed just once on a centralized server—and made immediately accessible over the Web, with no rewriting of code, no change in user interface, and no loss in performance. Older PCs and Macs can access the latest Windows®, UNIX® and COTS applications, helping budget-strapped agencies avoid the cost of replacing hardware.

The Citrix MetaFrame Access Suite is your application deployment solution. The suite is the world's most widely deployed presentation server — it centralizes access to applications and information and enables IT staffs to deliver, manage, monitor and measure enterprise resources on demand. Each component product solves a particular access challenge, while all of the products work together seamlessly to power the on-demand enterprise and provide an application deployment solution.

U.S. State & Local Government
Access Infrastructure Delivers Speed and Security for IT Resource Consolidation.
The information technology executives and policymakers of many State and Local Government are taking bold steps to improve the management of their IT resources and the provided services. They are spurred in part by economic conditions and resulting reduced budgets, and driven by issues such as Homeland Security, retirement of key personnel, privacy and security concerns, and pressure to improve services. To effectively meet these evolving conditions IT executives are advocating the consolidation of information technology resources. This is seen as a best practice to reduce and optimize infrastructure and staff, leverage economies of scale, expedite critical inter-agency collaboration and information sharing, exert greater control over confidential or sensitive data and reduce the Total Cost of Ownership.

Access infrastructure software from Citrix Systems, Inc. enhances IT resource consolidation by ensuring that the right people get access to the right information at the right time — rapidly and securely. The Citrix® MetaFrame® Access Suite provides government workers — including mobile public safety officials, public works employees in the field, branch office workers, and first responders at any location — secure and authorized access to the mission-critical applications and information required for effective response to emergencies, recovery from disasters and delivery of basic and critical services.

Key benefits realized by State and Local Government agencies include:

- Authorized, secure information sharing among governments and across different agencies and departments.
- Improved security of government information assets.
- Greater, more effective cooperation among governments and agencies in pursuing priorities such as homeland security.
- Ensures secure, authorized access to all applications and data.
- Maintains service levels and maximizes use of IT professionals.
- Extends life of existing IT investments.
- Reduces infrastructure management costs.
- Improves the time to completion of Consolidation efforts.

Information derived from http://www.citrix.com/ and subsequent "Government" links.