

An Approach to Reducing Technology Costs for the State of Connecticut

Executive Summary

Technology costs can be reduced by startling percentages, if the State of Connecticut would step out of its current technology model, and instead follow the lead of many other entities, both public and private: contracted services, where appropriate. Ten years ago, in order to make contracting cost effective, all technology functions had to be ruthlessly, and impractically, combined. With today's technologies, the concepts of software as a service and leased technology can be effectively leveraged across an enterprise both quickly and with cost savings as high as 98% in some platforms. This approach proposes that the Agencies, both Executive and in all branches of government, independently migrate to a specific set of serviced productivity software and leased technology platforms.

It further proposes that the Executive branch integrated network be dissolved, in order to provide less costly networking and to provide redundant access points to critical technology. The DOIT network requires that no aligned Agency may have its own Internet connection, as well as no connection to other Agencies or third party collaborators except through its DOIT connection. Thus, if the connection to DOIT is lost, the Agency cannot perform any financial or administrative functions until the connection is restored. A little known fact of networking is that even establishing a second data path to DOIT will not provide redundant access, since any line between the same two points will travel over the same wire if provided by the same standard provider. Thus, Agencies that are trying to provide Disaster Recovery by establishing multiple lines into DOIT, are simply wasting the State's money. If the Statewide network is dissolved in favor of independent Agency networks with at least one Internet access, the larger Agencies in particular will be able to have multiple access paths to critical services for less money than the specific lines limited to DOIT access.

Finally, this approach proposes the dissolution of the DOIT Agency, returning the Technology Managers to the Agencies that fund those positions, in order to encourage a greater care with their Agency's priorities and budgets. The DOIT executive structure costs the State almost half a million in PS dollars and benefits, which will not be required if this approach is adopted. The productivity software services such as Exchange, still require Agency administrators, in addition to supporting DOIT administrators. The network services require expensive, direct lines to DOIT, instead of less expensive, multiple access points onto the Internet. Again, the Agencies must still maintain Communications staff, network monitoring and security teams, while supporting a redundant management level at DOIT. The Information Technology management should be integrated into the Department of Administrative Services, under 1 new DAS Deputy Commissioner, preferably an existing DOIT Director, one who is of the few DOIT executives who understands compromise and cost reduction, while also actually completing projects and improving staff attitudes.

Approach Specifics

I. Email and Calendar

The first technology to be contracted services should be email, web browser access mail and calendar, shared calendar and global address book. The Executive Agency standard is Microsoft Exchange. The average cost per mailbox for any entity over 20,000 is normally \$8.00 per mailbox per month. This rate includes the licensing, administration and hardware costs. There are contracted professional solutions for email that can provide everything that Exchange can provide at a cost of \$0.75 per month. These solutions do not provide for the replication of Notes and Tasks --- functions that on average only 7% of users in any Exchange environment use. For those persons who do use the Tasks and Shared Tasks functionalities of Exchange, there are several professional Task solutions that average \$.50 per user. This document assumes only 30,000 mailboxes through-out the State, which yields:

$$8.00 - 1.25 = 6.75 * 30,000 = \$202,500 \text{ per month or } \mathbf{\$2,430,000 \text{ per year.}}$$

Again, if the State closed network is eliminated, larger Agencies will be able to have multiple access points to the Internet, and could switch over to backup access points if their primary goes down, allowing superior up time. Many of these services provide long term storage, archive search and restore, consistently updated spam and virus protection as well as redundant servers and databases, giving the State a Disaster Recovery option for administrative functions, which it does not have presently.

II. File sharing

The next technology to review is shared document space. Most analysts agree that file server technology costs \$25 - \$50 a month per user, depending on the size of the organization and the amount of storage allowed. Additionally, few organizations in the State have access to their files from outside their Agency. However, there are many technology services available today, that guarantee security of data, tremendous backup and service levels for less than \$20 per month per user, with outrageous amounts of storage. Additionally, these services can give access to information over secured connections from a web browser anywhere with an Internet connection --- without additional cost to the Agency itself, eliminating the need for Virtual Private Network keys or high-risk holes in the State network. Again, assuming only 30,000 users, the saving yields:

$$\text{Average of } \$37.50 - \$20.00 = \$17.50 * 30,000 = \$525,000 \text{ per month or } \mathbf{\$6,300,000 \text{ per year.}}$$

Additionally, many of these services provide document management or content management services, as well as user-administrated third party file sharing areas, which for no extra cost will give the entire State basic file sharing and collaboration both Intra-Agency and with third parties, services costing \$50 - \$100 per user in private installations of high-end file management applications.

Again, assuming the DOIT network is eliminated, so that Agencies can have multiple, less expensive Internet access, the Agencies will again gain the redundant access to

critical information, at a reduced cost. Many higher-end providers (\$20 instead of \$15), already incorporate redundant servers and high-speed backup and restore services, which will provide the State with a Disaster Recovery capability for critical information, which it currently does not have, at a reduced cost per user.

III. Database applications

The next technology is database applications. DOIT's current pricing for Oracle is a baseline of \$20,000 per month. There are several application hosting companies offering Oracle for \$400 - \$600, complete with Database Administrator services or an Agency could elect to utilize their own Administrator. There are dozens of hosting companies offering Application servers to pair with their database services for \$50 - \$100 a month, while DOIT's cost is \$290 - \$1400 per month. Again, backup and redundancy is built into most of these services. Using a ridiculously low estimate of only 30 Oracle applications through-out the State (including CORE-CT), the yearly cost savings is:

$$\$20,000 - \$600 = \$19,400 * 30 = \$582,000 \text{ per month or } \mathbf{\$6,984,000 \text{ per year.}}$$

Of course, because these providers have multiple servers and multiple access points, if the Agencies are able to have several Internet accesses, then the State will have Disaster Recovery for many critical applications. This is simply impossible within the structure of the network today.

This is the high end of database and application technology leasing capabilities. There are many, many Microsoft SQL applications that can contract service for pennies on the dollar. For example, DOIT's average charge per month for a SQL environment is approximately \$400 per application, assuming three applications sharing a hosting environment and dividing the monthly costs across them (first application costs \$920, with each additional \$161). Most SQL hosting environments cost \$20 - \$30 per month, and still include Database Administration, full backup, redundant servers and secure browser connections. Again, a low estimate of the number of applications across the Agencies would be 600, and the yearly cost savings is:

$$\$400 - \$30 = \$370 * 600 = \$222,000 \text{ per month or } \mathbf{\$2,664,000 \text{ per year.}}$$

IV. DOIT Network Strategy

The DOIT network strategy has been to force the Executive Agencies to use only the DOIT Internet port in order to reach the outside and to reach other sister Agencies. This forces each Agency to maintain more expensive direct lines to DOIT, instead of less expensive Internet access points themselves. However, even though the security of the network and the overall design of the network is managed by DOIT, no staff or circuits are eliminated at the Agency level, because at the various locations, the network circuits, server rack access, and local security issues must still be managed by local staff members. Allowing each Agency to procure one, or in the case of the larger Agencies, two or three Internet accesses of their own, would eliminate the redundant functions at DOIT, as well as produce much needed backup to accessing key centralized resources, such as CORE-CT. On average, a direct line between two entities not in the same town can cost from \$200 to \$500 per month, depending on the width of the connection.

Obviously, anyone who has researched the cost of business cable Internet will know that such services can be procured for \$50 - \$100 a month easily. Taking a low estimate of 50 Agencies and Commissions breaking out of the DOIT network, the cost savings are:

An average of \$350 – An average of \$75 = $\$275 * 50 = \$13,750$ per month or
\$1,650,000 per year.

Currently, DOIT manages a fiber loop from East River Dr, through the Armory, SOB and LOB, back over a different bridge. This network should be managed by the Department of Homeland Security, in conjunction with the Department of Public Safety. The loop can become a first tier in a State-wide Emergency Services network. Again, because the starting and ending termini are the same physical point, a redundant layer will need to be planned by the two Agencies.

The most important aspect of the network change is not the cost savings. It is a key point in an overall approach to technology that will allow a true Disaster Recovery strategy. The old saying is correct: Never put all your eggs in one basket. The business of the State will be carried out on electronic, diverse, secure servers, which have fail safe measures in place, and multiple paths to the service in case of any type of disaster. All of this will cost the taxpayers less money, get their services provided faster and allow the work of the State to continue even if wholesale demolition of State Office buildings were to occur. This will be accomplished without building expensive double data centers or extra technology environments.

V. Forms automation

The next piece of technology to review is in fact, new to the State. Over the last 5 years, several hosting services have gained exemplary reputations for contracted services for forms processing. The original form is presented to the hosting service in some sort of document format (scanned, word processing, Adobe pdf). The hosting company converts it into a field sensitive form, and presents it on their secure website, giving the client a link with which to hook into the form from their own Internet site. The hosting company also creates any download file format of the data that the client requests, as well as sets up an interface for a merchant of the client's specification in order to capture fees. It is obvious where this would lead. Currently, the State has over 2500 forms on the ct.gov websites. 90% of those mention a fee, while others may have a fee in the referring page. All of these could be automated using one of these services, thus reducing the manual effort of collating the fees and data from the forms. Obviously, as much detail as possible should be passed through CORE-CT, so that the various Agencies responsible for the requested services can measure if the fee covers most of the processing costs. At the same time, this would reduce those processing costs, by feeding information directly into CORE-CT as well as any Agency-specific application systems. This will allow the State to truly leverage retirement of clerical and administrative staff, by reducing the amount of manual processing. If even ¼ of this forms automation results in clerical positions which would not need to be refilled in the event of retirements, then **it is possible that this will save the State close to \$10,000,000 per year**, while doing business with the State will be faster and more accurate.

VII. The Dissolution of DOIT

Last, the dissolution of DOIT should be considered carefully. There are essential functions that DOIT provides, that would need to transition to more appropriate venues. In the spirit of the Governor's Budget Speech, it is proposed that DOIT and its first two tiers of management be eliminated, saving some **\$500,000 per year** with just this reduction of redundant State functionality. The State needs to carefully leverage the natural attrition of staff over the next 2 years, in order to reduce personal services dollars without requiring layoff. However, if properly managed not just across DOIT, but across the Agencies, this process should reduce technology staff by **45%**, and still maintain a higher level of technology services.

Most of DOIT's functions will revert to the Department of Administrative Services: procurement, project management, telephone and Internet and Intranet hosting (portal group) obviously should migrate over under their current middle Management. Again, it is important to select the unusually productive and practical DOIT Manager for leading this transition. A special bureau must be established to continue support of the smaller Agencies, that cannot support full-time IT Managers. This Bureau should be led by an existing DOIT Director. A completely new Bureau must be created out of existing staff from the Applications Hosting, networking and security staff. This Bureau will spear head the migration of technology platforms and administrative software. This new Bureau must be managed with an understanding that through the leveraging of natural attrition, its functions should cease completely in fiscal 2012.

All Geospatial services, standing committees and servers will migrate to the Office of Policy and Management, which has considerable leverage for the municipal sources of this information, through its grants process, as well as responsibility for managing the land-based assets of the State fiscally. In order to press for cost savings in the forms transition, another Office must be established with the Office of Policy and Management, which will have control of the forms transition, as well as the file sharing transitions. The goal of this new Office will be ensure data sharing within these venues, charting specifically which files and forms move across multiple Agencies, and pressing to incorporate electronic data exchange where ever feasible. This new Office will be made up of existing technology staff with a governing council of Agency IT Managers.

The property at East River Dr. should be maintained, and other more expensive office space within Hartford itself should be consolidated into the East Hartford property, since costs for parking, office space and even water are cheaper on the east side of the Connecticut River.

VII. Conclusion

Legislation must be passed to require all State entities to migrate to appropriate contracted services. The services of eMail and Calendar, along with file sharing, should begin migration by May 2009, and complete migration by December 2009. Additionally, all Agencies that support their own network and communications staff must begin planning their network migrations by May 2009 as well, and have disengaged from the DOIT central hub by December of 2009. This will realize cost savings even in the current year. A temporary focus group of existing IT Managers should work with the procurement resources of both DOIT and DAS to expedite sourcing for this effort. This must be mandated with aggressive deadlines and funding reductions to match these deadlines, in order to force decisions in a timely manner.

The monetary figures in this Approach Document are very conservative, and based on averages, low estimates of number of users and high guesses for overly complex requirements. Obviously, the savings if this Approach is utilized across all branches of the State will be exponentially increased. Contracted services must never result in a loss of control over information. This is why the technology and common productivity software is targeted, rather than the personnel who understand how to make the State's raw data into information. It is not a question of should the State pursue the service and leasing models; it is really a question of when and how. The technology is ready. The State simply has to approach the subject from a different and more flexible perspective.