Staff Briefing

Assessment of Connecticut's Implementation of E-Government

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Legislative Program Review
& Investigations Committee

CONNECTICUT GENERAL ASSEMBLY

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Introduction

Study Overview

The Legislative Program Review and Investigations Committee (PRI) voted in June 2010 to conduct a study to assess Connecticut's implementation of e-government, which stands for electronic government. E-government is described in different ways, but its general meaning is the "use of information technology to support government operations, engage citizens, and provide government services."[1] The implementation of e-government provides for self-service government for citizens and businesses, allowing them to conduct transactions at any time during the week, not only during "normal state business hours." The committee in particular expressed interest in Connecticut's efforts to ensure citizens and businesses have online access to desired information and services.

PRI Study Scope Areas of Analysis

The areas of analysis identified in the PRI study scope are: 1) an examination of the organizational structure in place in Connecticut to prioritize, design, implement, manage, and evolve e-government services; and 2) an evaluation of best practices based on existing literature and comparisons to states considered leaders in applying e-government principals. An inventory of e-government features available on Connecticut's state agency websites will also be provided.

The study is expected to be completed in December 2010, when findings and proposed recommendations will be presented to the committee after staff work is complete. This report is an interim document providing descriptive and background material relevant to the study.

Report Content

- **Section I (p. 7): Describes state rankings, suggested approaches, and consumer interests in e-government.** The section identifies the states that are considered leaders in terms of design and function of their websites, based on rankings issued by various organizations on state e-government websites. Key factors influencing development and maintenance of state-of-the art state websites are described based on PRI staff review of national literature and studies conducted by a variety of public and private organizations.

- **Section II (p. 17): Explains state statutes and organizational infrastructure related to e-government.** The major roles and responsibilities as they relate to e-government projects, the current strategic plan, and the process used by DOIT to facilitate e-government projects are explained. Section II also examines the general organizational structure in place to provide information technology services among Connecticut state agencies. (Appendix A provides a history of Connecticut's information technology management.)

[1] Sharon Dawes, *The Future of E-Government*, Center for Technology in Government University of Albany, State University of New York, 2007. http://www.ctg.albany.edu/publications/reports/future of egov (April 2010).

- **Section III (p. 31): Describes three different e-government projects.** This section provides case examples of three on-going e-government projects to illustrate the diverse nature of e-government initiatives and highlight the challenges faced and solutions used.

- **Section IV (p. 45): Begins to examine Connecticut state websites.** Although the state's main web portal and samples of agency sites have been examined by several national studies, there has not been a complete inventory and evaluation of all of Connecticut's websites. This section outlines the first steps accomplished by committee staff to accomplish this study objective.

Breadth of E-Government Efforts and Cost-Savings

Many types of e-government projects have been implemented by states over the last decade. Many are designed to meet citizen and business expectations by making it easier to access government information or conduct transactions online without having to physically visit a government office or use fax or mail. Some e-government initiatives involve providing information about specific programs or policies online, or allowing for transactions to be conducted within a single agency, while others cut across several executive branch agencies or even among different branches or different levels of government.

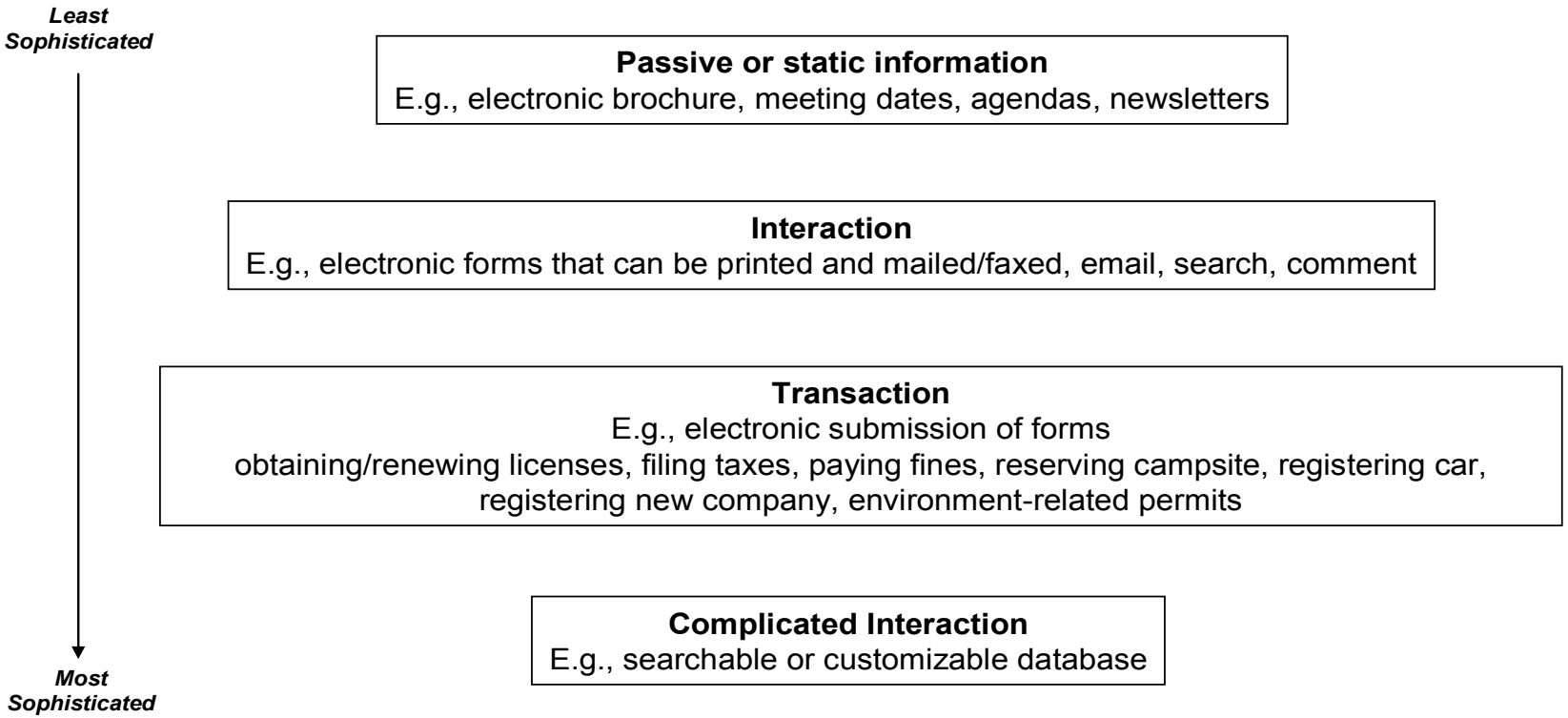
Much of the literature reviewed by PRI staff notes that e-government initiatives may lead to savings. However, the upfront costs of new technology may be substantial and costs can even increase when multi-channels of connection need to be maintained for citizens who do not have access to the internet or are unwilling to conduct online transactions. E-government may allow a state to do more with the same amount of resources or allow staff to be redeployed for new functions.

Stages of E-Government Development

Information technology, both existing and emerging, can provide extensive opportunities for: better delivery of government services to citizens; more convenient transactions for business and industry; increased transparency of and access to government information; and more efficient and cost-effective government management. This use of technology shows itself primarily through websites as the entry into information and services.

Figure 1 shows the range of sophistication in website development. At the most basic level, information such as newsletters or meeting agendas is posted to a website. Such information it is static and increases government transparency. The next level is interactive and allows the website user to perform low-level one-way interactions, which may include the ability to download a form that can be submitted by mail or fax upon completion. The third level is a more high level two-way interaction that allows for actual electronic submission of forms and/or complaints. It also can allow for secure financial transactions to occur with credit cards. The highest level allows website visitors to download a database and customize the data to fit the user's needs.

Figure 1. Website Sophistication Levels



Source: PRI staff analysis

E-Government and Public Expectations

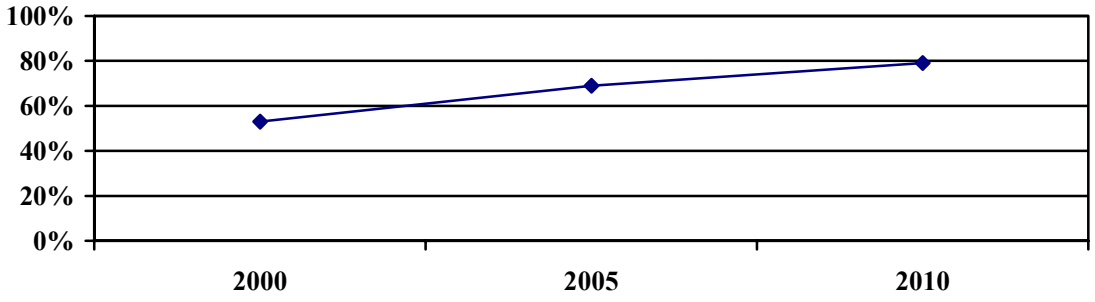
As internet usage continues to increase, expectations by citizens and businesses to obtain information and conduct transactions at their own convenience day or night, without physically having to visit a government office, escalates. Citizens have come to expect more government transparency, and for government to keep pace with technology like private businesses. E-government can also promote better government program services and administration by allowing different agencies and levels of government to share data between government offices, as well as improve services to citizens and businesses. An example of this is the multi-year modernization of the Department of Motor Vehicles (DMV) online system, which is discussed in detail in Section III.

Internet Use Changes Over Time

The Pew Research Center Internet and American Life Project conduct periodic surveys on internet usage among the U.S. adult population based on a variety of demographics.[2] Program review committee staff examined its research on national internet usage since 2000.

Rise in internet usage. Figure 2 shows the rapid rise in internet use at three points in time over a ten-year period. From 2000 to 2009, the percent of internet users (U.S. adults age 18 or older) among the population rose from 53 percent to 74 percent.

Figure 2. U.S. Adult Internet Users as a Percent of Total Adult Population Age 18 years and Older



Source: Pew Internet and American Life Project Surveys

How Do U.S. Adults Use the Internet?

National internet use. The Pew internet survey collects information on what people do when they go online. Table 2 shows the 20 most popular activities (out of 69 total activities on the survey) and the date the question was last asked. Percentages would likely be higher today, since internet use overall has increased. Pertinent to this study, in November 2008, 59 percent of survey respondents indicated that they had visited a local, state or federal government website.

[2] Pew Research Center, Pew Internet and American Life Project (www.pewinternet.org), 2010.

Table 2. Top 20 Reported Internet Activities for U.S. Adult Users.		
Activity	***% of Internet Users***	***Last Asked***
Send or read e-mail	89%	Sept. 2009
Use a search engine to find information	88%	April 2009
Search for a map or driving directions	86%	Dec. 2006
Look for health/medical information	83%	Dec. 2008
Look for information online about a service or product you are thinking of buying	83%	Feb.-March 2007
Check the weather	81%	Sept. 2007
Buy a product	76%	April 2009
Get news	75%	April 2009
Go online just for fun or to pass the time	72%	April 2009
Buy or make a reservation for travel	66%	April 2009
Watch a video on a video-sharing site like YouTube or Google Video	62%	April 2009
Look online for new or information about politics or the upcoming campaigns	60%	April 2009
Visit a local, state or federal government website	**59%**	**Nov. 2008**
Look for "how-to," "do-it-yourself" or repair information	59%	Aug. 2008
Do any banking online	57%	April 2009
Research for school or training	57%	Jan. 2005
Look up phone number or address	54%	Feb. 2004
Look online for information about a job	52%	April 2009
Take a virtual tour of a location online	51%	Aug. 2009
Source: Pew Internet & American Life Project Tracking Surveys (March 2000 – September 2009)		

Highest internet users by state. The U.S. Census Bureau, through its Current Population Survey, maintains statistics on internet use for individuals who are age three years and older from the October 2009 Current Population Survey. Table 3 shows the ten states with the highest percent of internet users, with Connecticut ranked 6th at 75.2 percent. (The three New England states that did not make the top ten are Massachusetts (74.4 percent) and Maine (72.6 percent), and Rhode Island (70.6 percent).)

Table 3. Top Ten States with Highest Percent of Internet Users	
State	***Percent***
Alaska	79.2
Washington	78.8
Utah	77.9
Vermont, Minnesota	76.1
Oregon, New Hampshire	75.5
Connecticut	**75.2**
Wisconsin, Colorado	74.9
Source: www.census.gov/cps	

Connecticut internet users. The same survey also collects information on internet usage by household and selected characteristics and by state on whether individuals access the internet from any location (either inside or outside the householder's home). The U.S. average

was 68.4 percent. Across all the states, New Hampshire had the greatest percent of individuals living in households with internet access (85 percent) compared to Mississippi at 57 percent. Connecticut was ranked fourth at 82 percent.

Emerging Technology and Internet Use

Broadband use. Accessing the internet through a broadband connection is considered "high speed internet" because it carries data faster than a dial-up connection. Sixty-three percent of U.S. adults surveyed in May 2009 had broadband internet connections at home, up from 55 percent one year earlier. Adoption of broadband has increased among seniors, low-income Americans, and rural residents. Only 7 percent of Americans are dial-up internet users at home, a figure that is half the level it had been two years ago. A plurality of dial-up users said cost was the reason they've yet to make the change to broadband. The remaining 30 percent are not home internet users.

Mobile devices. Forty percent of all Americans have gone online with a mobile device – meaning they have used a cell phone or other handheld device to check email, access the internet for information, or send instant messages.[3] Many states have already anticipated the growth in the use of mobile devices to go online and have developed mobile applications so that citizens can access information quicker and more efficiently. It is generally accepted by IT researchers that use of mobile devices will continue to increase and likely will replace desktop computers in the next five to seven years.

As the prevalence of mobile and other smart devices with internet connectivity increases, so does the need for e-government initiatives that allow users of these devices to access government websites. As younger generations age, technological expectations will continue to rise and states must keep pace with innovations in order to keep citizens engaged. As noted earlier, this will require investments, but savings might be achieved through in shifts in workload, staff attrition, and reduction of costs associated with paper, postage, and printing.

Web-based social networking. Web-based social networking occurs through a variety of websites that allow users to share content, interact and develop communities around similar interests. Some states have joined these networks as a way to keep citizens informed and engaged. Examples of social networking websites include Facebook, LinkedIn, and Twitter. Twitter, created in 2006, is a social networking service that lets users send and read other users' messages, which are called tweets. Tweets are text-based posts of up to 140 characters displayed on the author's profile page that can be accessed directly through the Twitter website or through compatible external applications, such as smartphones. Twitter had 400,000 tweets posted per quarter in 2007, growing to 4 billion tweets in the first quarter of 2010.

[3] Pew Research Center, Pew Internet and American Life Project Survey, *Mobile Access 2010*.

Section I

State Rankings and Key Factors Associated with Successful E-Government

Much has been written about the use of information technology by state governments, especially in terms of how e-government is used to provide wider access to government information to citizens and services to customers, both individuals and businesses. Various entities evaluate this state government activity, based on criteria developed to measure state efforts, and rank states based on the criteria. State rankings can be useful in many ways, but as with any comparison tool, it is important to understand how state rankings on any topic are arrived at (e.g., the breadth of activity measured and the methodology used). This section reviews Connecticut's rankings from selected studies, and provides insight into the ranking process. The discussion shows the criteria by which states are measured and how Connecticut compares to other states. The section then sets out key areas identified by the national literature as factors to consider for successful e-government initiatives, on a statewide basis, to occur.

How Does Connecticut Rank in Terms of Electronic Government?

PRI staff reviewed national literature and studies produced by a variety of organizations, including academic institutions, policy think tanks, government organizations, IT associations (private and public) and consultants. Two state ranking efforts are discussed first:

- Brookings Institute (*Ranked Connecticut 11 in 2008, and 19 in 2007);* and
- Rutgers University (*Ranked Connecticut 28 in 2008).*

These studies evaluate state websites based on common elements to varying degrees – usability, content, type of online services offered, privacy and security policies, and citizen participation.

Another state ranking is produced by the Center for Digital Governance, a national research institute on informational technology policies and best practices in state and local governments. The process used by the Center to develop its rankings is different from the Brookings and Rutgers studies, and so is discussed separately, later in this section. The committee may remember that the 2009 program review study about economic competitiveness cited that report and its ranking of Connecticut 37 out of 50 states on its use of digital technology.

Brookings Institute and E-Governance Institute at Rutgers University

Because e-government efforts can be broad and difficult to measure, two of the studies reviewed by PRI staff that ranked states on e-government, looked at specific aspects of state portals and agency websites. These studies evaluated state websites based on common elements to varying degrees – usability, content, type of online services offered, privacy and security policies, and citizen participation. PRI staff identified two separate studies – one from the

Brookings Institute[4] and the other from the E-Governance Institute located at Rutgers University, that periodically rank state government websites. Such rankings (done in cooperation with other entities) were last conducted in 2008.

Both organizations' study methodologies had independent reviewers evaluate state portals and a sample of individual agency websites based on a 100 point scale. Rankings and ratings were provided for each state.

Brookings Institute ranking. Former Brown University professor Darrell M. West, now Vice President and Director of Governance at the Brookings Institute, has been evaluating and ranking state agency websites since 2000, with the most recent ranking issued in a 2008 report. The report analyzed 1,537 state and federal websites to measure what is online, variation that exists across states, and compares the 2008 results to the previous nine years. A 0 to 100 point index ranked each state based on 18 features, based on a review of each state web portal and a sample of agency websites.[5] On average, 30 websites were reviewed in each state across all branches of government.

Table I-1 shows the highest-ranking state websites for 2008, with the 2007 ranking in parentheses. Two years ago, Georgia ranked 38th in the study and last year it ranked 13th. Connecticut was ranked 11th in 2008, up from 19 in 2007. Connecticut received a rate of 64.2 points out of 100 point scale, and the top state received 83.7 points. The lowest ranked state (Mississippi), received 31.1 points.

Table I-1. Top Ten State E-Government and Connecticut Rankings/Ratings From Brookings Institute 2008 Study (2007 rankings in parantheses)

State	*Ranking*	*Rating out of 100 Points*
Delaware	1 (1)	83.7
Georgia	2 (13)	78.3
Florida	3 (35)	77.9
California	4 (12)	70.9
Massachusetts	5 (6)	69.5
Maine	6 (3)	67.7
Kentucky	7 (4)	67.3
Alabama	8 (45)	66.4
Indiana	9 (16)	65.0
Tennessee	10 (5)	64.3
Connecticut	*11 (19)*	*64.2*

Source: Darrell M. West, Governance Studies at Brookings, *State and Federal Electronic Government in the United States, 2008.*

[4] Prior to the 2008 study produced by Darrell M. West for the Brookings Institute, all previous studies were produced by him while he was a professor at Brown University.

[5] Darrell M West, Vice President and Director, Governance Studies, Brookings Institute, State and Federal Electronic Government in the United States, 2008.

Interestingly, only about half of the states retained a top ten ranking from 2007 to 2008. For example, Delaware received a number 1 rank in 2006, fell to number 15 in 2007, and was number 1 again two years later. Utah and Texas, two states that are often ranked high by other organizations, did not make the Brookings Institute top ten, ranking 35 and 17 respectively, highlighting the effect of methodology.

Percent of time feature found on specific website reviewed. Table I-2 shows the 18 features that were used to rate state websites and the rating was partly based on whether the feature was present on the specific website being reviewed. The table shows the percent of time the reviewer found the feature present. A state earned a maximum of 72 points for a specific website. (The numbers of online executable services for each site earned up to 28 additional points - for complete survey methodology, see Appendix B).

Table I-2. Percent of Time Feature Found on a State Website

Feature	***CT***	***Highest States***	***Lowest State***
Online Publications	100%	38 states (100%)	MI (74%)
Databases	69%	12 states (100%)	MD (61%)
Audio Clips	54%	FL (94%)	NM (10%)
Video Clips	54%	FL (90%)	UT (15%)
Foreign Language Access	23%	DE (89%)	AK (3%)
Not Having Ads	n/a	n/a	n/a
Not having user fees	0	ME (83%)	20 states (0%)
Not having premium fees	n/a	n/a	n/a
W3C Disability access	4%	ME (63%)	3 states (0%)
Having privacy policies	96%	4 states (100%)	MS (19%)
Having security policies	96%	2 states (100%)	3 states (0%)
Allowing digital signatures	100%	7 states (100%)	MS (59%)
Option to pay via credit cards	n/a	n/a	n/a
Email contact information	100%	IL (48%)	14 states (100%)
Areas to post comments	88%	DE (93%)	MD (3%)
Option for email updates	88%	DE (89%)	WY (6%)
Allowing for personalization of website	8%	ME (83%)	NE (0%)
PDA or handheld device accessibility	0%	DE (71%)	33 states (0%)

n/a – information not available
Source: Darrell M. West, Governance Studies at Brookings, *State and Federal Electronic Government in the United States, 2008.*

A few of the key findings of the report were:

- website consistency in formatting and link placement is critical to easy navigation;
- state portals should link to all state agencies and services (to facilitate searching;

- busy and disorganized websites are bad - even with many helpful features - because information and links need to be intuitively located; and
- websites should not claim to offer online services when they only host PDFs of forms and documents that need to be printed, filled out, and mailed.

The report recommended states adopt the following best practices:

- websites have strong privacy and security policies so users feel safe, and all sites have a privacy policy;
- agencies have similar layouts mirroring the state portal page so users can easily identify the agency's website as state government;
- websites have pages that inform users when they are being redirected to an address outside state government;
- agencies have navigational guides and site maps that briefly summarize the information users will find on each webpage;
- the "What's New" section is up-to-date and conveniently located on each webpage;
- all websites have search engines;
- agencies should try to have personalized webpages for frequent visitors;
- foreign language accessibility is provided; and
- disability access is ensured.

Rutgers E-Governance Institute. Rutgers University created the E-Governance Institute in 2003 to assist policymakers, public sector professionals, and citizens in finding solutions to the challenges governments face in the information age. The institute's website notes that "the principles of e-governance are relatively straight forward:

- build services around citizens' choices;
- make government more accessible;
- facilitate social inclusion;
- provide information responsibly; and
- use government resources effectively and efficiently, saving taxpayers money."[6]

The E-Governance Institute independently conducted surveys of U.S. state e-governance efforts in 2003, 2005, and 2007, with the 2008 survey conducted jointly by the institute and the Department of Public Administration at San Francisco State University and co-sponsored by the American Society for Public Administration. The survey assessed state e-government by evaluating websites and ranking them on a national scale. Five individual categories with 18 to 20 measures each were used and given equal weight to arrive at an overall state rating. The categories were:

[6] http://andromeda.rutgers.edu/~egovinst/Website/

- privacy/security;
- usability;
- content;
- type of online services offered; and
- citizen response and participation through websites established by state governments.

(See Appendix C for full methodology and measures used within each category.)

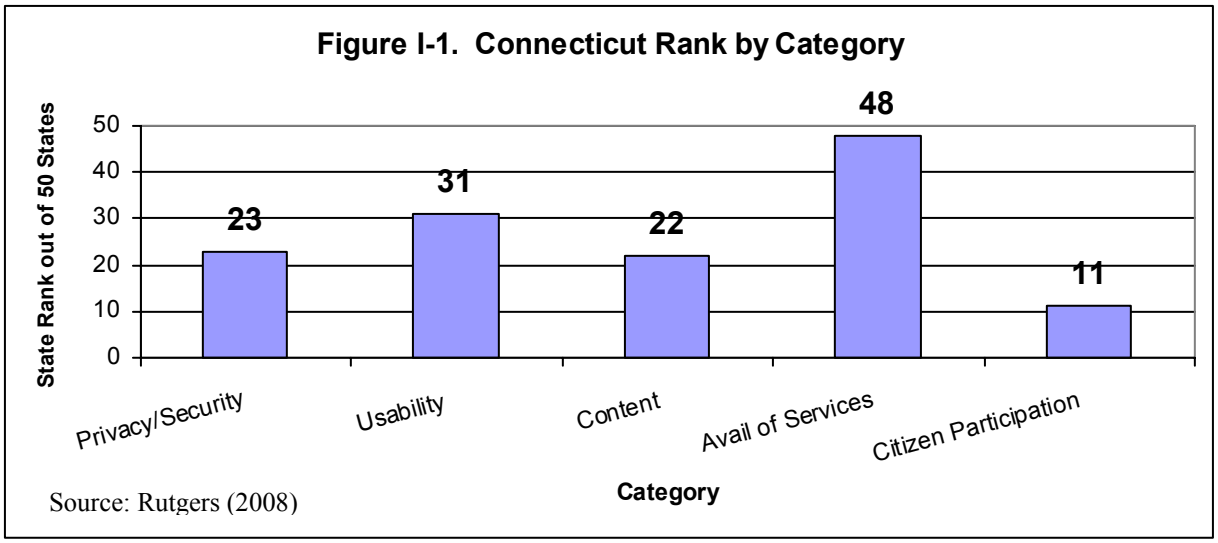
The top ten ranked states and their ratings are shown in Table I-3. The institute identified Maine as the best performer. Only three states (Indiana, Maine, and Massachusetts) that were ranked in the top ten by the Brookings Institute study were also in the Rutgers study's top ten. Connecticut received a much lower ranking in the Rutgers study (28) compared to the Brookings study, where Connecticut was ranked 11.

Table I-3. Top Ten E-Government States and Connecticut Ranking/Rating from the E-Governance Institute at Rutgers University (2008)

State	***Rank***	***Rating (rounded to tenth place)***
Maine	1	69.2
Oregon	2	66.5
Utah	3	63.2
South Carolina	4	63.1
Indiana	5	61.3
Missouri	6	60.4
New Hampshire	7	58.6
Massachusetts	8	57.0
Arkansas	9	56.0
Arizona	10	56.0
Connecticut	***28***	***48.5***

Source: Marc Holzer, Aroon Manoharan, Robert Shick, Genie Stowers, U.S. States E-Governance Report (2008), An Assessment of State Websites, E-Governance Institute (Rutgers School of Public Affairs and Administration).

Connecticut's rank by category. The Rutgers study also issued individual rankings for each of the five categories, in addition to the overall state ranking. Connecticut ranked the highest in the citizen participation category (11), which included measures on whether the website accepted comments and contained newsletters, and a low rank (48) in availability of online services.



Comparison of Brookings and Rutgers state rankings for New England. Table I-4 compares the rank received for the New England states from each study. Only two states in New England were ranked in the top ten by each of the studies: Maine and Massachusetts.

Table 1-4. New England State Rankings in 2008 by Two Organizations

State	***Brookings Institute***		***Rutgers E-Governance Institute***	
	Rank	*Rating*	*Rank*	*Rating*
Connecticut	11	64.2	28	48.53
Maine	6	67.7	1	69.17
Massachusetts	5	69.5	8	56.99
New Hampshire	36	42.3	7	58.61
Rhode Island	25	48.3	18	53.74
Vermont	44	39.5	37	44.86

Source: E-Governance Institute (Rutgers School of Public Affairs and Administration 2008) and Darrell M. West, Governance Studies at Brookings, *State and Federal Electronic Government in the United States, 2008.*

Ranking volatility. Overall, very few states consistently ranked among the top ten by the two organizations ranking them. Even within the same organization issuing the study, a state's rank can vary widely from survey to survey. Changes in the emphasis placed on e-government projects by state leaders, resources committed, or the priority placed on enhancing the kinds of information or types of transactions that are available from survey to survey, would have an impact on a state's rank. In addition, another reason for the volatility is because of sampling methodology, which may have played a role in the variation in state rankings. Both studies based the state ranking on the state portal and reviewed only a sample of agency websites linked to the portal. If the sample of state agencies were different from the previous year (which is likely), or if the sample were different in the same year between the two studies (also likely), then sampling variation would explain the rankings variation.

The Center for Digital Governance

As noted above, another organization that ranks states is The Center for Digital Governance.[7] The center conducts a biennial survey of each state chief information officer (CIO) which consists of two parts: 1) of each state CIO and senior executives that is evaluated and scored; and 2) a CIO poll that is not scored, but credit is provided for its completion. In 2008, the Center ranked Connecticut 37 out of 50 states.

Based on the most recent survey results in 2010, the center has changed to assigning a letter grade to states. This comparison of states differs from the other two (Brookings and Rutgers) that were discussed above, since the center does not independently evaluate state websites, but bases its scoring on submitted survey responses completed by the states themselves. In addition, the letter grade given by the center is based on responses that encompass all aspects of a state's IT operations, and therefore the overall grade received by a state is not only for e-government projects. Based on the center's top ten state 2008 rankings, only two states from the Brookings Institute study were included (California and Kentucky) and two from Rutgers University (Utah and Arizona).

The most recent survey results were released on September 26, 2010 for the 2010 biennial survey, and the letter grade assigned to each state is shown in Table I-5. In 2008, Connecticut ranked 37 out of the 50 states; the 2010 result is a B-, which if converted into a rank, would fall anywhere between 25 and 33 out of the 50 states.

Table I-5. State Letter Grade for IT Issued by Center for Digital Governance

Grade	***States***
A	MI, UT
A-	PA, VA
B+	CA, CO, KY, MN, MO, NY, OR, SD, TN
B	AZ, AR, IL, KS, LA, MD, MA, MI, ND, TX, WV
B-	CT, DE, FL, GA, HI, NE, NM, OH, WA
C+	AK, IA, ME, MT, NV, NJ, NC, RI, VT, WI
C	AL, NH, OK, WY
C-	ID, IN, SC
Source: Center for Digital Governance, Digital State Survey – 2010 Results	

The Center also gives out other types of awards, one of which recognizes states with the best state portals. The following states were announced as winners in September 2010: California, Arkansas, Alabama, Maine, and Kentucky. There were also six finalists: Michigan, Rhode Island, Tennessee, Texas, Vermont, and Virginia. Utah was number one in 2009.

[7] Part of the center's operations includes an Industry Services component. This part of the company work closely with technology companies to help them develop successful plans and strategies for doing business in the state and local government market.

Factors Associated with Successful E-Government Initiatives

It is important to understand that many of the strategic decisions surrounding e-government need to be made before an actual website is created in terms of the information and services users want to access through a government website and how the website should be developed to best meet those needs. Several factors impact the success of a state's e-government project, with key ones described below.

Strong leadership. A 2007 report by the Congressional Research Service (CRS) examined the e-government policies and strategies of state government to provide effective practices and processes.[8] The report is based on research conducted by the Lyndon B. Johnson School of Public Affairs under contract to CRS. The report describes e-government as "the use of information technology to integrate government information and services for citizens, businesses, government, and other institutional uses." A key factor identified in the report for successful implementation of e-government initiatives is strong leadership, particularly gubernatorial, for broad acceptance and faster implementation of e-government programs. The report also notes that, a strong CIO, with the position having infrequent turnover aids implementation of e-government.

Strategic planning. Almost all of the literature reviewed by PRI staff confirms that strategic planning for e-government is crucial. Currently, states use a broad range of formal and informal strategic documents Successful states have developed statewide e-government strategies in order to ensure planning, coordination, and prioritization among individual agencies, given the limited financial resources available to state government in developing new e-government initiatives. Ideally, this occurs within a more comprehensive e-government strategy that maps the interconnectedness between agencies, identifies the major users of agency services, and provides for business solutions to better serve its customers.

Identifying customer need. One of the first steps in strategic planning for e-government is for state agencies to identify their customers and the activities they (i.e., citizens, businesses, and other government entities) want to conduct online. During this phase, recommendations by task forces and input from the business community, health professionals, individual citizens, state agency heads, and program managers should be incorporated into an overall strategic plan. The plan should recognize that cost is a factor and prioritize high volume/high transaction services in order to use resources most effectively.

The agency can then use that information to determine the types of information and services that should be made available based on a citizen/business-centric focus. According to the National Governor's Association for Best Practices, "the most effective state websites are those that focus on the needs and preferences of users and offer the same kinds of conveniences

[8] *State E-Government Strategies: Identifying Best Practices and Applications*, Congressional Research Service, July 23, 2007.

found on private sector websites." [9] The agency's business plan should specify the necessary resources, obstacles that must be overcome, and the IT solutions available.

Design of state portal. According to the literature reviewed, the design of the state's master website, otherwise known as the state's web portal, is important because it often serves as the main entry into the various state agency websites. Some state portals have evolved from the early days of the internet and now, instead of just providing links to agency websites, allow for a variety of functions to be performed without an individual or business ever identifying the specific state agency that ultimately is responsible. A good state portal should have a well-designed search capability since that is how users often approach finding out about what they would like to do online. As part of the next study phase, PRI staff will be examining state portals to determine what key state web portal design features exist for states that are considered leaders in the e-government field.

Collection and review of performance measure data. Reviewing web traffic statistics regularly is one tool that allows agencies to know if a website is being used by stakeholders and, if not, to redesign it. Web traffic statistics that allow an agency to evaluate its e-government programs include the number of site hits, user contact sessions, number of downloads, amount of time spent on the site, information accessed most frequently, and number of times forms are completed and submitted online. In terms of cost measures, agencies can evaluate cost savings related to overhead and operating costs, such as paper use, postage, and transportation costs that are incurred through traditional modes of communication.

Commitment to funding. Since IT projects tend to be costly, funding is critical to project success. Given that e-government projects often compete for funding with other types of programs, many states have relied on a combination of financing, including revolving accounts, transaction fees, general operating funds, capital funds and federal funds. Although savings may be realized in the long run, cost savings will not emerge until enough users switch from traditional delivery systems to electronic delivery systems. Although government may allow a state to do more with the same amount of staff resources (e.g., customers experience less waiting time, whether they stand in line or conduct a transaction over the web), or allow for staff to be redeployed for new functions, cost savings can be difficult to capture, particularly when multi-channels for customer contact still must exist (i.e., front counter, mail, and fax).

Next Steps

During the next phase of this study, PRI staff will look more closely at states consistently cited as leaders in implementing e-government initiatives and are considered leaders in state portal development. The purpose of this review will be to determine how e-government projects are identified, managed, and implemented. PRI staff also will examine the portals in those states to determine the types of services available to citizens and businesses in those states compared to Connecticut.

[9] National Governor's Association Center for Best Practices, Center Subissue, Information Technology, Jan. 13, 2010.

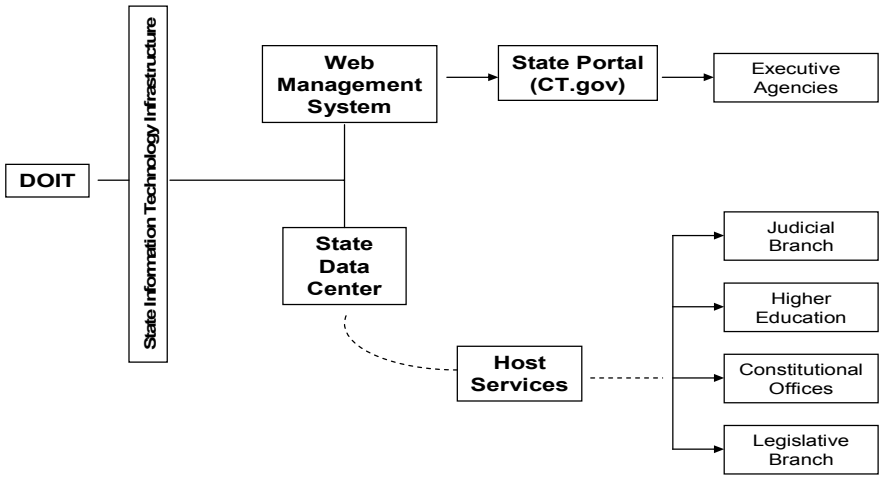
E-Government Implementation Structure

The development and implementation of e-government initiatives involves several considerations including the technical aspect (e.g., hardware, software, and other technological design and support) and the substantive government business aspect (e.g., business planning and assessing client needs), which utilizes the technology to reach web clientele. Each aspect is equally important and must work harmoniously to produce a successful e-government project. This section provides a general description of the basic e-government infrastructure in Connecticut as well as an overview of the major roles and responsibilities for e-government.

Basic E-Government Infrastructure

The Department of Information Technology (DOIT) serves as the primary manager of Connecticut's information technology (IT) enterprise architecture.[10] DOIT manages the state's IT network, including the state data center, and provides a web content management system[11] to allow agencies to make government information available online to the public. DOIT also administers the state's main internet portal (CT.gov). (See Figure II-1).

Figure II-1. State Information Technology Basic Infrastructure for E-Government



Source: PRI staff analysis

[10] Enterprise architecture is a comprehensive blueprint used to manage and align the state's information technology assets, operations, and projects.

[11] Web content management system is a software system that provides website authoring and administration tools designed to allow authorized users to create and manage a site's content. Most use a database to store content that might be needed by the system.

Under the current configuration, DOIT does not exercise full authority over the entire realm of IT in the state. The design and implementation of e-government is done in conjunction with – or sometimes, solely by – state agencies. The legislature, judiciary, the constitutional offices, and the entire higher education system are carved out and do not fall under DOIT authority. However, DOIT plays a critical role. It connects more than 100 agencies to the state network and provides host services to state entities across the different branches of government (i.e. executive, judicial, and legislative). Currently, DOIT hosts 118 IT applications for 80 state agencies in its data center, which provides a secure and reliable environment for the storage, processing, and movement of state data. In addition, state statutes explicitly state that DOIT must cooperate with the legislature, judicial department, and the constituent units of higher education in evaluating opportunities for saving money and sharing information that may result from their acquiring systems similar to those of other state agencies.

Major Roles and Responsibilities for E-Government

Connecticut law does not reference a single recognizable statutory authority for all e-government functions. As noted above, the responsibility for the technical aspect primarily belongs to DOIT. Responsibilities for substantive business decisions regarding e-government initiatives goes to the individual state entity. Both aspects are subject to statewide executive and legislative leadership. Figure II-2 provides a basic outline of the primary roles and responsibilities for e-government projects.

Figure II-2. Roles & Responsibilities for E-Government

DOIT E-Government Role

Technical Support
- Maintains infrastructure
  - State portal
  - Host Services
- Provides agency IT managers
  - Training

Acquisition
- Review & approves agency requests
  - Hardware, software, consultant services

Standards & Guidelines
- Provides web templates
- Establishes best practice policies
  - Security
  - Privacy
  - Disability access
  - Credit card transactions

Reporting Requirement
- Develops State IT Strategic Plan

State Agency E-Government Role
- Maintains non-DOIT IT staff
- Decides e-government initiatives to implement
  - Web content
  - Web design & layout
  - Web statistics
- Develops agency IT business plans

Source: PRI staff analysis

DOIT is statutorily responsible for a wide range of IT functions. Among these broad responsibilities is to identify and implement "optimal information and telecommunication systems" for state agencies as well as opportunities for reducing costs for such systems. Specifically, state law requires the chief information officer (CIO) to:

- develop comprehensive standards, policies, and planning guidelines for information and telecommunication systems;
- review state agency acquisitions of hardware, software, and consultant contracts;
- oversee leasing, purchasing, and contracting for information and telecommunication system facilities, equipment, and services for most state agencies; and
- ensure statewide implementation of the 9-1-1 and E 9-1-1 systems.

The following discussion describes the various roles and responsibilities for e-government involving DOIT (both directly and indirectly) and the individual state agencies.

Technical support. As Figure II-2 illustrates, one of DOIT's primary roles in e-government functions is to provide technical support and facilitate collaboration in cross-agency IT projects. Each state agency is serviced by a DOIT IT manager, either exclusively assigned to the agency or shared among multiple agencies. DOIT IT managers are the primary point of contact for all IT issues between DOIT and the state agencies. Among the managers' responsibilities are to:

- develop technology solutions to agency business problems;
- leverage solutions across agencies resulting in cost savings and standardization;
- ensure IT standards are consistently applied;
- implement enterprise IT practices; and
- manage consultant costs, and where applicable, the agency's IT resources (staff and hardware/software).

Although they are DOIT employees, the DOIT managers are located within their assigned state agencies to work in conjunction with other agency personnel on IT functions. According to DOIT, IT managers are located at agencies to better understand agency business issues, integrate business and IT strategies, and articulate the priority business needs of agencies to DOIT. As agency liaisons, the managers also participate in regular DOIT meetings to help frame technology issues, formulate DOIT responses, and communicate both to their assigned agency. The Business Development Division (BDD), within DOIT's central office, supervises the DOIT managers who direct the IT staff housed in the state agencies. BDD services range from dealing with day-to-day service needs and procurement processing, to identifying and helping to develop new applications to solve business problems.

While the technical aspect is handled by DOIT and/or other agency IT staff, all substantive business decisions for e-government initiatives remain with the individual agency. The individual agency determines what e-government initiatives it wants to pursue and the scope of such initiatives, as well as the web content, design and layout. However, funding and DOIT approval must still be obtained for large projects.

IT standards and guidelines. Among DOIT's major responsibilities is to develop and implement an integrated set of policies, standards, and architecture[12] for the information and telecommunication systems of executive branch state agencies. The CIO is mandated to review existing and new information systems and telecommunication technologies for consistency with both the strategic plan (discussed below) and approved agency systems design.

In 2002, DOIT established general website template guidelines as part of the creation of CT.gov. The template provides a level of uniformity among executive branch websites, with all giving contact information, office directions, site map, and feedback option.

Beyond DOIT's general template guidelines, each agency determines its own web content, design, and layout. The initial decisions of whether and how to utilize electronic technology to provide information and services through its website is made by the individual state agency. Agencies also determine website design and layout, which affect user navigation and accessibility. Interviews with staff of some of the state's largest agencies indicate that decisions regarding specific web content are primarily made by the various program level staff at each agency. Program review staff will continue to examine the delegation of e-government roles and responsibilities statewide and at the agency level in the next phase of this study.

In addition to the template guidelines, DOIT has recently updated specific e-government web principles and a series of best practices. These include minimum web browser requirements, guidelines for achieving universal accessibility, performing security assessment, and posting the state's privacy policy, as well as use of DOIT's payment service to process credit card transactions. These web principles and best practices are provided in Appendix D.

Acquisitions. As described in the introduction, the level of website sophistication can range from simply posting static information to fully interactive two-way e-functions. For the most basic level, state agencies can often proceed without additional acquisition of technology or resources. More advanced levels of website sophistication may require additional technological design and support that may be available in-house at the agency, or be acquired through either purchasing commercial "off-the-shelf" products or more customized expertise by hiring a consultant.

DOIT is statutorily responsible for the procurement of information and telecommunication systems for the executive branch and constitutional offices.[13] State law specifically grants the CIO approval authority over the following acquisitions:

- agency hardware and software acquisitions worth *$20,000 or more*, within guidelines the CIO develops; and
- agency requests and proposed contracts for any information and telecommunication systems consulting services.

[12]Architecture is the defined structure or orderly arrangement of information systems and telecommunications systems, based on accepted industry standards and guidelines, for the purpose of maximizing the interconnection and efficiency of such systems and the ability of users to share information resources (C.G.S.§4d-1).
[13] This study scope explicitly excludes an examination of hardware acquisition.

Accordingly Table II-1 shows, state agencies are allowed to acquire hardware or software for an information or telecommunication system costing less than $20,000 without DOIT's approval. Hardware and software acquisitions over $20,000 but less than $100,000 are allowed if it is for a project that complies with the agency's business plan that has been approved by the CIO under the CIO's guidelines. DOIT has seven business days to approve or disapprove the state hardware and software acquisitions and agency requests for consultants. If the deadline is not met, the request is deemed approved.

Table II-1. DOIT Acquisition Approval Authority.

Hardware/Software	*CIO Approval*	*Applies to*	*Timeframe*
<$20,000	No	All executive branch agencies and constitutional offices	CIO decision in 7 days or deemed approved
$20,000-$100,000	No, if part of CIO approved business plan for agency		
$100,000 +	Yes		
Consultant Services	Yes, unless for telecommunication consultant for DPUC or Consumer Counsel		

Source: C.G.S.§4d-2

System development methodology (SDM). One significant policy change DOIT has established for IT projects is the use of the system development methodology (SDM). DOIT first used SDM for the modernization project in the Department of Motor Vehicles (discussed further in Section III). Recognizing the value of SDM and noting that IT expenditures were in excess of $100 million, Governor Rell issued Executive Order 19 in June 2008 requiring the use of DOIT's System Development Methodology (SDM) for all IT projects in the executive branch, with the exception of state higher education institutions.[14] The purpose of SDM is to institute uniform procedures that promote consistency in the planning and execution of IT projects, resulting in more efficient project timelines and costs. SDM is used in conjunction with existing policy and guidelines for acquisition and procurement.

Currently, there are four SDM variations available depending on the project size and scale. As shown in the Figure II-3, these are SDM Standard, Commercial-Off-The-Shelf (COTS), Lite, and Rapid Application Development (RAD).

Figure II-3. Four SDM Variations

SDM-Standard: used for large or complex custom-development or infrastructure projects

SDM-COTS: used for projects pursuing the purchase of commercial-off-the-shelf (COTS) business applications

SDM-Lite: used for smaller, lower-risk application development or infrastructure projects

SDM-RAD: used for fast-paced, rapid application development projects using an iterative or "spiral" development model.

Source: DOIT

[14] SDM does not apply to the Judicial or Legislative branches of government.

Through the use of SDM, each IT project has a defined plan overseen by an identifiable project manager and clearly assigned roles for a range of project responsibilities. The process requires active approval at each phase in order for a project to proceed, be re-directed, or stop based on a review of results and continued need. SDM requires documentation to record all decisions.

Depending on the scale of a project, the impact of SDM on e-government initiatives may be direct or indirect, yet in all cases it is substantial. The implementation of SDM yields several benefits. It allows DOIT to be aware of IT projects across agencies. The process fosters better coordination, eliminates redundant efforts, and helps leverage interagency and statewide investments. It assists in remediating risks and problems and holding vendors accountable. SDM also helps agencies avoid project scope creep. The case studies presented in Section III are examples of how SDM has affected the development of some recent e-government efforts. Appendix E provides further discussion on SDM and a copy of Executive Order No. 19.

Strategic plan. State law requires DOIT to prepare an implementation plan that incorporates policy goals and establishes strategies for state agencies' information and telecommunication system services. The CIO must develop and annually update this strategic plan with the statutory goals outlined in Table II-2.

Table II-2. Six Statutory Goals of the Information and Telecommunication System Strategic Plan.

1. Provide effective and efficient voice and data communication service among state agencies
2. Establish efficient collection, storage, management, and use of information
3. Develop comprehensive information policy emphasizing a commitment to sharing information resources, in relation to library and other resources, with a philosophy of equal access to information
4. Provide all necessary telecommunication services between state agencies and the public
5. Ensure emergency recovery capabilities necessary to support state agency functions
6. Provide access to higher technology for state agencies
Source: C.G.S.§4d-7

Statutes specifically requires DOIT's strategic plan to include planning for all state agencies with the goal of effective and efficient use and access to technology. The plan must contain:

a) an inventory of existing online public access arrangements for state agency databases which are subject to Freedom of Information Act (FOI);

b) a list of data bases which could provide consumer, business, and health and human services program access;

c) provisions addressing the feasibility, cost, and potential for a public-private partnership in providing such access; and

d) email capability provided to citizens to communicate with state agencies.

The CIO is required to consult with representatives of business associations, consumer organizations and nonprofit human service providers as well as state agencies to carry out various provisions of the strategic plan. Each agency must cooperate and assist the CIO in the plan development, submitting information as the CIO requests (C.G.S.§ 4d-7(c)). Accordingly, DOIT annually requests the submission of an agency specific IT plan. In fall 2007, the department provided agencies a template for their IT plans (see Table II-3).

Table II-3. Components of Agency Information Technology Plan Template

Heading	***Template Description***
Executive Summary	Major benefits and risks of the existing IT environment & what must be done over the next 2 ½ years (i.e. budget, staffing shortages or upcoming retirements)
Agency Mission	Overall mission of the department
Major Initiatives	Major goals outlined in business strategy for the coming fiscal year(s)
Mission of MIS	Narrative outlining the mission of the IT area of the agency
Public Service	Narrative describing information or assistance that agency provides to the general public
Major Projects & Special Events	Description of major projects during the last year & engaged in during the life of the plan
On-Going Projects & Support	Projects completed & require day-to-day maintenance and support
Planning Goals & Priorities	List of tasks to be achieved and how they reflect the agency's goals and priorities
Governance	Description of how priorities are set and necessary changes required to set a clear direction for IT
Succession Planning	Overall strategy of IT succession planning and steps, and measures taken to ensure process is successful

Source: DOIT Template for Agency IT Plan (for the period of January 1, 2008 to June 30, 2011)

The table lists and describes the component headings for each section of the plan. Of particular relevance to this study is the Public Service component of the agency IT plan. As the table indicates, this portion of the IT plan describes the assistance/service the agency provides to the general public. Although DOIT has indicated to agencies the need to update annual IT plans, DOIT reports some agency plans are not current. The program review staff will be reviewing this component of the most recent agency IT plans.

Implementation of DOIT's Strategic Plans

Since the inception of DOIT, the department has prepared two strategic plans, each covering a four-year period – 2006-2009 and 2010-2013. Both strategic plans were prepared by the current CIO, Diane Wallace. At her 2005 confirmation hearing, Wallace's testimony focused on improving DOIT's customer service record by stressing a "value-added" approach to state IT services. Also of note, Wallace submitted the following comments on the importance of e-government:

> *I believe DOIT must promote e-Government. An important part of my vision for the Department of Information Technology is the development of more on-line services for the citizens of this state. The internet is a wonderful tool. Today, we use it to share information. But we should take advantage of the functionality it offers by performing actual business transactions on-line, making it easier to do business with the State of Connecticut.*[15]

First strategic plan. DOIT's first strategic plan (2006-2009) listed five primary strategies shown in Figure II-4. Only Strategy 4 directly addresses e-government. However, it is important to acknowledge that all efforts to enhance the state's IT infrastructure and any related support resources to improve technology indirectly benefit and promote the state's e-government capabilities.

Figure II-4. DOIT's Strategic Plan 2006-2009

Strategy 1

Build a high performance organization by investing in IT personnel & addressing organizational issues

Strategy 2

Strengthen & improve comprehensive disaster backup & recovery strategies & security programs

Strategy 3

Enhance & enforce a technology blueprint & standards

Strategy 4

Use technology to improve program effectiveness & resolve business issues, making services more accessible to residents and business

Strategy 5

Implement technology best practices

Source: DOIT Strategic Plan 2006-2009

[15] Wallace, Diane. Confirmation Testimony. Executive and Legislative Nominations Committee. March 17, 2005.

2006 focus groups. In its annual reports, DOIT noted certain accomplishments toward the first strategic plan's fourth strategy. The most significant activity was hosting statewide focus groups on e-government and shared solutions with agency IT managers and business staff in November 2006. The purpose of the sessions was to advance Connecticut e-government strategy development, develop a common view of e-government opportunities, inventory the state's e-government initiatives, and assess potential for common solutions. Attendance at the focus groups included more than 50 IT and business managers, in addition to a range of professionals from 22 agencies, two constitutional offices, and higher education.

The first session covered the areas of healthcare, human services, and education. The second focus group involved general government administration and regulatory agencies. According to the focus group documentation, the CIO stated that the sessions were necessary for a better understanding of the existing gaps and barriers in order to provide the right infrastructure and network support to make the state of Connecticut's website a consumer-focused tool. The sessions were viewed as a first step for agencies to discover other agencies' efforts and identify the applications that are necessary and beneficial to constituents. As a result, the groups would be able to determine e-government commonalities, foster agency partnerships, and propose leveraging potential for applications.

DOIT prepared an e-government presentation for the groups and provided a list of the then existing state of Connecticut online services and e-government applications. Attendees were asked to review the list for any omissions to properly update the inventory. Participants were also invited to discuss and highlight major initiatives underway at the agencies. (A listing of the 2006 e-government inventory is provided in Appendix F while an updated list will be provided in the findings and recommendations report.) In addition to the inventory, the sessions provided discussion on the availability of credit card payments online. DOIT noted that the payment technology is available and should not be a barrier or obstacle for e-government projects. The group acknowledged that online payment projects could have potential savings in back room operations and manual workforce processes. According to DOIT, the work of the focus groups resulted in a presentation to executive branch leadership offering a few proposals (e.g. creating a governor's taskforce on e-government). However, according to DOIT other state agency priorities including budget concerns eventually took precedence.

Other accomplishments. DOIT reported other accomplishments to achieving the e-government strategy in the first statewide strategic plan period:

- Sixty-eight state agencies and organizations and more than 100 sites were added to the CT.gov internet portal during FYs 2006-2008.
- The state's internet access capacity was significantly expanded for future use.
- A centralized credit card service was finalized for applications requiring online credit card payment.
- DOIT was involved in the development of systems for the Department of Motor Vehicles (an online registration renewal system described in Section III) and the Department of Environmental Protection (online bird mortality reporting).

- Remote access technology was improved to the state network, computers, and systems for numerous state employees.

Furthermore, in FY 2009 DOIT partially upgraded the web content management system with web 2.0 capabilities to enable agencies to improve and expand online content.

Current strategic plan. The current strategic plan, for the 2010-2013 timeframe, outlines three primary strategies, presented in Figure II-5. Of the three, Strategy 2 deals most directly with e-government efforts. Strategy 2 is identical to the strategy previously noted in the first strategic plan, except it adds the promotion of shared information across state agencies. In the first year of this strategic plan, the department has outlined a number of potential action steps to meet the updated strategies.

Figure II-5. DOIT's Strategic Plan 2010-2013

Strategy 1

Maintain a secure, trusted & reliable technical environment that promotes efficiencies through an enforced enterprise architecture & standards

Strategy 2

Use technology to improve program effectiveness & resolve business issues, making services more accessible to residents & businesses, and promote shared information across state agencies

Strategy 3

Promote IT collaboration & partnerships that produce better IT solutions, while maintaining the culture for a high performance organization

Source: DOIT Strategic Plan 2010-2013

According to the DOIT plan, the potential action steps for strategy 2 are to:

- Further identify e-government opportunities and promote cross-agency implementation plans to ensure a common look and feel for a more effective online presence;

- Find and support innovative technologies and services to assist agencies in the effective delivery of government services;

- Increase functionality of the state's Geospatial Information System for use by state entities and municipalities;

- Leverage solutions across the Connecticut Education Network's constituents for added-value to the state's education environment;

- Prepare and support data and information sharing policies and practices; and

- Implement results-based accountability (RBA) principles to justify investments in technology solutions.

Recent accomplishments. Recently, DOIT published on its website a list of FY10 achievements. With respect to e-government, these achievements are:

- issuing new standards and best practices (referenced earlier in Appendix D);

- expanding the state's enterprise e-licensing platform (discussed in Section III);

- collaborating with the federal government in the development of a broadband mapping database which will enable the public to obtain/verify broadband availability and speed information;

- providing technical upgrades to the Department of Labor's unemployment compensation claim intake system that increased web-based filing; and

- assisting a number of state agencies with the launching of new online services:

    - an upgraded sex offender registry;
    - emissions inventory tracking for the Department of Environmental Protection;
    - emergency notification system for Department of Emergency Management and Homeland Security;
    - valid vehicle registration for Department of Motor Vehicles;
    - sign language interpreting system for the Commission on Deaf and Hearing Impaired;
    - data performance system for service providers of the Department of Mental Health and Addiction Services; and
    - online consumer complaint system for the Department of Insurance.

Current Staffing and Expenditures

Staff resources. As noted previously, DOIT provides an IT manager to assist with the day-to-day IT operations at state agencies; however, many state agencies have their own non-DOIT technology staff. State employees working under a job classification related to IT (there

are over 40 of these) are located throughout 38 executive branch state agencies, with employees classified as IT managers reporting to DOIT's CIO, regardless of physical location. Rank-and-file IT staff report to the commissioner of the state agency in which they are employed.

As noted previously, there is no official definition of e-government in the state, no dedicated office responsible for identifying e-government initiatives or coordinating them across state agencies, and no specific funding stream. Likewise, in terms of staffing, e-government projects involve both program staff and IT staff with no easy way to estimate the resources that are used to develop, maintain, and evolve an agency's website.

Using Core-CT and job codes from the Department of Administrative Services, PRI staff identified a total of 1,328 IT staff in June 2010, of which 686 staff are located in the executive branch. The IT positions not located in the executive branch are found in the legislature, Secretary of State, the Office of the State Comptroller, the Judicial Department, and Connecticut's Higher Education System.

Table II-4 shows the number of IT staff by executive branch agency. Altogether, there were 184 DOIT staff and 502 rank-and-file staff located throughout 38 executive branch entities. The Department of Information Technology had 184 IT staff, although some of these are physically located in specific agencies. Additional information on the location of DOIT staff will be presented in the next study phase.

Table II-4. Information Technology Staff by Executive Branch Agency

Number of IT Staff	***State Agency***
1 – 15	Bd. Of Ed. & Services for the Blind; CHRO; Division of Criminal Justice; DSR Dept. of Banking; DCP; DEMHS; DVA; DPW; DPUC; DECD; DOI; Elections Enforcement Commission; Freedom of Information Commission; Fire Emergency Bldg Services; Military Department; Office of Chief Medical Examiner; OPM; Office of State Ethics; Police Officer Standards and Training Council; State Library; Teacher's Retirement Board; Workers Compensation Commission
16 – 30	DAS; DOC; DDS; DEP; DPH; DPS; SDE
31 – 50	DCF; DOL; DMHAS; DMV; DOT
50 – 75	DRS; DSS
150+	DOIT
Source: PRI staff analysis of Core-CT	

IT expenditures. In FY 10, Connecticut spent slightly more than $85.1 million on IT (not including state IT staff). Table II-5 breaks down IT expenditures by type. DOIT submits a statutorily mandated expenditure report to the legislature each year. In FY 2010, overall executive branch spending on IT goods and services decreased 25 percent ($28.9 million) from FY 09 expenditures. In FY 2010, statewide IT consultant expenditures dropped an additional $5.3 million, and are now $15.7 million below FY 2005 levels of $38.2 million – an overall reduction of 41 percent since FY 2005.

Table II-5. IT Expenditures by Type (FY 10)	
Type	***Amount***
IT Hardware Lease and Rental	$1,004,579
IT Hardware maintenance and Support	$14,118,478
IT Software Maintenance and Support	$23,119,592
IT Software License and Rental	$13,613,586
IT Data Services	$10,787,969
IT Consultant Services	$22,467,741
Total	$85,111,945
Source: DOIT, Information Technology and Telecommunication Expenditures Fiscal Year 2010.	

Section III

Major Ongoing E-Government Initiatives

Over the years, Connecticut has increased the amount of government information and services online for citizens and businesses. This section provides an overview of e-government efforts the state has undertaken with varying levels of success in the areas of economic development and within the judicial system. Also, three examples of major on-going e-government projects are described in more detail.

Economic Development

Since the 1990s, there have been a number of initiatives involving a "one-stop" approach for business professionals and economic development projects. Beginning with former Governor Weicker, efforts were started to establish a customer service center for businesses. In October 1997, then Governor Rowland proposed a new state initiative to establish a single place to accept applications for all businesses and professions. This program, known as the High Efficiency Licensing Program (HELP), was intended to allow business owners as well as individuals to complete and submit one master application and pay all fees with one check for all business and professional licensing needs.

While the HELP program was not fully implemented, a public-private partnership with the Connecticut Economic Resource Center (CERC) has resulted in an online customer service center for business known as the Connecticut Licensing Information Center (CT-CLIC.com). This website assists users who are looking to start, purchase, expand or relocate a business in Connecticut with information on the various licensing and registration requirements. The website also provides visitors with resources and information to obtain trade, occupational, recreational and personal licenses. However, as noted, full implementation of a "one-stop" website for businesses has yet to occur.

Connecticut Judicial System

Connecticut has also made progress in providing government information and services to professionals and the public in the judicial system. In the late 1990s, the chief court administrator began efforts to upgrade the website for the judicial branch. Through a working group of representatives from each judicial administrative unit along with Legal Services and technology support staff, the judicial branch has developed and implemented many e-services for legal professionals and the general public. This working group, known as the judicial branch's web board, is responsible for reviewing website content, ensuring adequate site navigation, and enabling users to conduct business transactions online.

In 2007, Chief Justice Rogers established the Public Service and Trust Commission to develop a strategic plan to further improve the services offered to public, particularly those offered through the judicial branch website. After receiving a substantial amount of input from the users of the court, the commission prepared a strategic plan that was approved by the Chief Justice in June 2008. The web board is charged with implementation of the plan, and provides

quarterly status reports to the commission. The reports describe accomplishments but also outline specific obstacles to implementing the recommendations. Appendix G provides a listing of some of the judicial web-based projects underway, as part of the judicial strategic plan.

E-GOVERNMENT CASE EXAMPLES

As discussed in previous sections, there are a number of factors impacting the successful development of e-government initiatives. These include leadership on initiating efforts, accurately assessing need and technical capabilities, adequate project management, and continued commitment to provide necessary resources. Below are descriptions of three recent and continuing e-government efforts:

- **Modernization Project for the Department of Motor Vehicles (DMV)**
  - involves the upgrade of a single agency with a large cross-section of clients (e.g., dealers, insurers, public safety personnel, and individual citizens);

- **E-Licensing project for the Department of Public Health, Department of Consumer Protection and others**
  - establishes a common platform for a number of state agencies to use for their own individual purposes; and

- **Connecticut Criminal Justice Information Sharing System (CJIS)**
  - brings together different levels and branches of government to accomplish a common goal – a comprehensive criminal justice information system.

The program review staff chose these projects as examples to illustrate the diverse nature of e-government initiatives. The case examples provide insight into the different challenges faced and solutions used by each project initiative. Although there are certain commonalities among the projects (e.g., an assessment of the existing environment prior to implementation), the project descriptions vary as the individual project's experiences and circumstances have been unique. For instance, the initiation and implementation of each project have been approached differently. One project is the result of a direct legislative mandate (CJIS), another was initially self-directed (DMV), and the third (E-Licensing) was an opportunity discovered.

Each case example also highlights certain recurring obstacles that many e-government projects may encounter. Some of the project challenges include interoperability or the ability of diverse systems to work together (CJIS), the condition of the underlying data required for certain applications (DMV), and recognizing and communicating common needs among agencies (E-Licensing).

In all cases, necessary project components are collaboration of state agencies, identification and incorporation of user input, and adoption of a development and implementation plan to allow for re-assessment when necessary, such as is accomplished through the system development methodology. Finally, periodic reporting requirements are critical to

keep all interested stakeholders informed on progress. The program review staff will continue to explore the factors affecting the evolution of e-government programs in the next phase of this study.

Connecticut Department of Motor Vehicles (DMV)

The Connecticut Department of Motor Vehicles is currently implementing a wide ranging project, the DMV Modernization Program. Full implementation of the modernization program, at a cost of approximately $26.9 million, will modify the public face of the agency, the agency website. Beyond changing the public interface, the project is also re-examining and repurposing existing agency resources through fundamental changes to the group's organizational structure, and using technology to leverage those resources for better outcomes.

The primary technological solution, and the largest component, for the modernization project involves customizing, implementing, and integrating the newly designed Connecticut Integrated Vehicle and Licensing System (CIVLS). CIVLS is the agency-wide IT platform that will streamline processes within the agency. IT is expected to improve interactions with both other agencies and the public, through more efficient data use and sharing.

DMV organization and technology. The Department of Motor Vehicles is a large agency with a broad clientele base that includes individual citizen drivers, commercial drivers, motor vehicle dealerships, other state agencies, and officials from other levels of government. Due to the varied nature of transactions and clientele, as well as to the slow evolution of agency roles and duties, the agency was organized as a series of silos. This silo structure was largely responsible for agency-wide inefficiencies. Additionally, the agency's IT structure relied heavily on outdated systems, many of which were incapable of communicating with other systems within the agency.

To help illustrate some of the inefficiencies, the path of a widely used agency form was tracked. The circuitous path included many stops before the case it dealt with was closed. Each stop contributed to delays in service and introduced a higher likelihood of input errors, as the information had to be entered into several independent databases – each of which would have to be updated if any changes to the form's content were necessary. As part of a larger evaluation of the agency's effectiveness that began in 2006, the existing situation was deemed unacceptable, as there were unsatisfactory outcomes (i.e., frustration, wasted time) for all of the various clientele groups as well as the agency personnel.

The overall evaluation, conducted by DMV with outside consultants, helped identify needs for specific public and business web functions that were not available online. More importantly, the study found that implementing individual functions by modifying the current IT system would be extremely inefficient in both scheduling and funding. Instead, the DMV IT project was identified as one piece of a larger revision of the agency's overall business plan and organizational structure.

Expected benefits of the modernization program. When fully implemented, CIVLS will redesign several sets of agency interactions, including making individual access more customized and personal. One of the primary outcomes of the modernization effort will be to allow more transactions to be both initiated and completed online (i.e., a client will not need to send or receive hard copies of transaction documentation after performing an online transaction). If a transaction that is initiated online includes a component that must be dealt with in person, the overall transaction will pause at the appropriate stopping point online, then resume where the physical visit is necessary, rather than needing to be completely restarted in person.

Elimination of registration stickers. One of the notable functionality improvements that has already been put into operation is the agency's new sticker-less registration program. Eliminating the need for window stickers helps reduce mailing and production costs, as no physical sticker has to be mailed to a registrant following online registration renewal. Additionally, officials who need to have the ability to check for proper registration (i.e., municipal and state police) will have instant access to the registration database based on license information. Similarly, registrants can find registration expiration information through the newly released online verification system.

Lead-through processing. Another major improvement will be "lead-through processing", which will be included in most online transactions. Lead-through processing may be thought of as an interactive manual to help inform clientele and agency personnel about what needs to happen to achieve the desired outcome (e.g., obtain a license or registration). With lead-through processing, instructions on how to fill out forms, as well as what information is necessary, will be included as a piece of the interactive website. If a person wants to purchase specialized plates, the instructions to do so will be clearly posted as part of the application process.

Lead-through processing, among other parts of CIVLS, may help increase the effectiveness of agency personnel. A step-by-step online system should reduce the need for specialized personnel training because instructions for specific or uncommon transactions will be available as applications are processed. This may also help reduce delays that occur due to insufficient staff being trained on such transactions. Making instructions available equally to both clients and personnel will also increase agency transparency.

Dealership interaction. Dealerships are a vital part of the agency's registration and titling operation. When a car is sold, a dealer is currently able to electronically submit the necessary forms to indicate the change in title or registration. However, there are many restrictions on car registration and there is often a significant lag (frequently six weeks or more) between when a car is purchased and when the final registration paperwork is sent to the registrant. If there is a mistake in the registration submitted by a dealer, it cannot be corrected using electronic submission. Rather, any corrections must be physically taken to the agency and processed in person, contributing further to congestion, delays, and errors, as it is possible that a dealer would simply avoid correcting a mistake because of the time and resources it would take to do so.

When CIVLS is established, dealers will largely have access to the same database that is used by the agency, meaning that when a dealer registers a car, the registration is processed in real time, as if the car were being registered by agency personnel. In addition to significantly reducing wait times for documentation, agency database collaboration will also allow the dealer to correct mistakes from the dealer's own interface.

Financial efficiencies. Beyond efficiency improvements for clients and business partners, the modernization program is also expected to produce financial efficiencies. Specifically, the 2007 IBM consulting report that recommended acquisition of the CIVLS platform indicated that approximately $1.4 million will be saved annually on registration and titling services alone, largely due to reductions in paperwork, mailing, and vendor costs. Additionally, DMV expects to enhance revenues at the state and local level through improved accuracy and timeliness of such things as property tax collection, late fee collection, and the sale of specialty license plates. All told the project is expected to pay for itself completely within seven years.

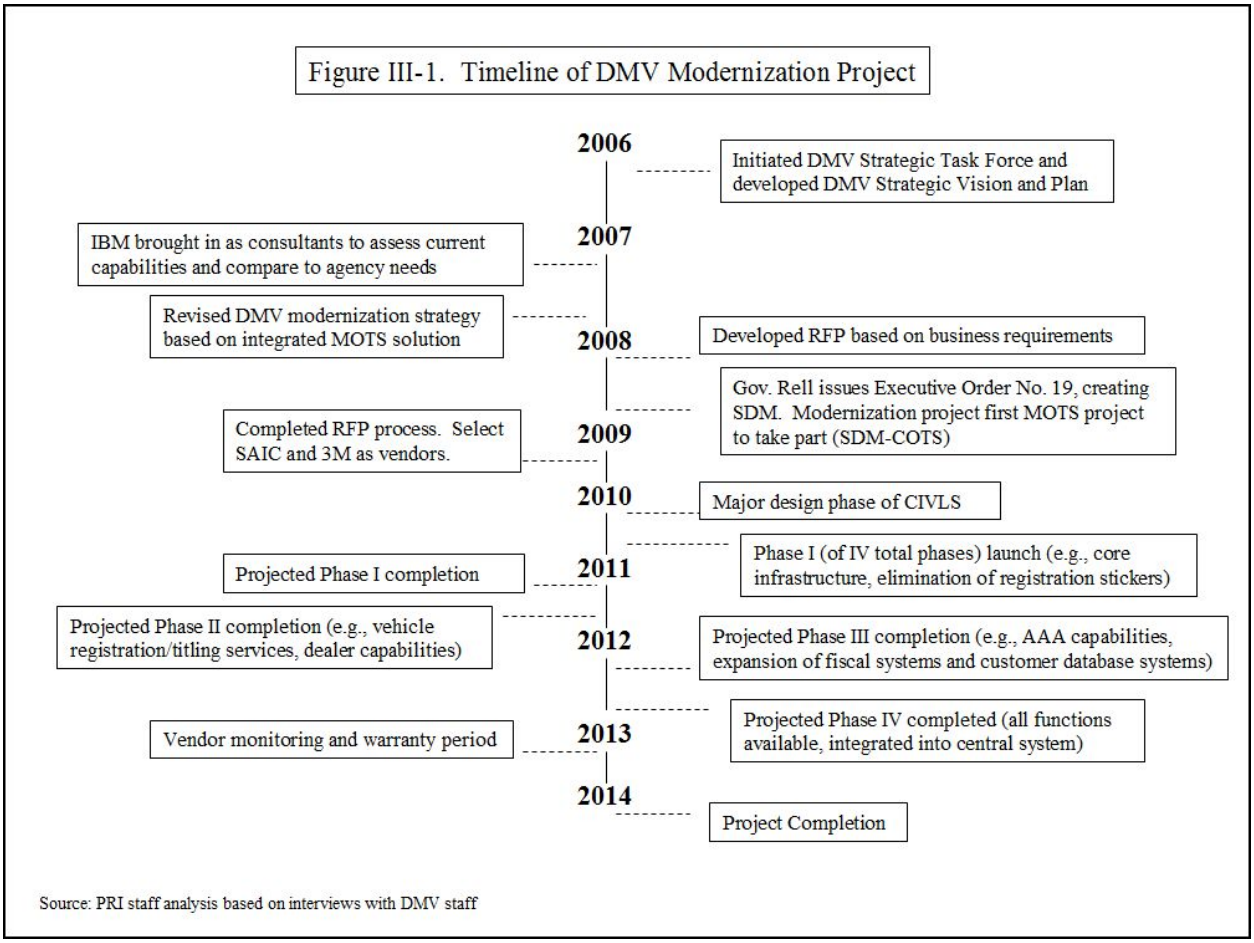
Other expected benefits. Beyond the major areas listed above, DMV expects that the modernization program will allow for implementation of several new agency features, including:

- improved efficiency in the handicap licensing program;
- more reliable e-signature process;
- barcode-based registration services;
- online permits for commercial insurance; and
- installation of kiosks at agency offices to allow clients without internet access to self-help.

Modernization project process. In order to determine whether there was a need for a technology solution, DMV's evaluation asked a few key questions, all of which were answered in the affirmative:

- "Does it provide greater value at a lower cost?"
- "Are online transactions reducing government costs?"
- "Are there positive effects on the economy and society at large?"

Beginning in 2006, DMV created an internal strategic task force that developed the DMV strategic vision and plan. In 2007, DMV engaged IBM Global Services Consulting (IBM) to re-examine the major functions of the agency and attempted to classify their current systems and determine which systems remain necessary or useful. Additionally, the IBM study also produced fiscal projections, including a cost/benefit analysis that provided the basis for the expected long term savings for the agency. Following the evaluation, planning for the modernization program began**.** Figure III-1 shows a timeline of the implementation of the modernization program.



System selection. In 2007, DMV decided to formally pursue a comprehensive technological solution that would replace several independent intra-agency automation plans. With a demonstrated need for a new system solution, DMV developed a list of components that a new system would require to be successful, which include:

- improved timeliness and responsiveness to clientele;
- streamlined, standardized, and integrated business and system processes; and
- modernized agency-wide systems, including supporting technologies such as document management.

To determine how others had approached similar challenges, DMV, with the help of outside consultants, looked at the solutions and organizational situations of several similar agencies in other states. Observation of other states and a comparison of system needs to available options led to the choice of a commercial off-the-shelf software (COTS) system solution. The use of a COTS solution was determined to meet most of the agency's business needs, while saving a considerable amount of money. A completely custom built system was projected to cost nearly twice as much as a COTS solution (approximately $40 and $22 million, respectively).

Developing a COTS framework. The decision to use a single comprehensive system that addressed the agency's business requirements culminated in the creation of a request for proposal (RFP) in 2008. In June 2008, while the modernization project was being planned, Governor Rell issued Executive Order No. 19, which called on DOIT to create a system development methodology (SDM).[16] Because the cost of acquiring the necessary software exceeded minimum thresholds, the modernization project was subject to the newly instituted SDM requirements. However, SDM was primarily focused on the acquisition of custom built systems, not off-the-shelf software. Due to this incongruity, DMV worked with DOIT to develop an SDM subset, SDM-COTS, that would focus particularly on the challenges associated with choosing, acquiring, and integrating commercial off-the-shelf (COTS) solutions.

DMV recognized that any COTS system would need to be modified slightly to meet its specific business needs. When a COTS product needs slight alteration, either to repurpose existing systems or to comply with certain technical needs, it is referred to as a modified off-the-shelf system (MOTS). The combination of a large percentage of core needs met and flexibility eventually led to the acquisition of a MOTS system as the core of the modernization project.

By all accounts, the DMV modernization project has thus far been a model of a successful SDM process. In interviews with PRI staff, DMV personnel indicated that the SDM process and much of the design phase of the project have thus far been successful due to the extensive work that went into determining the agency's business needs prior to assessing the technical capability options.

Project implementation. In 2009, the comprehensive RFP process concluded. The agency selected SAIC as the primary vendor who would partner with 3M Motor Vehicle Solutions. Working with the two vendors, the major design phase lasted five months, from February to June 2010. The project administrators decided to use an incremental approach to system implementation, focusing on projects that would have largest visible impact with the lowest amount of uncertainty (e.g., elimination of registration stickers). The implementation would be completed over four phases, beginning with Phase I in the first quarter of calendar year 2011. The final integration of the system, Phase IV, is scheduled to begin in late 2012.

As part of the acquisition contract, the vendors will aid in training and provide warranty service until 2014, at which point the project will be complete.

Funding. Funding for the modernization program began as part of DMV's FY 2005 operating budget ($1.2 million). In FY 2006, $10 million was made available through bonding specifically for upgrades of DMV's technology system. In FY 2008, an additional $14 million was bonded for the same purpose. The combined $24 million in bonding from FY 2006 and FY 2008 has been allocated. An additional $3 million is available through bonding for FY 2010, but, as of August 2010, had not been allocated. The CIVLS project specifically has a fixed price contract of $26.9 million, approximately equal to the $27 million bonded for the project thus far.

[16]The SDM was discussed previously, in greater detail, in Section II.

E-Licensing

Another example of collaboration between multiple agencies can be illustrated by the E-Licensing system that is shared by the Department of Consumer Protection (DCP) and the Department of Public Health (DPH). The E-Licensing system is a credential management system. Licensees can renew their licenses, change their address and request license verifications. E-licensing also provides other services available to the general public, such as license lookup.

History of E-Licensing effort. A brief history of DCP's and DPH's separate efforts to offer professionals an online license renewal system highlights the role of DOIT in facilitating the eventual collaboration between DPH and DCP. The Department of Consumer Protection received $250,000 in funding in 1999 to switch from an old licensing system to a new one because of Y2K compliance issues. An RFP was issued, a vendor offering an e-license commercial off-the-shelf product was selected and the system was implemented in 1999, providing for online licensing.

Soon thereafter, in 2002, DPH was allocated $50,000 to examine its current IT system to determine if it could be upgraded to allow for e-licensing of health professionals. Based on this examination, DPH concluded that the system was too old to upgrade and the department would need a new system in order to implement an e-licensing program. Funding, however, was not allocated.

Recognizing the need for better workforce data, in 2007 the legislature mandated DPH to create a secure online license renewal system for physicians, dentists, and nurses, by July 1, 2008 under P.A. 07-185. The department was given a $1,645,000 appropriation for the project. The mandate was a result of needing better workforce data, particularly on nurses, since shortages were occurring and predicted in these fields. The act required DPH to allow those using the system to pay their fees by credit card or electronic funds transfer from a bank or credit union account; it also gave DPH the power to charge a service fee of up to $5 for such payments. P.A. 08-184 amended the requirement by extending the time-frame allotted under the original act. The act required DPH to report to the Public Health Committee on the feasibility and implications of implementing a biennial license renewal system for nurses, by January 1, 2009.

After DPH received funding, the department hired a vendor to conduct a needs assessment (spending part of $1,645,000). Once the needs assessment was complete, the public health department was ready to issue an RFP, which required DPH to submit it to the Department of Information and Technology for review and approval. When DOIT received the request, in January 2009, DOIT informed DPH that DCP already had an existing e-licensing system in place, and there was an opportunity for DCP and DPH to share the system, instead of DPH developing a whole new system. DPH was initially resistant but the mandate deadline and meeting with consumer protection staff collaboratively, reassured DPH that the system could be customized to meet its needs.

In interviews with PRI staff, DPH staff indicated that DOIT was extremely helpful and enthusiastic about the project. DOIT is the host for the e-licensing system. DOIT performed a major conversion of DPH data to make it compatible with DCP's system so that that DPH was ready to offer online licensing beginning July 1, 2009.

Benefits. There were several advantages to DPH sharing DCP's system rather than creating its own. DPH was able to leverage $1.63 million and enter all health professions and health facilities into the new data system, with the intent of phasing in e-licensing. In addition, while major upgrades are the responsibility of the vendor, the vendor was willing to allow each department to directly make every-day system changes (such as changes to licensing fees), thus providing for a highly configurable system. Both departments believe that sharing system costs between the two departments has allowed them to build better databases by leveraging funds.

Another system advantage that is apparent to those renewing a license online, is that if multiple licenses are needed within a single agency or between the two agencies, the licensee only must complete information only one time and not have to re-enter the same information for each license. In addition, if an individual receives multiple licenses, even across agencies, all fees are totaled and payment can be made based on the aggregated amount.

According to both departments, feedback on e-licensing from professions has been positive. Department staff have helped ease the transition by providing support for professionals that are having trouble completing e-licensing application. In addition, both departments have taken similar marketing strategies to inform licensees of the ability to renew licenses, including working through professional and trade associations, inserting information inside of renewal notices, and publishing the ability to renew on their respective websites.

Other agencies scheduled to share system. Three other state agencies (the Departments of Agriculture, Public Safety, and Special Revenue), and the Board of Accountancy, are scheduled to share the system and go online this calendar year. Efforts have been guided by a multi-agency steering committee of DCP, DPH, DOIT and OPM. The Department of Consumer Protection and DPH have worked with all of the new agencies to assist in configuration and conversion of data to be able to share the E-Licensing system. The data conversion for the Board of Accountancy will be completed by October 15, 2010; DPS is scheduled to be completed by November 2010; the Department of Agriculture by January 2011; and the timeline for the Department of Special Revenue has not yet been set.

DCP online licensing statistics. The Department of Consumer Protection had 225,000 active licenses, registrations, or permits in FY 10, of which 41,086 (18 percent) were renewed online. This figure pertains only to the total number of licenses, permits, or registrations issued; it is not the unique number of individuals that went online to obtain them (i.e., if one person obtains three different permits, that would be counted three times). According to DCP, approximately 30,000-35,000 individuals are cross-licensed by both DPH and DCP (e.g., individuals may be licensed as a doctor and hold a controlled substance registration from DCP, a health professional who also is licensed as real estate agent, or an emergency medical technician who also does trade work regulated by DCP).

DPH online licensing statistics. In the first full year of the program, a total of 15,785 (17 percent) DPH physicians, dentists, and nurses renewed on-line. The breakdown by profession, by month is shown in Table III-1. The total number of licensees is also shown as is the percent that are renewing online.

Table III-1. DPH Online Licensing Statistics (FY 10)

Month	*RN/LPN*	*APRN*	*Dentist*	*Physician*	*Total Online Renewals*
July	34	3	3	36	76
August	181	9	4	45	239
Sept.	233	17	8	34	292
Oct.	597	88	16	261	962
Nov.	1,322	95	44	350	1,811
Dec.	1,259	63	36	315	1,673
Jan.	1,386	87	57	335	1,865
Feb.	1,231	73	49	300	1,653
March	1,417	67	54	413	1,951
April	1,234	73	37	326	1,670
May	1,208	72	58	381	1,719
June	1,369	80	60	365	1,874
Total	11,471	727	426	3,161	15,785
Total Licensees	67,582	3,281	3,280	16,702	90,845
% Renewing Online	17%	22%	13%	19%	17%
Source: DPH					

Connecticut Criminal Justice Information System (CJIS)

The Connecticut Criminal Justice Information System is an ongoing information technology initiative among the criminal justice agencies involving the standardization of data elements, the improvement of criminal history records, and the integration of data. The CJIS project has a long history, beginning in the mid-1970s when the criminal justice community recognized the need to share information among agencies. However, at that time there was no cost-effective technology to support the vision of an integrated system. Therefore, agencies continued to develop their individual systems to meet their respective statutory responsibilities, resulting in a fragmented or "silo" environment. In the 1990s, some interfaces between systems began to emerge but there was no overall plan or specific system architecture. By the late 1990s and mid-2000s, the state devoted much effort into creating a single source repository of criminal offender data known as the Offender Based Tracking System (OBTS). In 1999, the CJIS Governing Board was established to manage OBTS which is a core component of the ongoing CJIS project.

Pursuant to P.A. 08-01 (January Special Session), the CJIS Governing Board is mandated to design and implement a comprehensive, statewide information technology system for criminal justice. (The statutory system requirements are outlined in Appendix H.) The board's objective is to facilitate immediate, seamless, and comprehensive information sharing among criminal justice

agencies and law enforcement officials. A multi-agency initiative, the CJIS project bridges different branches and levels of government:

- Department of Public Safety, Division of State Police;
- Judicial Branch's Office of Chief Court Administrator;
- Judicial Branch's Court Support Services Division ;
- Division of Criminal Justice, Office of the Chief State's Attorney;
- Division of Public Defender Services, Office of Chief Public Defender;
- Department of Correction;
- Board of Pardons and Paroles;
- Department of Motor Vehicles;
- Office of Victim Advocate;
- Department of Emergency Management and Homeland Security;
- Office of Policy and Management, Criminal Justice Policy and Planning Division;
- Department of Information Technology; and
- Connecticut Police Chiefs Association.

CJIS management structure. The Connecticut Criminal Justice Information System Governing Board, within OPM for administrative purposes, includes representation from the executive, judicial, and legislative branches of state government. Municipal law enforcement is also represented. The board is co-chaired by the Lieutenant Governor and the Deputy Chief Court Administrator. Additional committees support the work of the CJIS board. The board establishes the direction and policy on justice information, and facilitates the coordination and integration of CJIS programs. The Connecticut Criminal Justice Information System initiatives relate to both federal and state programs. Table III-2 provides a list of CJIS initiatives.

Table III-2. Listing of CJIS Program Initiatives

Initiative	***Purpose***
Offender-Based Tracking System (OBTS)	Establishes a single source of criminal justice data to allow agencies and criminal justice professionals to effectively and efficiently track offenders and their associated cases.
Automated Fingerprint Identification System (AFIS)	Offers the technology to enable state and federal identification of individuals who have been arrested and booked in as little as one hour. Background applicant checks for child-care, elder-care, and volunteer positions will be available within 24 hours.
On-Line Booking System (OLBS)	Collects arrest data at the time of booking and immediately made available to the court, the computerized criminal history (CCH), the Offender Based Tracking System, the AFIS, and the law enforcement booking agencies' record management system.
Image Repository system (IRS)	Creates a state-wide repository of images including mugshots, scars, marks, and tattoos, missing persons, and stolen property and integrate these images with the appropriate applications such as the OBTS, On-Line Booking systems, and the State Police Bureau of Identification System(s).
Proposed Incident Report Warehouse	Provides a state-wide repository of incident reports in a common format for use in criminal investigations, data sharing, and crime mapping.
Source: CJIS website	

The 2008 act mandated the hiring of an executive director to serve at the pleasure of the board. The executive director is responsible for overseeing the design and implementation of the CJIS statewide IT system. In August 2008, the board selected its executive director.

Pursuant to the act and before the executive director was selected, DOIT prepared a RFP on behalf of the board. The proposal was for consultants to develop a blueprint of the business and technical requirements for the design and implementation of the CJIS IT project. The new executive director, along with a cross-section of the CJIS community, reviewed the RFP, which was issued through the DOIT procurement process. Adhering to the statutes, the DOIT CIO signed off on the CJIS recommendation but was not involved in any of the selection process and decision making with the RFP.

Assessment and evaluation. MTG Management Consultants, LLC (MTG) was selected to begin work on the blueprint project in January 2009 with a completion date of July 2009. The CJIS blueprint project was to fully map the existing criminal justice information system and provide a gap analysis of all the criminal justice agencies, to build a second RFP for the information sharing system. (A second RFP is necessary because state guidelines prohibit the same company or person who develops an RFP and sets the requirements to also bid for system development and maintenance.)

The blueprint project outlines the current state of criminal justice organizations' business processes and how information is communicated. According to a MTG summary report, the existing criminal justice community consists of 11 agencies with more than 23,000 staff members, using 52 automated systems to support their business needs.[17] MTG's blueprint report identified more than 400 data exchanges. Many of the data exchanges are paper-based and often are limited to a two-agency exchange established by using individual agency relationships rather than a system-wide initiative.

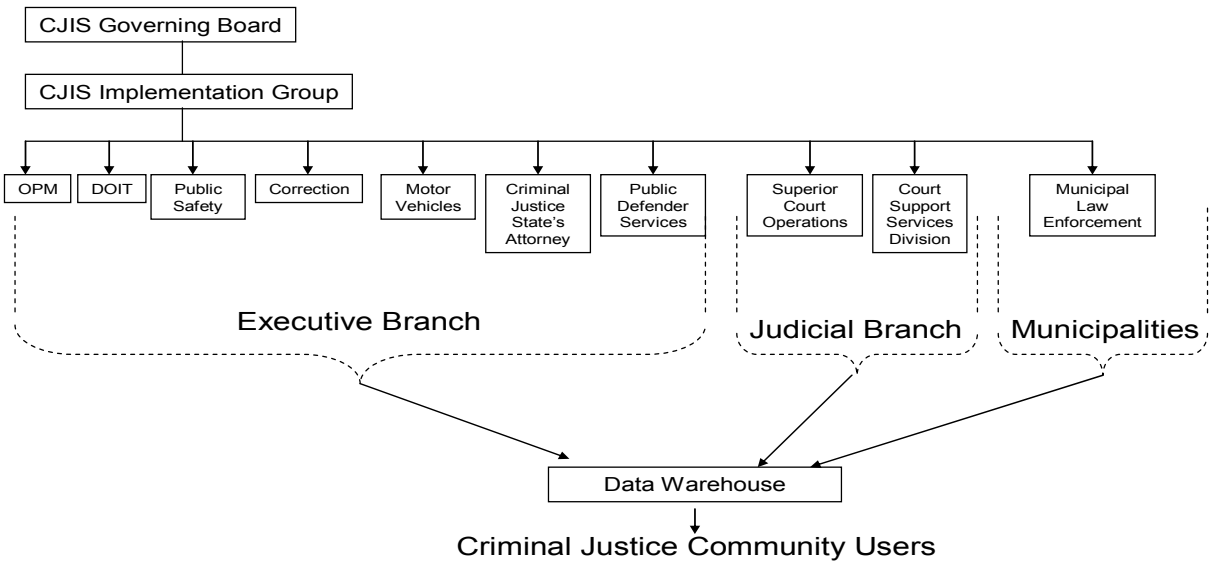
MTG found the current level of data integration in the state is primarily done manually or based on tools that only allow a user to look up information in partner agencies' systems. Given the multitude of disparate systems, criminal justice practitioners must go through various systems in order to obtain a complete picture of the criminal justice process and the individuals within that process. The resulting system, therefore, is a collection of organizational processes with linking document transfers that relies on information moving via paper and limited electronic exchanges. In addition, MTG found that some of the supporting processes for the data exchanges require re-engineering. It also concluded that there are no cost-effective means of developing and managing an integrated justice solution using the existing technology.

MTG's gap analysis included recommendations and a strategy for the CJIS RFP, which has since been approved by the CJIS Governing Board. The board recommended implementation of an enterprise system approach that will have a CJIS-wide impact; it will still allow each of the individual agencies to maintain control over its own system. The board will establish technology

[17] Report to the Legislature, Status of the Criminal Justice information Sharing System, July 1, 2009 (Attachment A)

and security standards in concert with DOIT. Figure III-2 illustrates the CJIS project management structure.

Figure III-2 Connecticut Justice Information System Project Management Structure



Source: CJIS Governing Board – Legislative Report January 1, 2009

Current status. MTG is now completing Phase 1 (Business Issues) of DOIT's system development methodology (SDM). The completion and release of the second RFP are the next steps of the CJIS implementation project. The RFP was expected to be released in August 2010, but has not yet occurred. After the RFP is released, the board will receive proposals and complete the selection process for the provider.

The RFP will require that the provider work with the CJIS agencies to further define the information exchanges. Part of this work will also be to detail the agency processes that are supported by the exchanges. Ultimately, the business rules developed for the information exchanges will delineate who gets what, when, and under what conditions.

The selected provider will be required to continue use of the SDM process in the design and implementation of CJIS. During that time, the provider will work closely with CJIS partner agencies and DOIT staff to complete the design phase. A testing strategy and plan will also be created. The provider will then continue the construction phase, including such tasks as establishing an infrastructure, creating test cases, and developing user documentation. The last phases of SDM include testing, implementation, and post-implementation. According to a recent CJIS report, these implementation efforts will continue through FY 2015.

Funding and reporting requirements. The board was originally appropriated $3 million for FY 2007-08 for the system design and implementation. According to the CJIS Governing

Board's report to the legislature, the estimated capital cost of the system implementation is $20.7 million over a 6-year period. The ongoing costs over that same period are expected to be $13 million. The cost-benefit comparison prepared by MTG suggests that the initiative will have a break-even period of less than 3 years, with a return on investment of 185 percent.[18]

The board has been required to submit status reports since July 2008, and continuing each January and July 1st thereafter to the Judiciary and Appropriations committees. It must make a presentation to these committees in conjunction with each January's report and give additional presentations during the ensuing regular legislative session concerning the status of the system's design and implementation, along with a specific itemization of any additional resources needed.

[18] Report to the Legislature, Status of the Criminal Justice information Sharing System, Jan. 1, 2010 (Attachment B)

Section IV

Connecticut State Websites

The most visible pieces of Connecticut's e-government structure are the state's websites, including both the overall state portal[19] and the series of branch- and agency-specific websites. As mentioned in Section I, Connecticut's main state web portal and samples of agency sites have been examined by several national studies that ranked states based on implementation of identified best practices. However, there has not been a complete inventory and evaluation of all of Connecticut's websites. Further, while many of the state website best practices (see Section I) include items relating to the targeted web audience, there has not been an evaluation that specifically considers the viewpoints of Connecticut's businesses and citizens.

One of this study's objectives is to examine and inventory Connecticut's websites. To date, the website inventory includes:

- web addresses (if available);
- domain name[20] classification;
- branch of government classification; and
- type classification (e.g., department, bureau, commission).

The next phase of the study will build on the web address inventory and include an evaluation to determine the extent to which state websites:

- follow best practices (e.g., privacy statements, disability access);
- meet client needs (i.e., availability of information and online services); and
- fit into a cohesive statewide web presence (e.g., functionality of the state portal, template-based layouts, non-duplicative cross-agency features).

Connecticut Web Presence

Connecticut's current web presence is based on the use of a state web portal, CT.gov. Beyond the main web portal, Connecticut's state websites are organized in parallel to the organizational structure of the state – that is, information about the state and its programs are presented via distinct websites for each government branch and agency. Agency sites often contain pages for distinct bureaus or offices. Occasionally, a specific program, which may or may not involve multiple agencies or branches, will have an individual website either within an agency website or independent of any one agency (e.g., State of Connecticut Water Status).

[19] As noted in the Introduction, a portal is a website that serves as an entry point for a common set of websites.

[20] A domain name forms the basis of a website address and usually consists of a top-level domain name (e.g., com, edu, gov) and one or more second level domains (i.e., characters or words to the left of the ".com" or ".gov"). Classification by domain name can help users understand whether and how one website is related to another.

The term "Connecticut's website" may refer to the entire collection of branch and agency websites or just the information on the state web portal. When evaluating the state's web presence, it is important to examine both the individual websites and how those websites fit into the larger statewide web presence, as both the parts and the whole contribute to use and perception of the state's website.

Methodology

A comprehensive list of state entities, which was not previously available, is necessary in order to compare the state's web presence to its physical organization. To compile the comprehensive list of state entities, two lists (sources 1 and 2 in Table IV-1) from the CT.gov portal were used; these included links to the websites of most listed agencies. In order to confirm the completeness of the information on the state web portal, two other sources of data were used (sources 3-4 in Table IV-1), though neither of the latter two sources included web address information. Simple web searches (i.e., entering an entity's name into Google Search) were used to find websites for entities that were not linked to on the state's web portal.

Table IV-1. List of Sources Used to Assemble PRI Staff's List of State Entities

Source Number	***Source Name***	***Number of Entities Added to List Based on Source***
1	CT.gov: Connecticut's Executive Branch of Government	91
2	CT.gov: Index of All State Agencies	19
3	Appropriations 2009-2010 Sub-Committee Assignment List	5
4	2008-2009 Digest of Administrative Reports	3

Source: PRI staff analysis

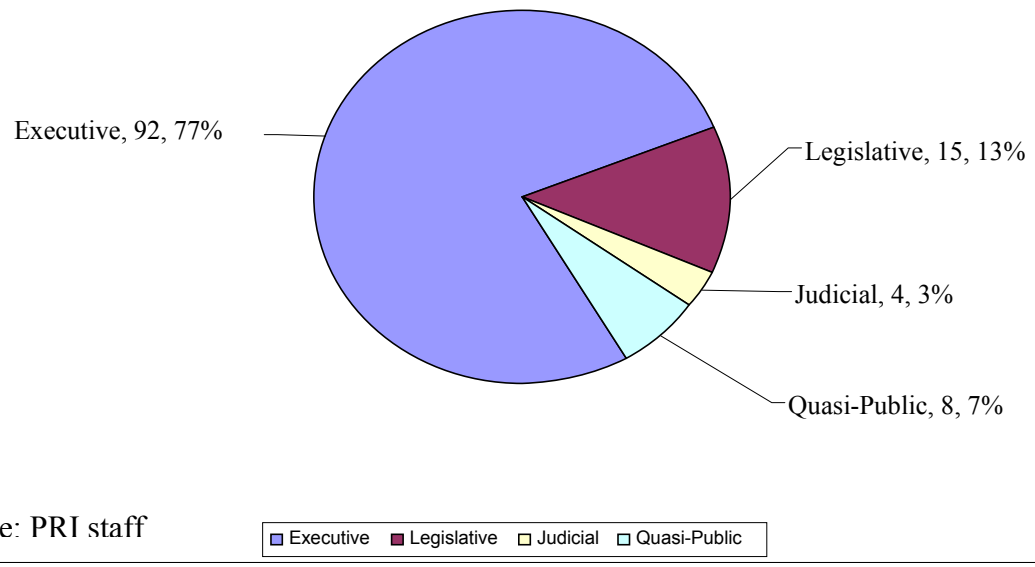
State Web Addresses

To date, from the above sources, PRI staff have identified 119 state entities across all branches of state government, of which 118 (99 percent) have web addresses.[21] The majority of state entities - and websites - are part of the executive branch. The website of the legislative branch includes the legislative portal, several commissions and major staff offices. Figure IV-1 shows the number of entities identified by branch of government.[22] The entire list of state entities, including web addresses when available, is shown in Appendix I.

[21] The Connecticut General Assembly was not included through the sources in Table IV-1, but was added to the website inventory.

[22] The list of state entities and all summary tables and figures about the list in this section do not include or count the state's main web portal, CT.gov, as it is not associated with a particular branch or entity. However, CT.gov will be examined as part of the next phase of this study.

Figure IV-1. Entities by Branch of Government



Source: PRI staff

Beyond classification by branch, state entities can also be classified by type (e.g., department, bureau, commission, office). Classification by type gives a cursory look at the scale and role of the identified entities (i.e., a "department" is likely to have a larger workforce, in general, than a "council" and some "offices" are parts of "departments"). Table IV-2 shows the number of entities that have various common classifications in their title.

Table IV-2 Name Classifications of State Entities

Name Classification	*Executive*	*Legislative*	*Judicial*	*Quasi-Public*	*Total*
Department	25	0	0	0	25
Office	20	4	0	0	24
Commission	12	7	1	0	20
Board	11	0	0	0	11
Authority	1	0	0	6	7
College/University	5	0	0	0	5
Council	4	0	1	0	5
Division	3	0	1	0	4
Fund	1	0	0	0	1
Committee	1	1	0	0	2
Other	9	3	1	2	15
Total	92	15	4	8	119

Source: PRI staff analysis

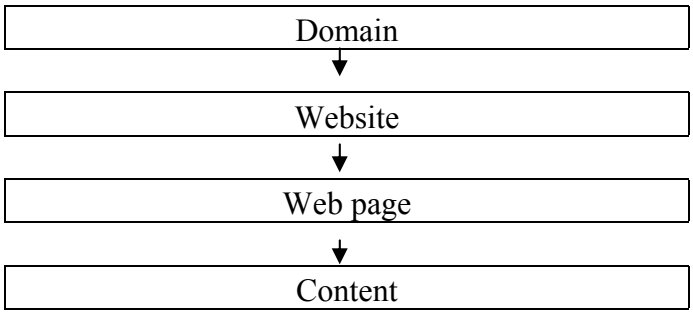
Domain Name Classification

For those entities with identified web addresses, PRI staff analyzed basic information about domain names. Domain names are the alphanumeric combinations that are generally used in lieu of typing one or more specific IP addresses[23] because they tend to be easier to remember and help avoid confusion (e.g., ct.gov is the domain name for the IP address 159.247.0.240). Beyond ease of use, domain names are important to users because they can help identify a particular site as part of a larger, perhaps more well-known or trusted, web environment. Also, specific domain names (e.g., uconn.edu, ctlottery.org) may aid in marketing and communication to a target clientele.

Domain names typically have several parts which include a top level domain (e.g., .com, .org, .us) and one or more second level domains (i.e., "google" in google.com). In 1985, the federal government established the country code top level domain of ".us" and reserved second level domains for each U.S. state and territory. In 1996, Connecticut launched its first statewide web portal using the domain name www.state.ct.us. In 2002, Connecticut created a new state web portal using the CT.gov domain name, which it continues to use today. The goals of the move to the current domain included more efficient access of information between websites and increased quality on individual sites through adoption of a statewide website design template. However, agencies were not required to migrate from existing addresses to the CT.gov domain and, to date, several have not.

Web address hierarchy. A web domain is commonly thought of as a collection of websites or sub-domains. Additionally, websites themselves are a collection of individual web pages[24], as seen in Figure IV-2.

Figure IV-2. Hierarchy of Web addresses



Source: PRI staff analysis

[23] IP addresses, short for Internet Protocol addresses, are typically a set of four numbers, separated by decimals, that identify a particular networked device (e.g., a website server, a personal computer) and enable communication between two or more devices.

[24] A web page is one particular page viewable on a web browser (e.g., Internet Explorer, Firefox). Each web page has a unique web address that includes the domain name, sub-domain if present, and an individual identifier that may either be a word or a collection of letters, numbers, and symbols. A website is composed of one or more individual web pages.

To differentiate between websites within a domain, a sub-domain is used. For instance, the Department of Environmental Protection's web address is "www.ct.gov/dep", where "dep" is the sub-domain. It is also possible to insert a sub-domain within the domain name, such as the "sots" in the Secretary of State's web address "www.sots.ct.gov".

Connecticut's domains. There are 112 unique domain/sub-domain combinations for the states 118 web addresses, meaning that seven entities have web pages that are actually part of larger websites (e.g., the Gaming Policy Board website is a sub-site of the Division of Special Revenue website). Table IV-3 shows the number of unique domain/sub-domain combinations associated with the various domain names.

Table IV-3. Use of Domain Names

Domain	*Number of Entities**
ct.gov	69
state.ct.us	11
cga.ct.gov	15
other	17

Source: PRI staff analysis
*lists only the amount of unique domain/sub-domain combinations. In six instances, multiple entities use the same sub-domain.

Most of the executive agencies use the ct.gov domain, and all legislative sites use the cga.ct.gov domain. The websites continuing to use the state.ct.us domain, including constitutional offices and executive agencies, are shown in Table IV-4.

Table IV-4. State Websites Using the state.ct.us Domain

State Entity	*Website Address*
Constitutional Offices	
Office of the State Comptroller	http://www.osc.state.ct.us/
Office of the State Treasurer	http://www.state.ct.us/ott/
Quasi-Public	
Capital City Economic Development Authority	http://www.cceda.state.ct.us/
Executive	
Department of Administrative Services	http://www.das.state.ct.us/
Department of Labor	http://www.ctdol.state.ct.us/
Division of Public Defender Services	http://www.ocpd.state.ct.us/
Freedom of Information Commission	http://www.state.ct.us/foi/
Office of Protection and Advocacy for Persons with Disabilities	http://www.state.ct.us/opapd/
Office of the Claims Commissioner	http://www.claims.state.ct.us/
State Insurance and Risk Management Board	http://www.irmb.state.ct.us/
Workers' Compensation Commission	http://wcc.state.ct.us/

Source: PRI staff analysis

The state websites that do not use the ct.gov, state.ct.us, or cga.ct.gov domains include the judicial branch, state colleges and universities, the state library, and various quasi-public authorities, as shown in Table IV-5.

Table IV-5. State Websites Using Non-standard Domain Names	
State Entity	***Website Address***
Connecticut State Library	http://www.cslib.org/
Judicial Branch	http://www.jud.ct.gov/
Executive Branch	
Connecticut Commission on Culture and Tourism	http://www.cultureandtourism.org/
Quasi-Public	
Connecticut Development Authority	http://www.ctcda.com/
Connecticut Health and Educational Facilities Authority	http://www.chefa.com/
Connecticut Housing Finance Authority	http://www.chfa.org/
The Connecticut Higher Education Supplemental Loan Authority	http://www.chesla.org/
Connecticut Innovations, Inc.	http://www.ctinnovations.com/
Connecticut Lottery Corporation	http://www.ctlottery.org/
The Connecticut Resources Recovery Authority	http://www.crra.org/
Higher Education	
Charter Oak College	http://www.cosc.edu/
Connecticut Community-Technical Colleges	http://www.commnet.edu/
Connecticut Distance Learning Consortium	http://www.ctdlc.org/
Connecticut State University System	http://www.ctstateu.edu/
Higher Education, Department of	http://www.ctdhe.org/
University of Connecticut	http://www.uconn.edu/
University of Connecticut Health Center	http://www.uchc.edu/
Source: PRI staff analysis	

The entire list of state entities, including web addresses when available, is shown in Appendix I.

Next Steps

As noted above, the next phase of the study will focus on the following areas.

1) Website examination. Program review staff will evaluate Connecticut's websites from the viewpoint of citizens and businesses. The website evaluation will focus on executive branch agency sites as well as the main state portal. Specifically, the layout and content of each website will be examined to determine how well they follow current best practices (as outlined in Section I), whether the services currently online meet consumer needs (e.g., availability of functions, ease-of-use, interactive features), and whether the site contributes to a cohesive statewide web presence.

2) Website governance. An agency's website is largely the visible product of e-government leadership, planning, and structure. However, just looking at available features does

not speak to the efforts that occur within an agency prior to the introduction of an online service. In order to look more closely at agencies' web governance decisions, agency responses to a web survey, developed by PRI staff, will be analyzed. Beyond clarification of availability of features, the survey will determine how agencies use the web as a tool to respond to clientele needs. Additionally, the survey results will clarify how decisions about website layout and content are made with an agency.

3) Best states comparison. Program review staff will collect and analyze information from states that are identified as consistently successful in implementing e-government. These states will be used as models, along with best practices, and compared to Connecticut in the broad areas of: 1) statewide web presence, especially the main state portal, and 2) organizational structure/culture of e-government activities.

APPENDICES

Appendix A

Connecticut's Information Technology Management History

Connecticut has used data management and information technology techniques in some form for over 30 years. Discussions on the proper organization and management of information technology have focused on two issues: 1) centralization of data and services, and 2) the merits of public or private management, oversight, and operation of technology systems.

Connecticut has made changes to the statewide technology support structure. The first statewide structure began in 1986 when the legislature created the Office of Information and Technology (OIT) within the Office of Policy and Management (OPM).[25] In 1989, the authority of OIT was increased to allow the office to enact strategic planning, common standards, and expenditure control.[26] As indicated in the March 1992 Final Report by the Commission to Effect Government Reorganization, the problems that OIT was given authority to address included:

- increasing expenditures;
- imperfect accountability;
- inability of existing systems to meet new demands;
- difficulty in accessing and sharing data;
- inconsistent data definitions/uneven integrity;
- lack of application interoperability;
- limited hardware interconnectivity; and
- shortage of trained personnel to manage IT efforts.

While OIT reportedly made progress in several of these areas in the early 1990's, in 1992 there were still 11 distinct data centers used by the state. The largest data center housed approximately one-quarter of the state's data processing capabilities and was run by the Bureau of General and Technical Services (BGTS) through the Department of Administrative Services.

Throughout the 1990's, discussion about the need for centralization of IT services continued. Separate studies by the Thomas Commission[27], Hull-Harper Commission[28], and KPMG Peat Marwick (commissioned by OPM)[29] suggested that a number of issues could be partially or fully fixed by a centralized IT authority.

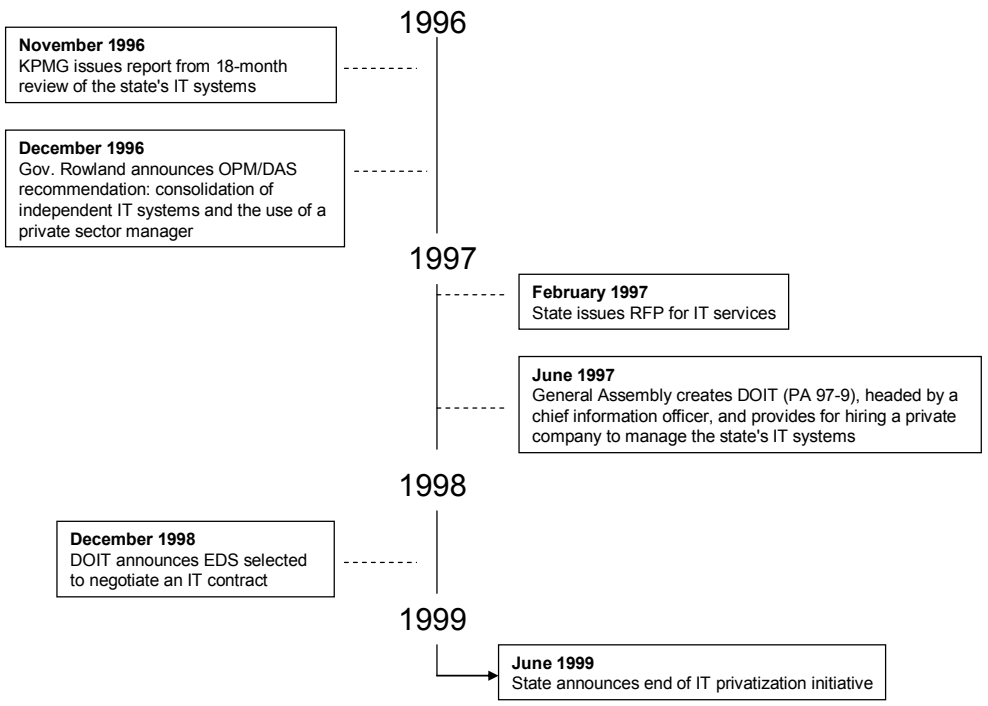
IT Privatization Efforts

The figure below provides a chronological overview of Connecticut's privatization efforts for information technology. As the figure shows, the privatization effort was initiated by

[25] Public Act 86-292
[26] P.A. 89-257
[27] 1991 Thomas Commission
[28] Hull-Harper Commission 1992
[29] 1996 KPMG Study

the Rowland administration after KPMG issued a 1996 report assessing the state's information technology capabilities. As noted above, the KPMG report was commissioned by the Office of Policy and Management after previous commissions had reviewed the IT function and proposed management and organizational changes.

Figure A-1. Timeline of The Information Technology Privatization Process



Source: PRI staff analysis

The KPMG report proposed recommendations on organization, strategic alignment, and management practices. The report found that the state's IT management was decentralized, inefficient, expensive, and unable to keep up with evolving technological developments. KPMG proposed: 1) appointing a chief information officer; (CIO) with clear responsibility for all information technology services; 2) combining the Office of Information Technology (formerly within OPM) with the Department of Administrative Services' (DAS) Bureau of Technical Services; 3) requiring each agency to have a business planning process and creating an overall management information system strategic planning process; 4) developing ways to identify technological opportunities as well as performance measures; and 5) establishing a plan for disaster recovery and business continuity in the event of system failure. The KPMG study suggested that not only should the state's IT needs be serviced by a central authority, but that the service provider should be a contracted private entity that reported to an IT oversight agency.

In December 1996, former Governor Rowland announced the study's conclusions and began the IT privatization effort in February 1997, prior to the creation of DOIT, when the state issued a RFP through the Department of Administrative Services. The schedule included opportunities for bidders to develop their proposals and for the state to evaluate them.

During the 1997 legislative session, legislation was introduced that would combine the IT functions of OPM's OIT and DAS's BGTS into one oversight agency, the Department of Information Technology (DOIT). The legislation was supported by then Governor Rowland and a Project Manager at OIT, Gregg "Rock" Regan.

Legislative debate about the consolidation of IT functions focused on two key areas: privatization of IT services, and the role of and minimum qualifications for the Chief Information Officer (CIO), who would head the newly-formed DOIT. Minimum qualifications for the CIO were debated as part of the enabling legislation, but were not ultimately adopted.

Support for privatization of IT functions was primarily based on estimates of up to $50 million annual savings and provisions for current state IT personnel to be trained and offered private sector employment. DOIT would serve as a broker and coordinator between state agency IT needs and the private contractors who would carry out the necessary functions.

Ultimately, the enabling legislation was included in an emergency certified bill[30] and DOIT was created. Shortly thereafter, Regan was named as the state's first CIO and was charged with the tasks of setting up DOIT and overseeing a request for proposal for the privatization of the state's IT services.

As part of the RFP for statewide IT services, vendors were asked to submit their best and final offer in February 1998. By the end of 1998, Chief Information Officer Regan stated that the department would enter into contract negotiations with Electronic Data Systems (EDS) Corporation of Texas. EDS was selected from among the final proposals submitted by International Business Machines (IBM), Computer Sciences Corporation (CSC), and the Connecticut State Employees Association (CSEA). At the time, Connecticut was the subject of national attention as the first state that would completely privatize IT functions.[31]

Under the privatization initiative, DOIT announced that state employees would be transfer to EDS. The original RFP and contract negotiations included components addressing the status of state government IT workers. The Connecticut State Employees Association (CSEA), which represents many state employees, publicly opposed both the privatization initiative and the contract award to EDS. CSEA expressed skepticism over benefits of privatization and job guarantee, as well as the available alternatives if the private company failed to deliver.

Through a series of public and special acts, the legislature created oversight procedures for the privatization contract process. DOIT was statutorily required to submit the contract to the Auditors of Public Accounts who would review it within 75 days. The auditors' independent

[30] H.B. 8006
[31] Field, Tom. "Connecticut Antes Up." CIO.com April 1, 1999: 33-36.

evaluation would determine whether the contract served the state's best interests in regards to efficiency, economy, contractor qualifications, and effective service delivery. The findings would be reported to the General Assembly. The Appropriations and Government Administration and Elections committees would review it. The contract would take effect automatically 45 days after submission to the General Assembly, unless a three-fifths vote of either house of the legislature rejected it.

During the summer of 1999, negotiations halted based partly on concerns about cost controls in the 7-year, $1.4 billion contract, and opposition from the public employees' union and several elected officials. On June 29, 1999, the agency announced that it had terminated negotiations with the preferred bidder without reaching an agreement and would not proceed further with the IT privatization initiative. The newly-appointed CIO decided to provide IT functions with state employees and resources. He also resolved to structure DOIT in a similar manner to the private companies that had bid for the state's IT contract.

The altered DOIT strategy included consolidating the state's IT personnel into one agency. The shifting of personnel was to happen in a series of phases, beginning with the state's IT managers. However, for a variety of reasons, both logistical and political, the centralization of IT personnel stalled out after the statewide IT managers were reallocated from various agencies to DOIT. Some IT managers were assigned to the central DOIT office, while others remained physically located in individual agencies. Rank and file staff remained under the purview of the agency commissioner.

Appendix B

Methodology used by Brookings Institute State Ranking (Darrell M. West)

A zero to 100 point e-government index for each state website was created to rank 50 states overall. Four points were awarded for each of the following 18 features:

- Publications
- Databases;
- Audio clips
- Video clips;
- Foreign language access;
- Not having ads;
- Not having user fees;
- Not having premium fees;
- W3C disability access;
- Having privacy policies;
- Security policies
- Allowing digital signatures on transactions;
- An option to pay via credit cards;
- E-mail contact information;
- Areas to post comments;
- Option for e-mail updates;
- Allowing for personalization of the website; and
- PDA or handheld device accessibility.

These features provided a maximum of 72 points for a specific website.

Each site can then earn up to 28 additional points based on the number of online services executable on that site; zero for no services, one point for one service, two points for two services, three points for three services, for points for four services, and a maximum of 28 points for 28 services or more.

The e-government index therefore runs along a scale from zero (no features and no online services) to 100 (all 18 features plus at least 28 services). The total for each website is averaged across all of the state's websites to produce a zero to 100 overall rating for that state. On average, the report assesses around 30 government websites in each state across all three branches of government.

Following are the coding instructions used to compile state website data:

Coding Instructions for State/Federal Websites (updated May 8, 2008)

Logon to a Taubman Center computer. Use Internet Explorer to open the website, *www.InsidePolitics.org*. Minimize the screen and use the cursor to resize it so that it occupies the upper two-thirds of your computer screen.

Click on SPSS and open the file I have emailed you called "coding08state.sav". Save this file to the hard drive of your computer. Minimize the SPSS data file and use your cursor to resize it so that it occupies the lower one-third of the screen. With both of these screens open, you can code the websize contents directly into the SPSS file. At the end of the coding, make sure you save the contents of the SPSS file through File, Save.

Once you are set for coding, click on the "States" link at the bottom of InsidePolitics.org and choose a particular state government. You will see the official websites of the 50 states. Click on the state sites you are assigned, and code webpages for Executive, Legislative, and Judicial pages. You will code one line of data for each website. There will be around 30 sites per state and one for each federal agency. For many of our variables, you will be entering a 0 for no or a 1 for yes.

For federal websites, click on *www.firstgov.gov*, and code federal webpages under Executive, Legislative, and Judicial branches (see pointers on left side of firstgov homepage).

RA Last Name: your last name

Website URL: you don't need to include www but should include the rest of the URL for that site.

Website Name: such as Human Services. The name of the website can be shortened down (i.e. just typing 'Agriculture' instead of 'Department of Agriculture'). However, it is very helpful to be thorough when marking down the website name in case you have to go back to a site you previously worked on.

State: enter two digit upper case alphabetic code such as RI for Rhode Island or CA for California (see list shown below). Use US for all national government sites. Do not use periods in state or US abbreviation.

AL Alabama	IN Indiana	NE Nebraska	RI Rhode Island
AK Alaska	IA Iowa	NV Nevada	SC South Carolina
AZ Arizona	KS Kansas	NH New Hampshire	SD South Dakota
AR Arkansas	KY Kentucky	NJ New Jersey	TN Tennessee
CA California	LA Louisiana	NM New Mexico	TX Texas
CO Colorado	ME Maine	NY New York	UT Utah
CT Connecticut	MD Maryland	NC North Carolina	VT Vermont
DE Delaware	MA Massachusetts	ND North Dakota	VA Virginia
FL Florida	MI Michigan	OH Ohio	WA Washington
GA Georgia	MN Minnesota	OK Oklahoma	WV West Virginia
HI Hawaii	MS Mississippi	OR Oregon	WI Wisconsin
ID Idaho	MO Missouri	PA Pennsylvania	WY Wyoming
IL Illinois	MT Montana		US All Federal sites

Branch: code 1 for executive branch, 2 for legislative branch, 3 for judicial branch, and 4 for portal page (the homepage for each state that serves as the gateway for all the websites of a particular state). The legislature and judiciary often have their own portal-like pages, but you still should code the branch as 2 and 3, respectively.

Particular Agency: Enter numeric code shown below on next page. **If coding an agency not easily classifiable, just leave it blank.** Also, leave this field blank for legislature and judiciary portal sites. As agency titles vary from state to state, here are the various headings we used for each agency that often used different names and where some of the more problematic agencies can be found.
Controller: Also can be Auditor or Comptroller
Health: sometimes Public Health
Human Services: Social/Family/Welfare Services

Environment: Environmental Quality/Protection
Higher Education: Postsecondary Education, Board of Regents
Housing: Often goes under the name of Housing Development/Finance Authority
Motor Vehicles: Can be difficult to find, usually part of the Transportation department, but also can be part of varied departments like Revenue, Secretary of State, or a separate entity altogether. Use the search engine if you cannot find it.
Business License: Some states have specific licensing departments, but not often easy to find. Check the state portal page to see if there is an online service for business/vendor registration or corporate filing and work from there.
Hunting License: Either a distinct department (such as Game and Fish, Wildlife) or a subdivision of Natural Resources
Elderly: Aging/Senior Services. Often found in the Health or Human Services departments
Elections: Sometimes a distinct agency, usually part of the Secretary of State
Consumer Protection: Usually found through the Attorney General's page
Business Regulation: Professional Regulation, Commerce

Statewide Officials	**Ex Agencies**	**Legislature**	**Judicial**
1 governor	10 health	50 House	80 Supreme Court
2 lt governor	11 human services	51 Senate	81 Superior Court
3 attorney general	12 environment	52 A Committee	82 District Court
4 secretary of state	13 taxation/revenue	53 Leg Bills	83 Family Court
5 treasurer	14 labor/employment	54 Leg Membership	84 Workers Comp.
6 controller	15 elem/sec education	55 Leg Journals	85 Appeals Court
	16 higher education	56 Leg Rules	86 Circuit Court
28 planning	17 housing	57 Constitution	
29 elderly	18 corrections		
30 veterans	19 econ development		
31 elections	20 motor vehicles	24 admin/personnel	99 portal page
32 ethics	21 business license	25 natural resources	
33 consumer protection	22 hunting license	26 tranportation	
34 business regulation	23 agriculture	27 budget	

Has Online Publications: 0 no, 1 yes This category includes news releases, newsletters, journals, reports, studies, laws, or constitutions. Often major reports are in PDF format. These would count as publications.

Offers Online Databases: 0 no, 1 yes This can vary widely from statistics, charts, tables, data to actual databases (which are like search engines except for that they are customized to retrieve specific information rather than search the entire website). Phone directories and job opening listings were not included as a database. Databases are often found in the statistics, information, or publications sections of webpages.

Has Audio Clips: 0 no, 1 yes Any sound file whatsoever, whether it be in the form of a speech, radio show, radio public service announcement, podcast, website welcome or music, such as a state song or national anthem. These can often be deeply embedded in websites and hard to find. Try searching Google for "site:www.site.gov audio." Also try other Google searches that might turn up audio files by replacing "audio" with "mp3," "windows media player," "real player."

Has Video Clips: 0 no, 1 yes Any video file. Examples are televised speeches/events, department commercials, public service announcements, and website welcome. Could be a video clip or example of streaming video. Powerpoint presentations, slideshows, and Java content are not included as video clips. These can often be deeply embedded in websites and hard to find. Try searching Google for "site:www.site.gov video." Also try other Google searches that might turn up audio files by replacing "video" with "mpg," "windows media player," "real player." Some sites display non-continuous webcam images (e.g., a traffic webcam which updates every 5 seconds) – these do not count as video clips.

Has Foreign Language or Language Translation: 0 no, 1 yes Can be a webpage entirely in a non-native language (ex. 'Espanol' for English-speaking countries), a link to language translating software like Babelfish, or having publications available in other languages. Some sites have links to translation software from the homepage. Other sites have only a publication (e.g., driver's manual) or downloadable form in other language—this counts. As these can be hard to find, try searching Google for "site:www.site.gov espanol" or "site:www.site.gov Spanish."

Has Commercial Ads: 0 no, 1 yes Do not count as ads links to website developer and computer software available for free download such as Adobe Acrobat Reader, Netscape Navigator, or Microsoft Internet Explorer since they are necessary for viewing pages. Traditional banner or pop-up ads count. Ads have to be clear commercial sponsorships of a product or service. It must appear that the advertiser paid for the placement and the ad must lead the visitor to the external commercial website. Listings of phone numbers and web addresses provided for the visitor's convenience (such as a directory of airlines or hotels or listing of tax assistance services) do not count, but banner ads that the advertiser paid for do. Many links on sites appeared to be ads, but after clicking on them, they were only promoting a particular government program or event. Links promoting state tourism often took this form.

Has Website Section Requiring Premium Fee for Entry: 0 no, 1 yes Fee required to access particular areas on website (such as business services, access to databases, or viewing of up-to-the-minute legislation). This is not the same as a user fee for a single service. For example, you would not code a yes for the fact that some government services require payment to complete the transaction. This indicator is more for website sections requiring payment to enter that area or to access a set of premium services. Code subscription service as a yes for premium fee if there is a cost associated with the subscription. Count as yes if you have to pay a set annual subscription fee, even if the visitor has to pay user fees in addition to the fixed annual subscription fee. Most subscription services have a "home page" on the portal and provide services on various agency websites—code "yes" for both the portal and the individual agency websites where the subscription services are found.

Site Meets W3C Disability Guidelines: 0 no, 1 yes To evaluate this, use the Wave Version 4.0 software found at http://wave.webaim.org developed by the Center for Persons with Disabilities at Utah State University. Type in the URL for the front page of the website you are evaluating and click on "Wave This Page" to determine whether the site meets accessibility guidelines. You will get a report indicating whether the site meets or does not meet the guidelines.

Has Privacy Policy on Site: 0 no, 1 yes Any mention of the privacy policy of the particular websites, even if it merely says the site has a privacy policy. Sometimes, a privacy policy can be found at the bottom of the page under about us, privacy, or copyright section. Occasionally the privacy policy only appears on the page where the user has to input information. Try searching Google for "site:www.site.gov privacy policy" or "site:www.site.gov privacy statement."

Privacy Policy Prohibits Commercial Marketing of Visitor Information: 0 no, 1 yes The privacy policy states that it doesn't give/sell/rent visitor information to third parties. Can also code "yes" if the policy states that user information will only be used for the purpose for which it was submitted.

Site Prohibits Creation of Permanent Cookies or Individual Profiles of Visitors: 0 no, 1 yes Most privacy policies say whether they use session cookies (which are deleted when the browser is closed) and/or permanent cookies (which are saved on the hard drive). Code "yes" if the privacy policy prohibits permanent cookies and "no" if it does not.

Site Prohibits Sharing Personal Information Without Prior Consent of User: 0 no, 1 yes The website will only share personal information (such as giving your home address) with your consent and to specifically answer your question. Passing on information to law enforcement authorities would not be coded as a yes since that is a non-commercial reason for sharing personal information.

Site Can Share Personal Information With Legal Authorities or Law Enforcement: 0 no, 1 yes The website will share personal information (such as giving your personal information) with legal authorities, law enforcement, or to a court under a court order. Sometimes policy specifically states that it will share with law enforcement if necessary, while other times policy states that it will disclose "when permissible."

Has Visible Security Policy: 0 no, 1 yes The security policy is its own distinct link or part of the privacy policy. Once again, any mention of the policy is adequate for coding. If the site is listed as being "secure," that would be coded as having a visible security policy too.

Security Policy Uses Computer Software to Monitor Network Traffic: 0 no, 1 yes Most all security policies with this feature will distinctly say that they use computer software to monitor network traffic. Aesthetic/informational features like webcounters do not count. May not specifically say it uses "software". Might say it tracks IP address, domain, browser type, etc.

Has Official Govt Services Available to Citizens: 0 no, 1 yes Can take a variety of forms. Often an actual state service where the entire transaction can occur online such as ordering a motor license, registering to vote, applying for a business permit, filing taxes online, etc. If you have to order a service online and then mail something in to execute the service, it is not fully transactable online and therefore is not considered an online service. Services must provide features where citizens/businesses apply for a service online and receive some tangible product/benefit in return. Some examples of this are ordering publications, renewing license, and filing taxes. Being able to fill out an online application and electronically submit it directly to the department. Entering social security numbers to check tax refund status would be considered a service since one is not merely entering information, but the government is providing specialized information to the web visitor. Databases that generate customized results for the user count as services. Dynamic maps showing status of major highways count as services. Databases of judicial opinions, legislative bills, and attorney general opinions count as services. Think of services as something that a citizen can take care of entirely on the website, without having to mail something in, make a phone call, or visit an office. But mere text – whether on a web page or on a publication – does not count. Must involve inputting information, whether personal details or database queries. Furthermore, many websites have 'Service' links that provide no actual online services (instead just info on different programs run by the agency), so we had to check the links specifically for that purpose. Another important note is that even if the link to an online service connects the user to a different department to complete the transaction, it still counts as a service for that site. This is often seen on the state portal pages, as they document many of the services available on all of the different agencies' sites.

Has Services Requiring User Fee: 0 no, 1 yes Fee required to execute a particular service online. For example, if a driver's license costs $25 and the citizen has to pay $25 online, that would not be a user fee. It is just the normal fee for the service. If, however, the agency charges a $3 processing fee on top of the $25, that would be a user fee.

Number of Different Services: code actual number (0 if none) Simply count the number of online services. A site offering both hunting and fishing licenses would be coded as two services since those serve different needs and different audiences.

Allows Digital Signatures on Transactions: 0 no, 1 yes (if not apparent, code no) Code "yes" if site specifically mentions that it has digital signature capabilities. Otherwise, code "no."

Allows Payments Via Credit Cards: 0 no, 1 yes (if not apparent, code no) The website has the capability to use credit cards to complete the online transactions. It was still included even if the link to use the credit cards took us to an external site to enter the information. This often is found in conjunction with services or publications that can be ordered with a credit card.

Can Email Dept (other than webmaster): 0 no, 1 yes Any type of e-mail address for any person or division in the department worked. Even if there is not a specific e-mail address, if there is a specific form that can be filled for comments/questions/suggestions and submitted online, this counts. This is found on the websites of large agencies and top elected officials. The e-mail address of the webmaster does not count, but a general agency address (info@agency.gov) does. Often located under the Contact Us section.

Has Area to Post Comments (other than thru email): 0 no, 1 yes These take the form of user surveys, bulletin boards, chat rooms, blogs, or guestbooks. A comment form that generates an e-mail to the office counts (it also counts for e-mail category above). Simply having an address to e-mail comments and suggestions does not count.

Has Option for Automatic Email Updates, Newsletters, or RSS/XML Feeds: 0 no, 1 yes The website gives the user the ability to sign up and register online in order to receive agency updates in such forms as newsletters, late-breaking news, and website notifications. These updates then are sent out to people who have registered to receive information or notifications.

Allows Personalization of Website (can tailor page to viewer interests): 0 no, 1 yes Can customize website to your particular interests. Often referred to as "MyNC". This can mean either customization for the individual user or customization based on various constituencies (for example, different pages specialized for parents, students, tourists, or teachers.

Has PDA or Handheld Access: 0 no 1 yes. This would include access to the government website through a pager or mobile phone or access through any kind of personal digital assistant (as opposed to computer access through the Internet). Often prominently mentioned on homepage.

Flesch-Kincaid Grade Level Readability: From the front page of the govt website, copy the text by clicking Edit, Select All and then Edit, Copy. Minimize this screen and open a blank Microsoft Word document. Click Edit, Paste to move this website text into the blank Microsoft Word document. To set your computer to display readability statistics in Microsoft Word, click on Tools, Spelling and Grammar, Options, and check box for "show readability statistics" and then click OK. To check the text you pasted into this blank Microsoft Word document, click on Tools and Spelling and Grammar (or the ABC icon on the ruler). Keep clicking on Ignore All until you come to the end of the text and you see the display of readability statistics. The Flesch-Kincaid Grade Level Readability number is at the bottom of this display. Round to the closest whole number and enter this one or two digit number into your data base. If page generates a "0" score, open a new blank document and paste the contents of the site by going to Edit/Paste Special/Unformatted Text. This still might not work: some sites imbed their text in an image file that Word can't read.

Appendix C

Methodology Used by E-Governance Institute at Rutgers University (Marc Holzer, et al.)

The U.S. State E-Governance Report (2008) assigned a rank and rating to each of the 50 states based on an assessment of state websites. A zero to 100 point weighted score was assigned to each state website. The weighted scores were then used to create a 50 state rank. The overall score was based on 98 measures: 43 measures were dichotomous (measures were coded 0,1 or 0,3); and 55 measures used a four point scale (measures were coded 0,1,2,3). Descriptions of the four possible codes are given in Table C-1.

Table C-1. E-Governance Scale

Scale	***Description***
0	Information about a given topic does not exist on the website
1	Information about a given topic exists on the website (including links to other information and e-mail addresses)
2	Downloadable items are available on the website (forms, audio, video, and other one-way transactions, popup boxes)
3	Services, transactions, or interactions can take place completely online (credit card transactions, applications for permits, searchable databases, use of cookies, digital signatures, restricted access)

Source: Marc Holzer, Aroon Manoharan, Robert Shick, Genie Stowers, U.S. States E-Governance Report (2008), An Assessment of State Websites, E-Governance Institute (Rutgers School of Public Affairs and Administration.

Each measure was used as part of one of five indexes:

- privacy/security;
- usability;
- content;
- services; and
- citizen participation.

The privacy/security index contained 18 measures while the remaining four indexes contained 20 measures each. The total possible raw score for each index ranged from 25 to 59 for a total of 219 possible points. However, each index was weighted equally, from zero to 20, in the overall weighted score.

General descriptions of the measures used within each index are given in Table C-2.

Table C-2. Descriptions of Measures by Index	
Privacy/ Security	
1-2. A privacy or security statement/policy	12. Secure server
3-6. Data collection	13. Use of "cookies" or "Web Beacons"
7. Option to have personal information used	14. Notification of privacy policy
8. Third party disclosures	15. Contact or e-mail address for inquiries
9. Ability to review personal data records	16. Public information through a restricted area
10. Managerial measures	17. Access to nonpublic information for employees
11. Use of encryption	18. Use of digital signatures
Usability	
19-20. Homepage, page length.	25-27. Font Color
21. Targeted audience	30-31. Forms
22-23. Navigation Bar	32-37. Search tool
24. Site map	38. Update of website
Content	
39. Information about the location of offices	49. GIS capabilities
40. Listing of external links	50. Emergency management or alert mechanism
41. Contact information	51-52. Disability access
42. Minutes of public	53. Wireless technology
43. State code and regulations	54. Access in more than one language
44. State charter and policy priority	55-56. Human resources information
45. Mission statements	57. Calendar of events
46. Budget information	58. Downloadable documents
47-48. Documents, reports, or books (publications)	
Service	
59-61. Pay utilities, taxes, fines	70-71. Bulletin board about civil applications
62. Apply for permits	72. FAQ
63. Online tracking system	73. Request information
64-65. Apply for licenses	74. Customize the main state homepage
66. E-procurement	75. Access private information online
67. Property assessments	76. Purchase tickets
68. Searchable databases	77. Webmaster response
69. Complaints	78. Report violations of administrative laws and regulations

Citizen Participation	
79-80. Comments or feedback	90-91. Online survey/ polls
81-83. Newsletter	92. Synchronous video
84. Online bulletin board or chat capabilities	93-94. Citizen satisfaction survey
85-87. Online discussion forum on policy issues	95. Online decision-making
88-89. Scheduled e-meetings for discussion	96-98. Performance measures, standards, or benchmarks
Source: Marc Holzer, Aroon Manoharan, Robert Shick, Genie Stowers, U.S. States E-Governance Report (2008), An Assessment of State Websites, E-Governance Institute (Rutgers School of Public Affairs and Administration.	

Appendix D

Department of Information Technology's Web E-Government Best Practices

The following is one of nine best practice documents made available by DOIT[32]:

Web E-Government Best Practices:

Best Practice 1. The Web/E-Government Domain has dependencies with the Application Domain. Please utilize both sets of standards when creating any website or application that will be available online.

Best Practice 2. **"**DoIT Payment Service" must be used by State agencies when developing websites and/or applications that need to process Credit Card transactions. This payment service uses PayPal Payflow Pro API to communicate with PayPal, the secure commercial Credit Card processing tool.

Best Practice 3. The use of Adobe Flash is limited to only creating animated introductions and features on existing websites and for video. Flash cannot be used to develop interactive websites or applications. Special consideration should be given to ensure accessibility of any Flash content.

Best Practice 4. Within this domain, Web browser standards are set for development, testing, and production. These are the minimum web browser requirements that websites and web applications being created for state business should function within.

Best Practice 5. It is the policy of the State of Connecticut to ensure that people with hearing, visual and other disabilities have equal access to public information that is available on the Internet and the Web to ensure access.

Best Practice 6. Federal Rehabilitation Act Section 508 standards must be incorporated on state funded websites.

Best Practice 7. It is the direct responsibility of the agency and its web page developers To become familiar with the guidelines for achieving universal accessibility and to apply these principles in designing and creating any official State of Connecticut Website.

Best Practice 8. Testing tools should be used to validate a site's adherence to Section 508. Recommended tools are available at: http://www.access.state.ct.us/tools.html.

Best Practice 9. CT.gov "branding standards for new websites or applications is available at the end of this document. (See Figure A – C).

[32] "DOIT: Best Practices. (June 25, 2010). Retrieved September 28, 2010 from http://www.ct.gov/doit/cwp/view.asp?a=1245&q=462172

Best Practice 10. Agencies should review the CT.gov Website Guidelines for more details on home page content standards.

Best Practice 11. Data Validation must be written into all online forms.

Best Practice 12. A security assessment should be performed on all new websites and Applications that collect information or were developed in a Programming language. (Refer to Security Domain Document and Application domain Document).

Best Practice 13. All websites and applications should have a valid privacy policy that meets the requirements of the application or website where it resides. CT.gov policy can be used or modified as needed to ensure policy compliance. (Refer to Application Domain document).

Best Practice 14. All applicable policies should be reviewed prior to creating any new websites and applications (including social networking websites). (Refer to the State of Connecticut Policies Relevant to this Domain).

Best Practice 15. Content on websites and applications should be reviewed, at a minimum, on an annual basis. Outdated content should be removed or modified.

Best Practice 16. Content no longer needed should be deleted from web servers. Web servers should not be used for archive purposes. All content that needs to be saved and stored for record retention should be housed locally at the agency.

Best Practice 17. Websites that are no longer being used must be taken offline and the domain name should be redirected to an active website.

Appendix E

System Development Methodology (SDM)

One significant policy change DOIT has established for information technology projects is the use of the system development methodology (SDM). The purpose of SDM is to institute uniform procedures to promote consistency in practices and controls used in the planning and execution of IT projects that result in more efficient project timelines and costs. The SDM is used in conjunction with existing policy and guidelines for acquisition and procurement.

In June 2008, Governor Rell issued Executive Order 19[33] requiring the use of DOIT's System Development Methodology (SDM) for all information technology projects in the executive branch, with the exception of state institutions of higher education. (SDM does not apply to the Judicial or Legislative branches of government.)

Currently, there are four SDM variations available for projects depending on the size and scale of the project. As shown in Figure E-1, these include SDM Standard, Lite, Commercial-Off-The-Shelf (COTS) and Rapid Application Development (RAD). Every technology project is required to use SDM, with the exception of a project where all the following criteria apply:

- estimated cost is less than $50,000;
- duration is expected to be less than 8 weeks;
- project involves a single agency;
- a single application interface is used; and
- only one dedicated database is utilized.

Figure E-1. Four SDM Variations

SDM-Standard: used for large or complex custom-development or infrastructure projects

SDM-COTS: used for projects pursuing the purchase of commercial-off-the-shelf (COTS) business applications

SDM-Lite: used for smaller, lower-risk application development or infrastructure projects meeting the SDM-Lite criteria

SDM-RAD: used for fast-paced, rapid application development projects using an iterative or "spiral" development model.

Furthermore, SDM projects are subject to monthly reviews if one of the following applies:

- total project costs are $1 million or greater;
- duration of at least 6 months;
- involves an enterprise-wide project; or
- CIO specifically selects for review.

[33] Executive Order No. 19 is available at the end of this appendix

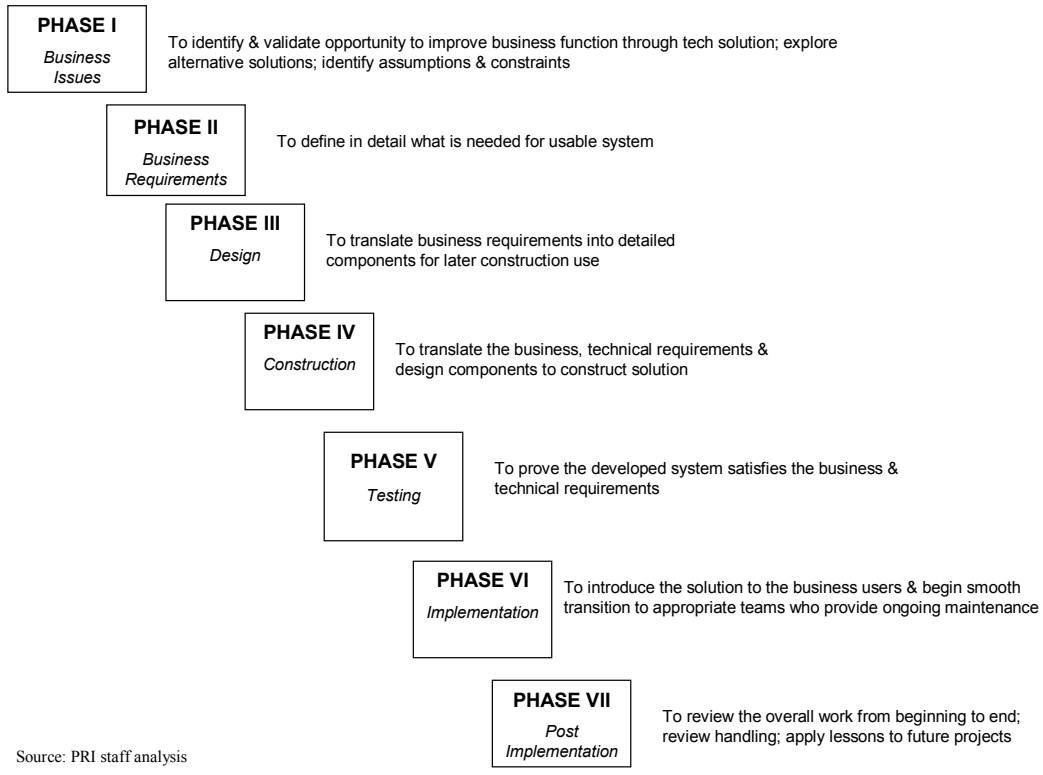
The implementation of SDM should yield several benefits including that it allows the state to be aware of projects across agencies. The process may foster better coordination, eliminate redundant efforts, and help leverage interagency and statewide investments. It should also assist in remediating risks and problems and holding vendors accountable. It also avoids project scope creep.

Through the use of SDM, each IT project has a defined project plan overseen by an identifiable project manager and clearly assigned roles for a range of project responsibilities. The process requires sign-offs at each phase in order for project to proceed, re-direct, or stop based on a review of results and continued need. SDM requires documentation to record all decisions.

Three of the four SDM process variations include seven phases (See Figure E-2). Depending upon the size and complexity of the project, phases may be combined or overlap (requiring DOIT approval). Every advance to the next phase requires a reasoned "go" or "no-go" decision, and a formal sign-off from the executive sponsor. Cost-benefit data and analysis should become more detailed at each phase.

Milestones for the start and end date of each SDM phase are established in the first phase as a component of the project management plan. The plan is presented to the Project Steering Committee (PSC) at the phase's end decision point meeting. A "go" decision from the PSC will confirm the dates. These dates cannot be changed without the approval of the PSC.

Figure E-2. DOIT's System Development Management (SDM) Phases



Source: PRI staff analysis

STATE OF CONNECTICUT

BY HER EXCELLENCY

M. JODI RELL

GOVERNOR

EXECUTIVE ORDER NO. 19

WHEREAS, the State of Connecticut spends millions of dollars each year on the acquisition, design, development, implementation, and maintenance of information systems vital to the health, safety, and welfare of its citizens; and

WHEREAS, ensuring information systems deliver as expected and within established costs and timelines requires the use of a consistent set of development practices and methods; and

WHEREAS, use of a System Development Methodology is a best practice used extensively by industries and sectors; and

WHEREAS a System Development Methodology can help ensure that information systems meet state and agency mission objectives, are compliant with current and planned technical architecture, and are easily maintained and cost-effective to enhance.

NOW THEREFORE, I, M. Jodi Rell, Governor of the State of Connecticut, acting by virtue of the authority vested in me by the constitution and by the statutes of this state, do hereby **ORDER** and **DIRECT** that:

The Department of Information Technology (DOIT) issue and publish a System Development Methodology (SDM) and an SDM Policy for the development of information systems;

Executive branch agencies, and all information technology vendors and consultants retained by Executive Branch agencies to develop and deliver technology, with the exception of State institutions of higher education, conform to the DOIT SDM and the DOIT SDM Policy when planning and executing IT projects; and

The Department of Information Technology shall periodically report to the Office of the Governor on the implementation of the SDM and the SDM Policy and their benefits to the State of Connecticut.

Dated at Hartford, Connecticut, this 19th day of June, 2008.

M. JODI RELL
Governor

By Her Excellency's Command

Susan Bysiewicz, Secretary of the State

Appendix F

E-Government 2006 Application Inventory

In 2006, DOIT prepared an e-government presentation for two focus groups that were provided with a list of the then existing state of Connecticut online services and e-government applications. The following is a reproduction of the 2006 inventory of online services.

Ask a Question

- Ask a Question of the Ct State Library

Motor Vehicles and Transportation

- Find your auto emissions test date and location
- Track a flight using the Bradley Airport Flight Tracker
- Download a Map
- Moved? Register you e of address with the Department of Motor Vehicles
- Order Information on Alternative Transportation Options and Ideas
- On-Line "Vanity Plate" Lookup
- On-Line Driver's License Practice Test
- Find a Park and Ride Location

Taxes

- File Your Personal Income Tax Return On-Line
- Files Sales and Use Taxes On-Line
- Business and Other On-Line Tax Filing

Employment

- Job Seeker? Post your resume and set up an on-line career account
- File an Unemployment Claim
- Hiring? Post available jobs and search for candidates

Education and Learning

- Open a College Savings Account online with the Connecticut Higher Education Trust
- Visit the Connecticut Digital Library
- Plan for College at CT Mentor
- Apply to state colleges and universities on-line
- Take a course or get a degree on-line from state colleges and universities
- Take a sample online learning course with the CT Distance Learning Consortium

Boards and Commissions

Want to be considered for appointment to a state board, council, commission or task force? Register with a Talent Bank sponsored by various state commissions. Each commission reviews

applicants and makes recommendations to the Governor and Legislative Leaders as vacancies occur.

- Permanent Commission on the Status of Women Talent Bank
- African-American Affairs Commission Talent Bank
- Latino and Puerto Rican Affairs Commission Talent Bank

Health Care/Child Support

- Health Care Complaints
- Online Complaint Form for the Mental Retardation Ombudsman
- Contact State Judicial Branch Child Support Enforcement Services

Consumer

- Get on the "no-call list" for telemarketers
- Check the CT Unclaimed Property Owner's List
- Is Your Home Improvement Contractor Licensed?
- Check the license status in other professions
- Utility Complaints
- Shop On-Line at the Department of Environmental Protection Store
- Saving/Investing Information, Including On-Line "Ball Park Estimator"
- Is money waiting for you? Search Revenue Services Database of Uncashed Tax Refund Checks

Business

- Starting a business? Register for Free Assistance from Smart Start
- Biz Quiz – On-Line Checklist for Business Registration
- Enroll for e-services from the Judicial Branch
- Business Registration and On-Line Tax Filing
- Register to be notified for State Purchasing Opportunities

Outdoors and Recreation

- Make state campground reservations on-line
- Report a Black Bear Sighting
- Oder a Copy of the Connecticut Vacation Guide

Appendix G

Judicial Branch E-Government Initiatives

1. *Appellate System case look-up section* – public web inquiry for current information on cases on appeal similar to what is available for civil and family trial court matters

2. *Attorney disciplinary records* – part of judicial website to include attorney's past disciplinary history

3. *Court forms* – new interactive forms to assist individuals with completing court forms

4. *Information about Court Support Services Division* – information on programs

5. *Information in different languages* – translating additional sections in Spanish

6. *Self-help in the areas of juvenile, family and probation* – frequently asked questions about juvenile and family services

7. *Streaming videos* – videos explaining various court processes

8. *E-filing* – enhancing and expanding existing applications

9. *Foreclosure notices* – allowing advertising foreclosures on website to save homeowners the cost of advertising

10. *Jury postponements* – allow jurors to postpone jury service through the website

11. *Appellate System* – make Supreme Court briefs available on-line

12. *Navigations* – efforts to allow users to skip repetitive links

13. *Plain language* – change text in self-help sections for plain language and readability compliance

14. *Site design and navigation* – seek methods to feature self-help areas more clearly, make forms easily accessible and offer more guidance to those not familiar with the website or court business in general

Appendix H

CJIS Statutory System Requirements

According to state law[34], the system must include a centralized tracking and information database, electronic document repository, and analytical tools. They must be developed with state-of-the-art technology.

Tracking and Information Database. The central, integrated tracking and information database must provide:

- complete biographical information and vital statistics for all living offenders and former offenders; and

- tracking information for all offenders in the criminal justice system, from investigation through incarceration and release, and seamless integration with electronic monitoring systems, global positioning systems, and offender registries.

Electronic Records Repository. The central, integrated electronic repository of criminal justice records and documents must provide access to:

- state and local police reports, presentence investigations and reports, psychological and medical reports, criminal records, incarceration and parole records, and court records and transcripts, whether the records and documents normally exist in electronic or hard copy form; and

- scanning and processing facilities to ensure that records and documents are integrated into the system and updated immediately.

Centralized Analytical Tools. The centralized, analytical tools must be bundled together in a custom-designed enterprise system that includes:

- tools that empower and enhance criminal case assessment, sentencing, and plea bargain analysis and pardon, parole, probation and release decisions;

- tools that empower and enhance forecasting concerning recidivism and future offenses for each individual offender; and

- collaborative functionality that enables seamless cross-department communication, information exchange, central note-taking, and comment capabilities for each offender.

[34] C.G.S. Sec. 54-142s.

State-of-the-Art Technology. State law directs that the system be developed with state-of-the-art relational database technology and other appropriate software applications. The system must be:

- completely Internet-accessible by all authorized criminal justice officials;
- fully integrated with information systems and database applications used by state and local police, law enforcement agencies, and other agencies and organizations the governing board deems necessary and appropriate;
- indexed and cross-referenced by offender name, residence, community, criminal offense, and any other data points necessary for the effective administration of the state's criminal justice system;
- fully text searchable for all records;
- secure and protected by high-level security and controls;
- accessible to the public, subject to appropriate privacy protections and controls; and
- monitored and administered by the CJIS Governing Board, with the assistance of DOIT.

Appendix I

State Websites

The list of state entities in Table I-1 does not include the state's main web portal, CT.gov, as it is not associated with a particular branch or entity. However, as noted in Section IV, CT.gov will be examined as part of the next phase of this study.

Table I-1. State Entities and Web Addresses

Name	*Web Address*
African-American Affairs Commission	http://www.cga.ct.gov/aaac/
Asian Pacific American Commission	http://www.cga.ct.gov/asianamerican/
Auditors of Public Accounts	http://cga.ct.gov/apa/
Blue Ribbon Commission on Housing and Economic Development	http://www.ct.gov/brched
Board for State Academic Awards	http://www.charteroak.edu/
Board of Education and Services for the Blind	http://www.ct.gov/besb
Board of Firearms Permit Examiners	http://www.ct.gov/bfpe
Capital City Economic Development Authority	http://www.cceda.state.ct.us/
Capitol Child Development Center	http://www.cga.ct.gov/ccdc/
Charter Oak College	http://www.cosc.edu/
Children's Trust Fund	http://www.ct.gov/ctf
Commission for Educational Technology	http://www.ct.gov/ctedtech
Commission on Child Protection	http://www.ct.gov/ccpa
Commission on Children	http://www.cga.ct.gov/coc/
Commission on Fire Prevention and Control	http://www.ct.gov/cfpc
Commission on Human Rights and Opportunities	http://www.ct.gov/chro/
Commission on Latino & Puerto Rican Affairs	http://www.cga.ct.gov/lprac/
Connecticut Agricultural Experiment Station	http://www.ct.gov/caes
Connecticut Board of Pardons and Paroles	http://www.ct.gov/doc/cwp/view.asp?a=1520&q=284830&docNav=|40574|
Connecticut Commission on Aging	http://www.cga.ct.gov/coa/
Connecticut Commission on Culture and Tourism	http://www.cultureandtourism.org/
Connecticut Community-Technical Colleges	http://www.commnet.edu/
Connecticut Council on Developmental Disabilities	http://www.ct.gov/ctcdd
Connecticut Development Authority	http://www.ctcda.com/

Table I-1. State Entities and Web Addresses	
Name	***Web Address***
Connecticut Distance Learning Consortium	http://www.ctdlc.org/
Connecticut Environmental Public Health Tracking	http://www.ct.gov/ctepht
Connecticut General Assembly	http://www.cga.ct.gov/
Connecticut Health and Educational Facilities Authority	http://www.chefa.com/
Connecticut Housing Finance Authority	http://www.chfa.org/
Connecticut Innovations, Inc.	http://www.ctinnovations.com/
Connecticut Law Revision Commission	http://www.cga.ct.gov/lrc/
Connecticut Lottery Corporation	http://www.ctlottery.org/
Connecticut National Guard	http://www.ct.ngb.army.mil/
Connecticut State Library	http://www.cslib.org/
Connecticut State University System	http://www.ctstateu.edu/csu_home.html
Council on Environmental Quality	http://www.ct.gov/ceq
Criminal Justice Commission	http://www.ct.gov/cjc
CT State Firefighters Association	http://www.ct.gov/cfpc/cwp/view.asp?a=827&Q=245520&cfpcPNavCtr=|30661|#30674
Department of Administrative Services	http://www.das.state.ct.us/
Department of Agriculture	http://www.ct.gov/doag/
Department of Banking	http://www.ct.gov/dob
Department of Children and Families	http://www.ct.gov/dcf
Department of Consumer Protection	http://www.ct.gov/dcp
Department of Correction	http://www.ct.gov/doc
Department of Developmental Services	http://www.ct.gov/dds
Department of Economic and Community Development	http://www.ct.gov/ecd/
Department of Emergency Management and Homeland Security	http://www.ct.gov/demhs
Department of Environmental Protection	http://www.ct.gov/dep
Department of Higher Education	http://www.ctdhe.org/
Department of Information Technology	http://www.ct.gov/doit
Department of Insurance	http://www.ct.gov/cid
Department of Labor	http://www.ctdol.state.ct.us/
Department of Mental Health and Addiction Services	http://www.ct.gov/dmhas
Department of Motor Vehicles	http://www.ct.gov/dmv
Department of Public Health	http://www.ct.gov/dph
Department of Public Safety	http://www.ct.gov/dps

Table I-1. State Entities and Web Addresses	
Name	***Web Address***
Department of Public Utility Control	http://www.ct.gov/dpuc/
Department of Public Works	http://www.ct.gov/dpw/
Department of Revenue Services	http://www.ct.gov/drs
Department of Social Services	http://www.ct.gov/dss
Department of Transportation	http://www.ct.gov/dot
Department of Veterans Affairs	http://www.ct.gov/ctva
Division of Criminal Justice	http://www.ct.gov/csao
Division of Public Defender Services	http://www.ocpd.state.ct.us/
Division of Special Revenue	http://www.ct.gov/dosr
Employees' Review Board	-
Finance Advisory Committee	http://www.ct.gov/opm/cwp/view.asp?a=2965&q=382954
Freedom of Information Commission	http://www.state.ct.us/foi/
Gaming Policy Board	http://www.ct.gov/dosr/cwp/view.asp?a=3&q=290510
Governor's Office	http://www.ct.gov/governor/
Judicial Branch	http://www.jud.ct.gov/
Judicial Review Council	http://www.ct.gov/jrc
Judicial Selection Commission	http://www.ct.gov/jsc/
Legislative Commissioners' Office	http://www.cga.ct.gov/lco/
Legislative Program Review and Investigations Committee	http://www.cga.ct.gov/pri/
Lieutenant Governor's Office	http://www.ct.gov/otlg
Military Department	http://www.ct.gov/mil
Office of Consumer Counsel	http://www.ct.gov/occ
Office of Fiscal Analysis	http://www.cga.ct.gov/ofa
Office of Health Care Access	http://www.ct.gov/ohca
Office of Legislative Management	http://www.cga.ct.gov/olm/
Office of Legislative Research	http://www.cga.ct.gov/olr/
Office of Military Affairs	http://www.ct.gov/oma
Office of Ombudsman for Property Rights	http://www.ct.gov/pro
Office of Policy and Management	http://www.ct.gov/opm
Office of Protection and Advocacy for Persons with Disabilities	http://www.state.ct.us/opapd/
Office of Secretary of the State	http://www.sots.ct.gov/
Office of State Ethics	http://www.ct.gov/ethics

Table I-1. State Entities and Web Addresses	
Name	***Web Address***
Office of the Chief Medical Examiner	http://www.ct.gov/ocme
Office of the Chief State's Attorney	http://www.ct.gov/csao/
Office of the Child Advocate	http://www.ct.gov/oca
Office of the Claims Commissioner	http://www.claims.state.ct.us/
Office of the Healthcare Advocate	http://www.ct.gov/oha
Office of the State Attorney General	http://www.ct.gov/ag
Office of the State Comptroller	http://www.osc.state.ct.us/
Office of the State Treasurer	http://www.state.ct.us/ott/
Office of the Victim Advocate	http://www.ct.gov/ova
Office of the Business Advocate	http://www.ct.gov/oba
Office of Workforce Competitiveness	http://www.ctdol.state.ct.us/rwdb/workforce.htm
Permanent Commission on the Status of Women	http://www.cga.ct.gov/pcsw/
Police Officer Standards and Training Council	http://www.ct.gov/post
Properties Review Board	http://www.ct.gov/sprb
Psychiatric Security Review Board	http://www.ct.gov/psrb
Racial and Ethnic Disparity Commission in the Criminal Justice System	http://www.ct.gov/redcjs
Sailors' and Marines' Fund Soldiers'	http://www.ct.gov/ssmf
Siting Council	http://www.ct.gov/csc/
State Board of Accountancy	http://ct.gov/sboa
State Commission on the Deaf and Hearing Impaired	http://www.ct.gov/cdhi
State Contracting Standards Board	http://www.ct.gov/scsb
State Department of Education	http://www.ct.gov/sde
State Elections Enforcement Commission	http://www.ct.gov/seec
State Insurance and Risk Management Board	http://www.das.state.ct.us/SIRMB/
State of Connecticut Water Status	http://www.ct.gov/waterstatus
Teachers' Retirement Board	http://www.ct.gov/trb
The Connecticut Higher Education Supplemental Loan Authority	http://www.chesla.org/
The Connecticut Resources Recovery Authority	http://www.crra.org/
University of Connecticut	http://www.uconn.edu/
University of Connecticut Health Center	http://www.uchc.edu/
Workers' Compensation Commission	http://wcc.state.ct.us/