



Center for Technology in Government

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# **Assessing Mobile Technologies in Child Protective Services**

**Suffolk County  
Department of Social Services  
District Profile**

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# Introduction

## Demonstration Project

The New York State (NYS) Mobile Technology Demonstration Project is an initiative to assess the use of mobile technologies in child protective services work in New York State. The project, a collaborative effort among the NYS Office of Children and Family Services (OCFS), 23 NYS County Departments of Social Services (DSS), and the Center for Technology in Government (CTG), focused on two core questions – how is mobile technology used in the work setting and did the technology impact the work itself?

In this project, OCFS was responsible for the selection, procurement, and deployment of mobile technologies. The County DSS was also responsible for the deployment of mobile technologies, in addition to the coordination and procurement of wireless connectivity, training, and the selection of Child Protective Services (CPS) staff to participate in the demonstration. CTG was responsible for the independent assessment of the use of the technology.

The *Demonstration Project in 23 Local Social Service Districts* produced profiles for each of the participating districts as well as a summary report. It may be useful to read through the summary report before reading the local district profile as the summary report explains the variability in the CPS environment across the state as well as describes the many policies and practices developed and implemented by districts. The report is available at:

<http://www.ctg.albany.edu/publications/reports/demonstration2008>.

This profile presents findings for the Suffolk County DSS. Findings are based on data collected through online surveys, district questionnaires, and analysis of CONNECTIONS data (data collection methodology and timeframe can be found in Appendix A). The field test lasted 71 days from 10/30/07 to 1/9/08.

## District Deployment

Suffolk County DSS has approximately 90 CPS staff responsible for child protective services. Suffolk County, is a mix of urban and rural areas occupying the western two-thirds of Long Island. Suffolk county has approximately 1.5 million residents and responds to between 8,000 – 9,000 State Central Registry (SCR) reports per year (the highest volume in the state, with the exception of New York City). The Suffolk County DSS participated in the demonstration project to learn if mobile technologies can improve caseworker productivity by providing more opportunities to enter progress notes while out of the office.

The Suffolk County DSS deployed 30 Dell Latitude D620 laptops to 25 caseworkers on 10/30/07 (See Appendix B for device specifications). Suffolk County DSS is devising a deployment strategy for the five remaining laptops. Twenty-five caseworkers received their own device and docking stations with keyboards and monitors were. All laptops were deployed with district-provided external broadband cards. Regardless of the network connections used, all access to the State network was through a virtual private network (VPN) that secures the transmission to and from the portable device and the network. In addition, PointSec encryption software was installed on each device before deployment.

Suffolk County DSS held a “kick-off” breakfast celebration to encourage participation in the demonstration project and give the laptops to caseworkers; at this breakfast, each person received their device. The Suffolk County Police Department provided “Computer and Network Security” training to all participants and individual training was provided as needed.

One policy was modified from the pre-pilot period to support the introduction of mobile technologies during the pilot period. During the pilot period, caseworkers assigned to the demonstration project were instructed to spend four full days in the field (rather than the prescribed three days). One policy was created as a result of the introducing laptops into the work environment. During the pilot period, participants were required to submit “Field Itinerary and Usage Logs” to their supervisors.

## Characteristics of Respondents

A total of 25 CPS caseworkers participated in this study: 23 took the baseline survey (response rate 92%); 21 took the post-pilot survey (response rate 84%); and 21 took both the baseline and post-pilot surveys(response rate 84%).

The length of experience in CPS work, amount of overtime accrued weekly, the number of court days and estimated court waiting time are all important to understanding the overall context of the work environment. The Suffolk County DSS respondents<sup>1</sup> were moderately experienced in CPS field work, with an average of 3.9 years of experience; 55% reported CPS experience of two years or less. Respondents worked about the same number of overtime hours in the pre-pilot and pilot periods. The percentage of respondents reporting overtime of three hours or less in a week did not change (staying at 91% for both in the pre- and pilot periods). However, the average overtime hours slightly increased from one hour in the pre-pilot period to 1.4 hours during the pilot period. Most of the respondents reported they average just below two hours or less of overtime a week. Eighty-six percent of the respondents reported a typical court waiting time of four hours or less and 87% reported spending three or fewer days in court per month.

## Mobility

The laptops provided caseworkers with opportunities to work outside the office environment in new ways. This section reports on how the participants used those opportunities in terms of the type of work done, locations, and issues that influence use. Survey questions inquired about use at home, in court houses, and in the field. Issue questions focused on using the laptop outside of the office, such as: (1) difficulty establishing connection, (2) loss of connection, (3) the speed of connection, (4) level of privacy (or personal work space and ability to ensure confidentiality of information), (5)

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<sup>1</sup> Participant(s) refers to those CPS caseworkers who tested the technology. Respondent(s) refers to the total number of participants who answered specific questions in either the baseline or post-pilot surveys or participated in the district teleconferences.

personal safety, and (6) amount of time available to use the laptop. How information was accessed and entered by participants was also examined.

## Use

Suffolk County DSS respondents reported using the laptop during normal work hours, after work hours, and when working overtime. Suffolk County DSS desktops were removed and docking stations installed. Therefore, the full range of CPS-related work was completed using the laptops. The laptop was used in case investigation and interventions, documentation and reporting, and court-related activities. Case documentation was the most frequent use, including inputting and updating notes. Other work included reading and reviewing case histories, opening new cases, closing cases, doing person searches, checking client histories, and accessing documents, forms, and email. Eighty percent of respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Similarly, 95% of respondents accessed email once a day or more, while 52% of respondents reported using their laptop at least once a day or more to access map directions. One respondent stated that the ability to review cases in the field provided “a good understanding of the case prior to making a visit. Made for more efficient visits.” Other respondents said that they used the laptops to look up phone numbers and addresses as well as editing or creating documents in Microsoft Word.

The extent to which caseworkers can access information while out of the office has a big influence on what kinds of mobile work are possible. Respondents reported returning to the office to access case information slightly less frequently during the pilot period. Thirty-three percent reported never returning to the office to access case information during the test period, compared to only 24% in the pre-pilot period. Participants were required to be in the field four full days during the pilot period. The survey data shows that respondents were in the field slightly more during the pilot period than the pre-pilot period (2.8 days in the pre- and 3.1 during the pilot period). This small shift may be accounted for in the increased number of respondents working four days in the field (38% of respondents reported working four days in the field during the pilot period, compared to only 10% in the pre-pilot period).

Respondents did comment on the district-imposed field day requirement in open-ended survey comments. Several respondents felt this was a good change and also encouraged the use of portable printers; other respondents did not like the schedule change. One respondent expressed the difficulty in setting strict rules: “Everyone’s job schedule is different...There will be weeks that I can be in the office (having access to fax machines, supervisors, and resources at my desk) for four full days. There are other weeks that I will need to be out in the field for four days.”

Several respondents commented on some of the more subtle changes in mobility and communication patterns. One caseworker stated, “I feel that using the laptop was better because it allowed us to view case history and be connected in the field with the office. I was able to check my e-mails in a timely manner and if I needed to send something to my supervisor, I could do it that day and not wait until my next office day.”

Suffolk County DSS had district-provided external broadband cards during the pilot period. Respondents reported several obstacles to mobile use including the inability to establish a connection, slow speed and unreliable connections in all locations, as well as loss of user profiles

when the laptop was connected to the docking station in the office. Several respondents described a range of issues while working on the laptop, from losing files, not having access to email or other important applications, to applications freezing. One respondent described their experience: “I found logging-in took longer and it was slower. Also the screen was difficult to read, particularly if using the laptop on battery. If I tried to use it in my car, the screen was unreadable (due to sun glare). It did improve when I plugged the laptop into my car. Also, there were issues with slowness, sometimes it froze for long periods.” Other respondents simply stated: “Depending on the area, it is sometimes difficult to get a good connection, but most times, the connection is good.” Security concerns were mentioned as well. One respondent said, “Leaving the computer in my car while in certain neighborhoods places myself and the computer at risk.”

Participants were also asked about ease of logging-on to the device. Overall, 28% said it was “Easy” to “Extremely easy,” 48% rated it as “Neither difficult nor Easy,” and another 24% of respondents rated the log-on process as “Difficult” to “Extremely Difficult.”

## Location

Table 1 below details the percentage of respondents using the laptop at different locations, as well as the average length of time the laptop was used. Aside from in the office, respondents reported using the laptop most frequently in the field (81%), for an average of nine hours per week, and 57% of respondents used it at home for an average of 1.5 hours per week. Thirty-three percent used it at court for less than one hour per week.

**Table 1 - Location and Hours of Laptop Use per Week**

	Use of Laptop (n)	Average length of use per week
Field	81% (17)	9.33 Hours
Court	33% (7)	0.47 Hours
Home	57% (12)	1.55 Hours
Do not use at all	0% (0)	--

*\* Based on survey respondents who took the post survey n=21. Total number of testers n=25.*

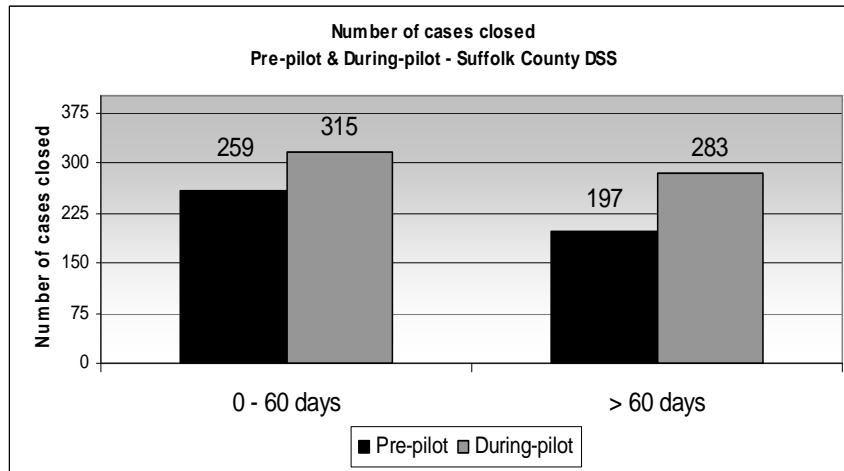
The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in most districts. Respondents spend on average of two days a month at court and wait on average 3.2 hours during a court visit. However, respondents were using the laptop in the court house on average less than one-half hour per week. Caseworkers may not be using the laptop in the court house because of other competing interests that may limit the amount and type of work they can do. Several respondents reported that at times the “court workers” occupied all of the potential work places in the court buildings; respondents also had difficulty establishing a connection or experienced an unreliable connection.

## Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Suffolk County DSS: (1) Are workers more productive with respect to case closings and progress note reporting? and (2) Does timeliness of reporting change?

Case closing is one way to assess any changes in efficiency and productivity. Figure 1 below shows the rate of timely closing of cases (in 60 days or less) increased from the pre-test period (259) to the test period (315). The number of cases closed in over 60 days increased substantially as well, from 197 in the pre-pilot period to 283 during the pilot period. This is a substantial increase in productivity during the test period; the total number of cases closed increased during the test period, from 456 in the pre-test to 598 during the test—a 31% increase. It is important to note that in this county the total number of cases available to be worked on<sup>2</sup> decreased slightly from 947 in the pre-pilot period to 922 during the pilot period – a 2.6% decrease.

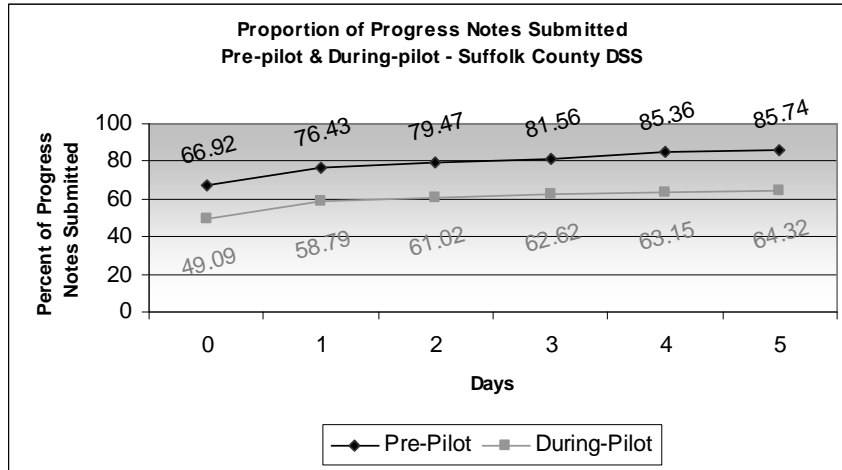
**Figure 1 - Number of Suffolk County DSS Cases Closed Pre-Pilot and During Pilot**



Another indicator of timeliness is elapsed time – or the number of days between an event and the posting of documentation regarding that event in the central database system. Figure 2 below shows trends in the elapsed time between progress note entry and the related event. During the pre-pilot period, the majority of all progress notes were entered by the day of the event, but only 49% during the pilot period. By the fifth day following the event, 85% of the notes were entered for the pre-pilot period, but only 64% for the pilot period. Contrary to expectations, the proportion of progress notes entered in each time period during the test is consistently below that of the pre-pilot period. By this measure, timeliness decreased slightly during the test, but is high overall.

<sup>2</sup> The number of cases available to be worked on is the total of investigation stages that were open at any time during each of the pre-or pilot periods.

**Figure 2 - Proportion of Progress Notes Entered by Days Following Event**



There may be multiple reasons for this decrease in the timeliness of note entry. The overall increase in case closings during the pilot period may have changed the usual pattern of progress note entry. There was clearly an effort put into closing cases during the pilot period that could have had this effect.

The use of new technology also requires a period of adjustment. In Suffolk County DSS, a total of 25 laptops with external wireless broadband cards and docking stations were deployed. This kind of equipment change can require extra effort in the short-run and require a period of adjustment. In this case several survey respondents reported slow sign-on processes, difficulties in maintaining a connection away from the office, or slow response while connected. One respondent noted:

It was extremely slow. It took up to a half-hour to forty-five minutes to get it to completely log-on some mornings. It would freeze quite often, thus making it take much longer to complete anything I was doing. The laptop takes a long time to start up each time it is used, whether at the office or in the field.

Another reported, “When connected with the wireless card, if the connection wasn’t at maximum reception, it performed slowly.” It is not clear, however, how common these problems were.

Some additional adjustments to these deployment issues and work processes may be necessary to take full advantage of the laptops for use in the field. Adjusting to these issues can be part of the learning process in adapting to the new technologies.

Participants were asked to what extent using a laptop made a difference in CPS work compared to not having the laptop. Five different areas were examined: (1) timeliness of documentation, (2) ability to do work in court, (3) ability to access case information, (4) communication with supervisors, and (5) service to clients. Respondents were asked to rate the difference on a five-point scale where 1 = “Much worse,” 3 = “About the same,” and 5 = “Much better.”

The Suffolk County DSS respondents reported some positive impacts on their work resulting from laptop use, shown in Table 2 below. For documentation, 60% of the respondents reported improvements in timeliness of documentation and improved ability to access case information.



Reported ability to work in court improved for 39% of respondents, and 45% reported improvements in ability to communicate with supervisors; another 40% reported improvements in service to clients. There were also reported negative impacts, including 20% of respondents reporting negative impacts in timeliness of documentation, 15% reporting negative impacts in ability to access information and service to clients. Plus one respondent reported diminished ability to communicate with supervisors. None of the respondents reported negative impacts on work in court.

**Table 2 - Perceived Change Timeliness and Work Impacts – Suffolk County DSS**

	<b>Much worse (n)</b>	<b>Somewhat worse (n)</b>	<b>About the same (n)</b>	<b>Somewhat better (n)</b>	<b>Much better (n)</b>
Timeliness of documentation	15%(3)	5%(1)	20%(4)	50%(10)	10%(2)
Ability to do work in court	0%(0)	0%(0)	61%(11)	33%(6)	6%(1)
Ability to access case information	10%(2)	5%(1)	25%(5)	30%(6)	30%(6)
Communication with supervisors	0%(0)	5%(1)	50%(10)	30%(6)	15%(3)
Service to clients	5%(1)	10%(2)	50%(10)	30%(6)	5%(1)

The reported negative impacts on timeliness and other work activities is somewhat consistent with the timeliness of documentation results obtained from the central database. These negative reports were not overshadowed by the increased rate of case closing.

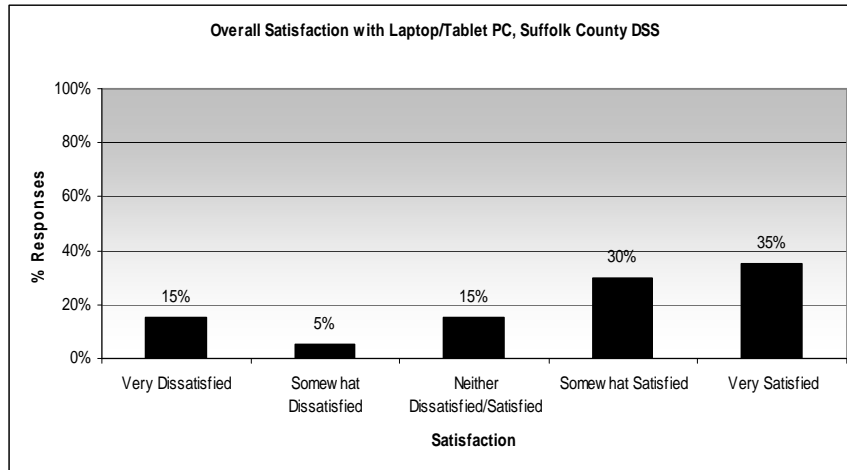
Several respondents did recognize the overall potential value of the laptops. Positive comments included:

I think it makes a lot of sense, especially when some of the areas we work are far. Having access to information in the field has allowed me to take advantage of the time when a client does not show up for an appointment or when an unannounced visit is negative.

## Satisfaction

The overall level of satisfaction with the laptops is high. Figure 3 below shows 65% of respondents expressed being “Somewhat satisfied” or “Very satisfied,” compared to 20% being “Somewhat dissatisfied” or “Very dissatisfied.” Another 15% were “Neither dissatisfied/Satisfied.”

**Figure 3 - Overall User Satisfaction with the Laptops**



*\* Based on survey respondents who took the post survey n =21. Total number of testers n = 25.*

Despite these overall high levels of satisfaction, respondents reported technical difficulties, such as loss of connection, trouble establishing a connection, and lack of connection in court as occasionally problematic. Some areas of the county, such as the North Shore, were described as having poor wireless coverage. It could also be the case that having a laptop produced higher expectations for use at court and in the field, expectations that were not wholly met. One respondent reported:

“Sometimes it worked fine. Often, it was extremely slow. I often had to restart the computer because H:\drive\email\connections were not available. I often lost my connection while attempting to enter notes.”

Laptop use was generally seen as contributing to lower job-related stress; 67% of respondents said that it did reduce stress, while one-third said it did not. Those who reported a reduction in stress attributed this to their ability to catch up on their work, just knowing the laptop was available, increased access to information, and having the flexibility of working on documentation outside of the office. One respondent described their reasons: “[The] ability to catch up with work while I have ‘down time’ in the field, ability to work from home if needed, ability to work from home or in field in inclement NY weather/snow/ice and not worrying about driving to the office.” Connectivity-related problems were the main reason caseworkers felt as though the use of laptops did not lower job-related stress. Several caseworkers expressed this sentiment: “Having a laptop added greatly to my stress level. It was so slow, I have difficulty typing on the keyboard and not touching the small blue mouse, it took so long to log-on, it freezes continually.”

Overall, 65% of respondents would recommend the use of laptops to colleagues. The reasons mentioned for this included that it improves ability to serve clients and increases caseworkers’ ability to use time more efficiently.

# APPENDIX A – Methodology, Data Collection, and Timeline

There were three streams of data collection throughout the project. Two online surveys, as well as data from the central OCFS CONNECTIONS database, provided quantitative data to assess various productivity, satisfaction, and timeliness measures. In addition, the different uses and locations of use were documented. This data was supplemented by qualitative data gathered from ten district teleconferences. Each method is described in greater detail below.

## Online Surveys

Two separate surveys, a baseline and post-pilot survey, were administered. The surveys collected data about respondents' perceptions and attitudes using the laptop or tablet PC within several areas of CPS work – work practice, work time, demographic information, mobility/location, skill and stress levels, technology acceptance, training, and use of technology. The surveys were developed over a period of several months and a pre-survey was tested. The surveys were modified based on the pilot survey results and the project team's knowledge and understanding of CPS work. The online surveys were developed and administered through commercial software (Survey Monkey).

The names, email addresses, and titles of participating CPS caseworkers were collected from each of the participating County DSS. Personalized survey invitations were emailed to participants. The baseline survey was administered prior the deployment of laptops or tablet PCs to participating caseworkers. The baseline survey was open for three weeks starting on 9/21/07 and ending on 10/5/07.

The post-pilot survey was administered three months following the deployment of laptops. The survey was open for one week; starting on 1/3/08 and ending on 1/10/08. Data was collected from three new thematic categories: the impact of laptops on caseworkers' daily activities, mobility-related issues, and technical difficulties experienced during the pilot. Data quality checks were performed and the data was recoded as needed.

## Teleconferences

During the week of December 10 – 14, 2007, CTG held separate teleconferences with project participants in 10 County DSS in NYS to learn more about how they were using the laptops and tablets deployed for CPS work. Participating County DSS were chosen by CTG and the NYS OCFS liaisons. Criteria for choosing the districts included (1) how long they had the technologies in use, and (2) districts that provided a full range of geographical representation across the state, in terms of rural and urban settings and overall size.

Each district participated in one teleconference with CTG interviewers. All participants were given sample questions before the teleconferences that dealt with deployment, connectivity, use and location, changes in work, issues/concerns, policy implications, and overall benefits of laptop use. The following table shows the districts interviewed and the number of participants in each call.

**Table 3 – Teleconference time and participant information**

County DSS	Date of Teleconference Interview	# of Caseworkers	#of Supervisors	Other(s) Participating
Albany	12/10/07	6	0	LAN Administrator
Chemung	12/11/07	6	1	-
Clinton	12/10/07	7	1	-
Nassau	12/13/07	13	0	Assistant Director
Niagara	12/10/07	2	2	Staff Development Coordinator; IT Representative
Onondaga	12/11/07	8	0	IT Representative
Orleans	12/11/07	3	0	LAN Administrator
Putnam	12/13/07	3	1	-
Ulster	12/15/07	4	3	-
Washington	12/12/07	4	0	-

## CONNECTIONS Data

The overall objective for using CONNECTIONS data was to measure the effect of the use of mobile technologies on CPS work practices by using data from the central database. The CONNECTIONS dataset (i.e., the central database) contained information on case records and caseworkers' progress notes. The information contained within each of these records included: Stage ID, Person ID, time-related information about the *investigation stage* (Intake Start Date, Investigation Stage Start Date, Investigation Stage End Date); *progress notes information* (Progress Notes ID, Progress Notes Event Date, Progress Notes Time, Progress Notes Entry Date, Progress Notes Types, Progress Notes Purposes); *safety assessments* (Safety Submit Date, Safety Approval Date) logged by caseworkers in each County DSS. The CONNECTIONS data was pulled by the date a progress note was entered by participants during two timeframes, the pre- and during-pilot phases (08/19/07 – 10/29/07 and 10/30/07 – 01/09/08 respectively). A total of 8,025 progress note entries and 1,378 unique investigation stages made up the dataset from 25 caseworkers.

# Appendix B – Device Specifications

All devices were selected, procured, imaged, and delivered to the County DSS by OCFS.

## Laptop

Latitude D620, Intel Core 2 Duo T5500, 1.66GHz, 667Mhz, 2ML2 Cache, Dual Core, 14.1 inch Wide Screen WXGA LCD for Latitude D620, 1.0GB, DDR2-667 SDRAM, 1 DIMM for Dell Latitude Notebooks, Internal English Keyboard for Latitude Notebooks, Intel Integrated Graphics Media Accelerator 950 Latitude D620, 60GB Hard Drive 9.5MM, 5400RPMfor Dell Latitude DX20, Standard Touchpad for LatitudeD620, No Floppy Drive for Latitude D-Family Notebooks, Windows XP Professional, SP2 with media, for Latitude English, Factory Installed, Dell Black USB 2 Button Optical Mouse with Scroll for Latitude.

## Tablet

HP Compaq tc4400 Tablet PC 26 EN376AV Product - HP Compaq tc4400 Tablet PC, Operating system - Genuine Windows® Vista Business, VISTA label - Microsoft® Vista Ready Label, Form Ultramobile form factor, Intel® Core™2 Duo Processor T5600, (1.83GHz, 2MB cache, 667MHz FSB), Intel® Centrino® Duo Label, 1024MB (667MHz, DDRII memory, 1 DIMM), 80GB Hard drive (5400 rpm), 12.1-inch TFT XGA WVA Display with Fingerprint Reader, 56K Modem, 10/100/1000 NIC, 6-cell high capacity Lithium Ion internal battery, Digital Eraser Pen with tether and clip, Keyboard with Enhanced Dual Pointing, Intel® Pro Wireless 3945ABG, security - Embedded TPM 1.2 security chip, and three year worldwide limited warranty.

# Appendix C – The Center for Technology in Government (CTG)

The Center for Technology in Government (CTG) is an applied research center committed to improving government and public services through policy, management, and technology innovation. Through its program of partnership, research, and innovation, the Center provides government organizations and individuals with an array of tools and resources designed to support the development of a digital government. The goal of every CTG partnership project is to build knowledge that improves the way government works. CTG projects have helped state, local, and federal agencies increase productivity and coordination, reduce costs, enhance quality, and deliver better services to citizens and businesses. The results generated by each project add to a growing knowledge base designed to support the work of both government professionals and academic researchers. CTG receives funding through the University at Albany's state allocation, as well through grants and awards from foundations and federal agencies such as the National Science Foundation.

Since its creation in 1993, the Center has:

- conducted almost 50 partnership projects, which produced outcomes that have helped state, local, and federal government agencies improve services and operations;
- collaborated with nearly 100 government agencies, 42 private companies, and 14 academic institutions and research organizations;
- issued over 100 guides, reports, and online resources designed to support the work of government professionals, and over 300 scholarly articles that have contributed to the field of research on IT innovation in government organizations;
- developed and evaluated 12 prototype systems that answered critical policy, management, organizational, and technology questions;
- obtained 37 research grants and fee-for-service contracts for over \$10 million;
- been honored with 16 state and national awards such as the Ford Foundation's Innovations in American Government award;
- given over 250 trainings, workshops, and conference presentations provided data; and
- support to more than 20 doctoral dissertations and masters projects.

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