



Center for Technology in Government

---

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

**Putnam County  
Department of Social Services and Mental Health  
District Profile**

**Meghan E. Cook  
Anthony M. Cresswell  
Natalie Helbig  
Fawzi H. Mulki  
Bahadir K. Akram  
Jana L. Hrdinová**

Center for Technology in Government  
University at Albany, SUNY  
187 Wolf Road, Suite 301  
Albany, NY 12205  
Phone: (518) 442-3892  
Fax: (518) 442-3886  
<http://www.ctg.albany.edu>

## Table of Contents

|                                                                        |           |
|------------------------------------------------------------------------|-----------|
| <b>INTRODUCTION .....</b>                                              | <b>3</b>  |
| DEMONSTRATION PROJECT .....                                            | 3         |
| DISTRICT DEPLOYMENT .....                                              | 3         |
| <b>CHARACTERISTICS OF RESPONDENTS.....</b>                             | <b>4</b>  |
| <b>MOBILITY .....</b>                                                  | <b>4</b>  |
| USE .....                                                              | 5         |
| LOCATION .....                                                         | 6         |
| <b>PRODUCTIVITY AND EFFICIENCY.....</b>                                | <b>6</b>  |
| <b>SATISFACTION .....</b>                                              | <b>9</b>  |
| <b>APPENDIX A – METHODOLOGY, DATA COLLECTION, AND TIMELINE.....</b>    | <b>10</b> |
| ONLINE SURVEYS .....                                                   | 10        |
| TELECONFERENCES .....                                                  | 10        |
| CONNECTIONS DATA.....                                                  | 11        |
| <b>APPENDIX B – DEVICE SPECIFICATIONS.....</b>                         | <b>12</b> |
| LAPTOP.....                                                            | 12        |
| TABLET .....                                                           | 12        |
| <b>APPENDIX C – THE CENTER FOR TECHNOLOGY IN GOVERNMENT (CTG).....</b> | <b>13</b> |

# 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 Putnam County DSS. Findings are based on data collected through online surveys, teleconferences, district questionnaires, and analysis of CONNECTIONS data (data collection methodology and timeframe can be found in Appendix A). The field test lasted 79 days from 10/22/07 – 1/9/08.

## District Deployment

Putnam County DSS has nine CPS staff responsible for child protective services. Putnam County is a geographically small rural area, just above Westchester County, with about 100,000 residents. The Putnam County DSS participated in the demonstration project to learn if mobile technologies will allow caseworkers more time in the field to adequately address the needs and ensure the safety of families, create more opportunities to complete documentation, and increase caseworker job satisfaction.

The Putnam County DSS deployed nine Dell Latitude D620 laptops to eight caseworkers and one supervisor on 10/22/07 (see Appendix B for device specifications). Nine docking stations with keyboards and monitors were installed. Each caseworker and supervisor received their own device. Nine district-provided broadband cards were deployed to participants approximately one month after receiving the laptops (cards received on or about 11/15/07). 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.

All staff volunteered to participate in the demonstration project. Each person was provided information about the demonstration project in addition to receiving individual training on how to connect to the laptop and security precautions. Each participant signed an “acknowledgement receipt” stating that they received the laptop.

One policy was modified from the pre-pilot period to support the introduction of mobile technologies during the pilot period. In the pilot period, caseworkers were allowed to use “flex time” for work they completed using the laptop while at home after regular work hours.

## Characteristics of Respondents

A total of eight CPS caseworkers participated in this study: six took the baseline survey (response rate 75%); four took the post-pilot survey (response rate 50%); and three took both the baseline and post-pilot surveys (response rate 38%).

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 Putnam County DSS respondents<sup>1</sup> were moderately experienced in CPS field work, with an average of 6.6 years of experience; 50% reported CPS experience of three years or less. Respondents worked about the same number of overtime hours in the pre-pilot and pilot period. The percentage of respondents reporting overtime of five hours or less in a week did not change (staying around 67% for both in the pre- and during-pilot periods). However, the average overtime hours increased from 4.3 hours in the pre-pilot period to 6.7 hours in the pilot period. It is important to note that the range of overtime hours changed from two to six hours in a week during the pre-pilot period to five to ten hours in a week during the pilot period. All of the respondents reported a typical court waiting time of three hours or less and 83% reported on average spending four or fewer days in court per month.

## Mobility

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

---

<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.

## Use

Putnam DSS respondents reported using the laptop during normal work hours, after work hours, when on-call, and while working overtime. Putnam County DSS desktops were removed and docking stations were 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, completing safety assessments, opening new cases, checking client histories, court reports, email, and word processing. Overall, three of the respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Similarly, three of the respondents accessed email once a day or more, while three respondents reported using their laptop at least once a day or more to access map directions.

The extent to which caseworkers could access information while out of the office has a big influence on what kinds of mobile work are possible. Laptop use did not change (at this point in time) the frequency of respondents returning to the office during the work day to access information. Two of the respondents reported returning to the office five or more times a week to access case information in the pre- and during-pilot periods (and one respondent reported returning once a week or less in the pre- and during-pilot periods). The respondents were in the field approximately the same number of days per week (average about 3.25 days) during the pre- and pilot periods.

Several respondents commented on some of the often overlooked changes in mobility and communication patterns. For example, one respondent described the benefit of mobility, “I can take my PC with me and enter information as needed or at my leisure, rather than having to be forced to come into the office to enter information.” Another described how if she did not know what to do with a case, she now called her supervisor at home and the supervisor could also access CONNECTIONS and advise her.

Putnam County DSS had district-provided external broadband cards during the pilot period. At the mid-pilot period teleconference, testers reported no problems with connectivity; however this was most likely due to the fact that they had not used the laptop at the court house or very much in the field during the early stages of the test period. Several post-pilot survey comments indicated that respondents had trouble logging-on to CONNECTIONS from home or the field, and identified issues such as low signal strength and being kicked out of CONNECTIONS. At the court house, a few expressed connectivity problems, but most did not encounter problems. A few noted some privacy issues at court. One respondent described the court house situation stating, “ we have a little private room at the court house where they can work, but that it is normally used by clerks, attorneys, and the judges, so it is pretty loud.” Most said they can envision using the laptop at court but they felt that they just did not have enough time yet to experiment with it.

Participants were also asked about ease of logging-on to the device. Overall, two respondents said it was “Easy,” one respondent rated it as “Neither difficult nor Easy,” and one respondent rated the log-on process as “Difficult.”

## Location

Table 1 below details the percentage of survey respondents using the laptop at different locations, as well as the average length of time the laptop was used. Aside from in the office, all respondents reported using the laptop at home for an average of just under ten hours per week, in the field for about six hours per week, and at the court house for three hours week.

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

|                   | <b>Use of Laptop (n)</b> | <b>Average length of use per week</b> |
|-------------------|--------------------------|---------------------------------------|
| Field             | 100% (4)                 | 6.25 Hours                            |
| Court             | 100% (4)                 | 3.00 Hours                            |
| Home              | 100% (4)                 | 9.75 Hours                            |
| Do not use at all | 0% (0)                   | --                                    |

*\* Based on survey respondents who took the post survey n=4. Total number of testers n=8.*

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in most districts. Respondents in the Putnam County DSS spend on average three days a month at court and wait on average 2.6 hours during a court visit. Respondents indicated using the laptop in court for about the same amount of time as their average wait time. This is a good indication that respondents are utilizing their time better in court.

Caseworkers can work from home for overtime reasons and receive flex time. Respondents stated that working from home was now more efficient due to less interruptions, increased flexibility and an increase in the time respondents have to do different tasks. One respondent expressed “I know that even though I do not want to have to do work at home, I can bring my laptop home and complete some tasks, and even if I can't get a connection, I can still use the laptop for word processing.” Another stated, “The laptop has allowed workers to type directly into CONNECTIONS from home, which indicates there is insufficient time during the work day to complete work.”

Putnam County DSS is currently reviewing existing policies to determine how to best take advantage of the mobile technologies. For example, although there is technically a “no work from home” policy during business hours, management is investigating the possibility of caseworkers working from home maybe once a week.

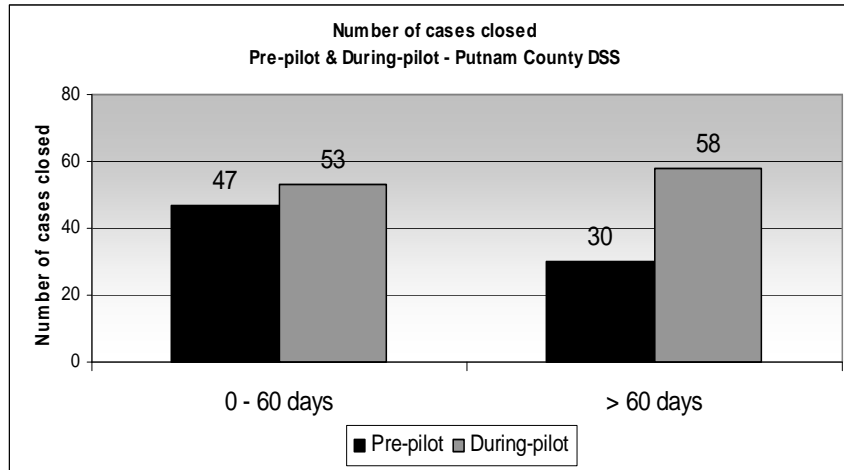
## Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Putnam 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 somewhat during the test period, up from 47 in the pre-pilot period to 53 during the pilot period. The number of cases closed in over 60

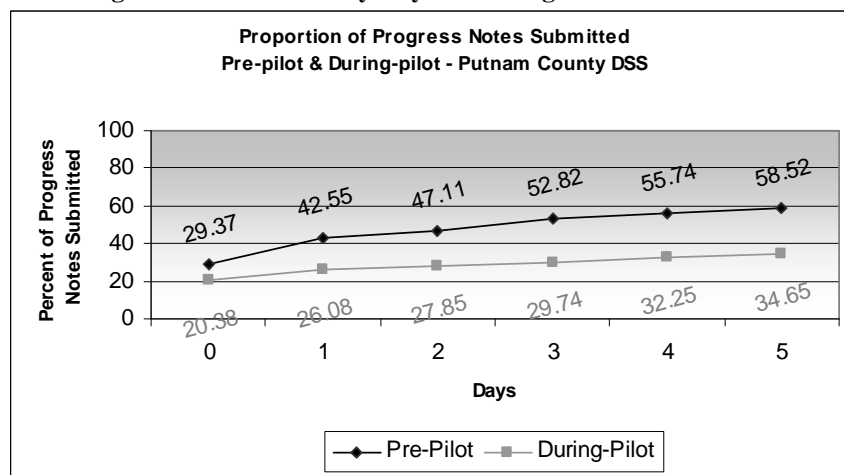
days increased from 30 in the pre-pilot period to 58 in the pilot period. This is a marked increase in productivity; the total number of cases closed increased from 77 in the pre-pilot period to 111 during the pilot – a 44 % increase. It is important to note that in this county the total number of cases available to be worked on<sup>2</sup> decreased slightly from 173 in the pre-pilot period to 162 in the pilot period – a 6.4% decrease.

**Figure 1 - Number of Putnam 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 third day following the event. But contrary to expectations, the proportion of progress notes entered in each time period during the pilot is substantially below that of the pre-pilot period. By the fifth day, over 58% of all notes were entered for the pre-pilot period, compared to less than 35% for the pilot period. By this measure, timeliness decreased markedly during the pilot.

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



<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.

There may be multiple reasons for this decrease in the timeliness of note entry. The overall increase in case closings during the test 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. In Putnam County DSS, a total of nine laptops and docking stations were deployed as desktop replacements, along with wireless access cards for all. Substituting the laptops for a desktop PC could require a period of adjustment. In addition, the pattern of progress note entry in the test period shows a larger than expected number of notes entered in during the period of 40-60 days after the event. This suggests an effort to close older cases, which would show in the analysis above (Table 2) as a drop in timeliness.

Policies and related work practices can account for changes in workflow of progress notes during the test period. In this county, workers were not allowed overtime pay for work on the laptops at home, but were encouraged to arrange flex time instead. This may be an insufficient incentive for some to take the laptops home regularly or devote substantial time to note entry outside regular hours (although it should be noted that many respondents during the teleconference call were very positive about flex time). Also, technical difficulties may have played a role. For example, one respondent reported, “At times, logging-on to CONNECTIONS while in [the] field or at a hospital was difficult; the connection was not strong, this is a problem with the wireless card.” Additional adjustments to these deployment 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 Putnam respondents reported some substantial positive impacts on their work resulting from laptop use, shown in Table 2 below. For timeliness of documentation, one-third of the respondents reported improvements, and four of the nine reported improved ability to work in court and access information from the field. A smaller proportion (two of nine) reported improvements in service to clients and none for communication with supervisors. No respondents reported a negative impact on any of the work categories.

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

|                                    | <b>Much worse<br/>(n)</b> | <b>Somewhat worse<br/>(n)</b> | <b>About the same<br/>(n)</b> | <b>Somewhat better<br/>(n)</b> | <b>Much better<br/>(n)</b> |
|------------------------------------|---------------------------|-------------------------------|-------------------------------|--------------------------------|----------------------------|
| Timeliness of documentation        | 0%(0)                     | 0%(0)                         | 25%(1)                        | 50%(2)                         | 25%(1)                     |
| Ability to do work in court        | 0%(0)                     | 0%(0)                         | 0%(0)                         | 75%(3)                         | 25%(1)                     |
| Ability to access case information | 0%(0)                     | 0%(0)                         | 0%(0)                         | 75%(3)                         | 25%(1)                     |
| Communication with supervisors     | 0%(0)                     | 0%(0)                         | 100%(4)                       | 0%(0)                          | 0%(0)                      |
| Service to clients                 | 0%(0)                     | 0%(0)                         | 50%(2)                        | 25%(1)                         | 25%(1)                     |

That lack of reported negative impacts on timeliness and other work activities is somewhat inconsistent with the timeliness of documentation results obtained from the central database. It is

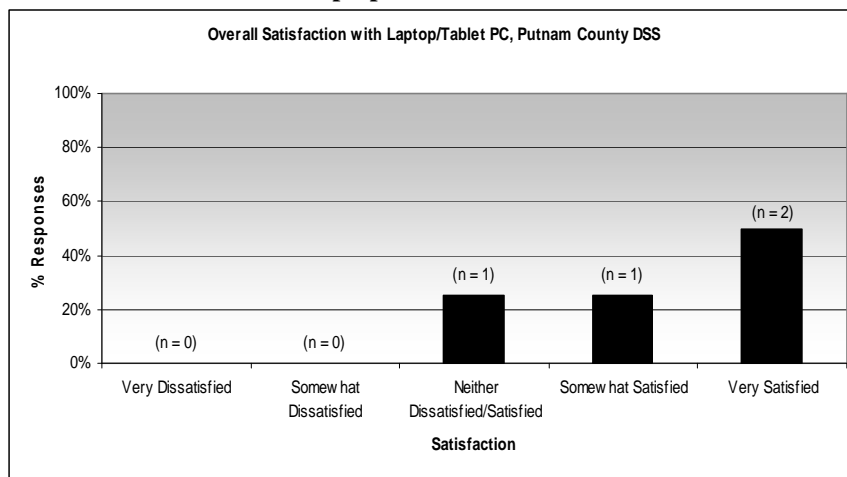


possible that the caseworkers responding to the survey were unaware of the overall trend in timeliness seen in Table 2 or their perception was based more on the increased rate of case closing.

## Satisfaction

The overall level of satisfaction with the laptops was high. Figure 3 below shows that three of the four respondents expressed being “Somewhat satisfied” or “Very satisfied.” None of the respondents expressed being “Dissatisfied” with the laptops, while only one respondent indicated that they were “Neither dissatisfied/Satisfied.”

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



\* Based on survey respondents who took the post survey n = 4. Total number of testers n = 8.

Laptop use generally was seen as contributing to lower job-related stress; three of the four respondents said that it did reduce stress, while only one said it did not. Those who reported a reduction in stress attributed it to their ability to catch up on their work and increased flexibility for doing work outside of the office.

All four respondents would recommend the use of laptops to colleagues. One caseworker pointed out that, “The laptop is a great addition, in our office we do have some issues with being short staffed, but for the most part I do think that the laptops will be very helpful in the long run.” Another respondent stated, “All caseworkers in child welfare services, including MPS and foster care, should have laptops. All are in the field with no time to access or enter information and are overworked and understaffed.”

# 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 (08/03/07 – 10/21/07 and 10/22/07 – 01/09/08 respectively). A total of 3,155 progress note entries and 239 unique investigation stages made up the dataset from eight 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.

For more information about CTG or this report please contact:

**Meghan Cook**, Program Manager  
Center for Technology in Government  
University at Albany, State University of New York  
187 Wolf Road, Suite 301  
Albany, NY 12205  
Phone 518-442-3892