

A Return on Investment

The question of what overall gains or benefits can result from this laptop deployment is a difficult one. In such questions of return on investment (ROI), it is important to recognize the variety of value propositions that can be used to describe the desired or expected benefits. These benefits vary with different points of view, and can range from simple cost savings from operational efficiencies in CPS work to improved quality of life for children at risk and their families. The value proposition from the point of view of the individual CPS worker may include such benefits as improved quality or timeliness of documentation, increased time available for client contact, decreased work-related stress and better information access for decision making. The agency perspective might expand this value proposition to include higher morale and job satisfaction, cost savings on travel, lower staff turnover, and improved agency performance on productivity metrics. By contrast, the value from the public's point of view may focus instead on lower incidence of child abuse and better support for families and communities. Other relevant points of view could include related state or local agencies or the state government as a whole.

This assessment report presents results from two main points of view, that of the agency and that of the individual CPS worker. Moreover, only certain measures of results were used. Therefore any discussion of return on investment is limited to those points of view and the related results. We therefore have a useful but necessarily limited picture of ROI. It is arguable that other benefits were obtained, particularly from the point of view of the public, but they were not included. While the public perspective is the ultimate basis for determining the benefits of such an investment, tracing and documenting those outcomes was not possible for this assessment. Therefore it is not possible to judge whether the maximum returns were obtained.

The question of whether maximizing returns could be obtained hinges in part on possible barriers to full implementation and optimal use of the technology. Our results in this assessment showed that there are important barriers to obtaining the maximum value from the use of these laptop computers, even in the limited number of measures we used. These issues are discussed in more detail below.

New York State's Mobile Technology Investments

Over the past two years, New York State has invested two million dollars on mobile technology devices for child protective services. Spreading the resources throughout the state, caseworkers in over 23 LDSS now use laptops and tablets to enter and access information directly into the state's child welfare system on a regular basis. Although this large investment has seen payoffs, conflicting policies and management practices are slowing efforts to truly maximize this important investment.

In a complex environment such as NYS social services, a statewide technology deployment is very challenging. Local districts are state supervised but administered locally so the probability of making change immediately is low but also not recommended. Incremental change where feedback informs subsequent phases is preferred and is exactly what OCFS is doing. Thus, NYS's Mobile Technology Pilot Program has moved through a natural progression of stages in uncovering and addressing issues in order to make the most of laptop use. Slowly, LDSS are sharing information with other LDSS about supportive policies and practices. With a strong steady pace, OCFS can continue to make modifications along the way to bring about positive cultural changes and reduce barriers.

How to Maximize

NYS OCFS and the Local Departments of Social Services wanted to obtain the best possible returns on their investment on mobile technology deployment. The original goals state that increasing caseworker productivity by allowing more work opportunities was highly desired. Laptops could be used at times during the day when caseworkers could not access their computer. Thus, if caseworkers could use those times more effectively, productivity would increase.

Assessment findings show that to maximize returns from the laptop investment, policies, procedures, and practices must be addressed within each LDSS. This extended assessment and previous work suggests that the use of technology alone does not drive substantial productivity increases in CPS casework. More specifically, it seems that caseworkers' productivity may be far more influenced by their current caseload size and policies and management practices that surround mobility. Technology is a core component of this organizational change but in the current environment, its highest value may be difficult to attain.

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Maximizing the investment starts with wireless connectivity. A laptop is only a piece of hardware until it has a wireless connection. Once that is in place, the laptop becomes a useful tool for caseworkers. If a LDSS chooses not to provide wireless connectivity, the technology cannot be used to its fullest capability and, subsequently, the return on the laptop investment will decrease. Not addressing this fundamental component will result in fewer benefits and less return on investment.

Once the core technology and connectivity pieces are in place, policies and practices gain more importance. Creating supportive policies about compensation for work done outside regular work hours and scheduling "office-time" are critical. When a LDSS creates policies which promote some type of compensation, even with pre-approval processes or over time limits, the likelihood of using the laptop increases. When policies are created that discourage or restrict use, the propensity to experiment with using the laptop and likelihood of using the laptop decreases.

The existence of uniform policies for scheduling and working in the field are critical to gaining the most benefits. The lack of a blanket policy that describes laptop use in the field causes each supervisor to set his or her own policies, which creates inconsistent use across districts and fosters frustration for caseworkers. One supervisor in this assessment, for instance, discouraged caseworkers from using the laptop in the field to document notes. He felt that sitting in a public parking lot or at a public library was not acceptable and reported that caseworkers should drive back to the office to document notes. In that same district, another supervisor openly supported using the laptops in the field and the caseworkers were able to document notes without having to travel back to the office. When caseworkers talked to each other, both were openly frustrated with the conflicting policies.

If a LDSS does choose to set policy that encourages use in the field and promotes flexible scheduling of field visits, the likelihood of using the laptop increases. Similarly, if the policy discourages use in the field, caseworkers will be less apt to bring the laptops with them and subsequently miss many opportunities for use.

Understanding Compounding Effects on Productivity

In order to better understand the true effects on caseworker productivity and how influences can quickly compound, the following formula shows, in the most basic way, a caseworker's potential for productivity. A caseworker's amount of work is based on the rate at which work is done multiplied by the time available to do work.

RATE x TIME = AMOUNT OF WORK

This equation is quite simplified, as it takes into account several assumptions, including a) caseworkers are working at their maximum effort at all times but are not capacity constrained, b) case difficulty is evenly distributed among caseworkers, and c) caseworkers are using laptops with wireless connectivity.

In this equation, the rate at which a caseworker does work, such as case documentation, is multiplied by the time available to do this work equaling the amount of work completed. Increasing or decreasing the rate and/or time will either positively or negatively impact the amount of work completed. In theory, laptops should increase the rate and time that work can be done and subsequently the amount of work each caseworker completes. Factors such as poor or nonexistent wireless connectivity, practices that discourage use, and heavy caseloads, create a compounding effect where any laptop benefit is diminished exponentially.

Impacts on Rate of Work

The LDSS with the lowest cases per employee per day indicator – NYC/ACS – showed the most positive gains in timeliness and productivity, while the LDSS with higher cases per employee per day indicators (as compared to NYC ACS) showed gains in timeliness and productivity although with more modest changes (Onondaga and Wayne) (see Appendix E for more details). Although in some districts the suggested reasonable caseload levels are very hard to achieve, it seems likely that those LDSS where caseloads are at more manageable numbers may benefit more directly from the use of technology and therefore be more likely to demonstrate a more noticeable return on investment.

Mobile technologies such as wireless laptops have the potential to increase the rate of work by providing access

to information in the field and reducing a large portion of travel time. Traditionally, when a case is assigned and a caseworker is in the field or at home, he or she would call a colleague and have them read the case information. With a laptop, caseworkers in the field can access the information and get started on the case without having to take the information by hand. When any case information is needed in the field, access to that information can happen almost immediately.

The amount of work completed is highly impacted by technology and connectivity. Processes that have multiple sign-ons increase the amount of time that it takes to boot-up the system, thus slowing down the rate at which work can be done, or if the boot-up time becomes prohibitive, it could deter use altogether. Connectivity speed and availability play a large role in rate of work. If it becomes faster to drive back to the office than to work from the field because the connection is slow and multiple interruptions in connection mean subsequent sign-ons, the potential for an increased rate of work is diminished.

Management policies influencing the amount of resources invested in infrastructure and connectivity solutions also affect rate of work. Management decisions that reduce infrastructure and technological support resources may impair the operating environment and increase the likelihood that the technologies are not used or become obsolete overtime. For instance, if caseworkers lack access to their own broadband card, their opportunities to connect are limited. Also, LDSS which are supporting mobile technologies require a different type of technology support, so that the devices can be maintained appropriately and consistently over time. .

Impacts on Time

Connected laptops hold the most potential to increase opportunities to work. Some caseworkers have time to do work in between client visits potentially avoiding a trip back to the office, some on their commute, others in court, and some catch-up at home after regular work hours instead of sitting in the office. There is tremendous potential for using time differently with a connected laptop. Even if rate of work did not increase, a caseworker's productivity could increase by simply opening up more opportunities for pockets of work time. There are many incentives and disincentives in creating more work opportunities, some of which are described below:

- **Willingness to use laptop at home.** Working after regular work hours at home is dependent on policies. If there is no policy about compensation, some caseworkers may use it at home just for their own "piece of mind." Although this is true for some caseworkers, there are just as many that will not use it at home because there is no policy. This is because if they work in the office, they get paid, whereas if the work at home they do not. Some LDSS created policies that did not support laptop use at home. It was reported that this type of policy had an effect on everyone, even those who were using the laptop at home after hours for their own personal satisfaction. A district-wide unsupportive policy has a clear overall negative effect on laptop use.
- **Willingness to use laptop in the field.** If a caseworker can foresee themselves using the laptop in the field he/she will bring it into the field. If not, caseworkers generally leave it at the office, at home, or in the trunk of the car. Since it was widely agreed that caseworkers should not use a laptop in a client's home, the only time they can use out in the field is before or immediately after the visits. Subsequently, if policies (or suggested practices) discourage using laptops in the field, caseworkers will not take the laptop with them when they leave the office. In one LDSS, a supervisor was not comfortable with caseworkers doing work in places other than the office and therefore would not let caseworkers use the laptop in the field. The caseworker reported that the supervisor preferred to monitor the employees' work while in the office. Variations in supervisory policies, specifically those that discourage use outside the office, drastically decrease the potential for spontaneous work opportunities that exist during the day. Creating policies and practices that promote using the laptop in the field add to the opportunities to use "existing time during regular work hours." Increasing the time a caseworker has during regular work hours to complete work can potentially have a positive effect on productivity.
- **Willingness to use laptop in court.** Court presents many opportunities to do work. The original thinking about waiting time in court was that it had the potential to be used more productively. Caseworkers sometimes waited two or three hours to represent their cases. However, caseworkers reported that there are many barriers (including technical, social, and procedural) to using the laptops while in court house. Courts also pose other issues, which may or may not be within the control of the LDSS, including cramped and non-private spaces to work, the security and anti-terrorism infrastructure of new courthouse buildings, and court room overcrowding. Many caseworkers reported that they are less apt to bring the laptops to court if they are aware of these barriers, which subsequently decreases other spontaneous uses.
- **Willingness to work during commute.** For those workers who have time during a commute to do work, productivity depends on the wireless connectivity and the physical space to work. If each person has their own broadband card and is comfortable in the space to work, then they do so. These pockets of time prove to be

quite productive for some caseworkers who get extra work time in every day. Investment in connectivity solutions that work for each caseworker is critical to make sure that when these opportunities arise, caseworkers can take advantage of them.

- **Willingness to use on weekends.** A laptop is considered very useful by caseworkers who are on-call for the weekend. On-call caseworkers are compensated for this period of time and it is considered part of their normal work assignments. For those that are not on-call but are looking to catch-up on documentation over the weekend, the policies for compensation after work hours applies here as well. If policies are supportive of after hours compensation, caseworkers indicated they would use time during weekends; if not, then only those seeking personal 'piece of mind' will use the laptop over the weekend to catch up on documentation.

Conclusion

If productivity is a desired way to measure the value of an investment, understanding the impact of technology on rate and time is necessary to know how to maximize that value. Connected laptops open up new opportunities to do work, but if they are simply placed within the old realm of existing culture and policies, the gains become only small to modest. However, if the environment can change to accommodate a new technology, then broader and more significant benefits can accrue.
