

ISM

IT Solutions Management for Human Services

an affiliate of the American Public Human Services Association



FAMILIES AND CHILDREN TRACKING SYSTEM

DISCONNECTED COMPUTING

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DISCONNECTED COMPUTING

Overview

- Background
- Rationale
- Assumptions
- Constraints
- Approach
- Method
- Security
- Training Considerations
- Findings



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Mobile Workforce

- Most of the essential functions in Social Work practice are completed away from the social worker's desk and their desktop computer
 - Interviews
 - Assessments
 - Home Visits
 - Treatment Team Meetings
 - Court Hearings
 - Provider Evaluations



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Why Disconnected Computing?





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Rationale

- Business need to provide off line work capability
- Allow staff to capitalize on “wait time”
- Greater flexibility with work schedules
- Increased productivity
- Reduce staff stress



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WV Mobile Technology Progress

- + Laptops – Dial up
- + PDAs



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Approach

- Two disconnected computing methods were adopted to meet this business need for off line work:
 - FACTS to Go
 - Digital Pen



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FACTS to Go

- FACTS to Go is the use of a tablet pc that synchronizes with the central FACTS database and allows users to send records to a local database on the tablet pc for offline work while they are away from the office
- Currently used by Child Protective Service Crisis Workers



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Why Tablet PC?

- ✦ Laptop/tablet PC was found to be the best option after analysis of alternative devices
- ✦ Commercial systems limited and expensive
- ✦ MIS has the skilled resources to accomplish the task



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Assumptions

- Same FACTS application will be used for central database and disconnected computing
- When user 'checks out' records to the tablet, the system must mark the record as checked-out
- Client information must remain protected at all times
- Process should appear 'seamless' to the worker



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+ Method

+ Hardware

+ Tablet PC

+ Software

+ Oracle database resides on the Tablet

+ FACTS application

+ Data encryption software



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Method (cont)

- The same FACTS Application that runs on the central database also resides on the Tablet
- All application security and system edits for FACTS also apply to the application on the Tablet
- Application areas available for update on the Tablet: Client Screens, Child Protective Services Investigation Assessment, Contacts



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Method (cont)

- ✦ Data is selected for check out/in via a mobile application connection area
- ✦ Mobile connection area displays the status of records on the mobile database
- ✦ All updates (in both directions) are handled by stored procedures



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Method (cont)

- System logs track all record check-in/check-out activity, as well as, record modifications that were made on the tablet
- The maximum number of records that can be checked out at one time by the user is 22



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Method (cont)

- ✚ Data on the Tablet is encrypted
- ✚ Records on the Tablet are required to be checked back into the central FACTS database every two weeks
- ✚ If the data on the tablet is not checked back into the central FACTS database after two weeks, then the data on the Tablet is destroyed



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+ Method (cont)

- + When a record is checked out to the tablet, the record in the central database is 'locked'
- + Only the System Administrator can update a locked record



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+ Method (cont)

+ Conflict Resolution:

- + Conflicting updates are handled using a three pronged approach
 - + Prevention
 - + Detection
 - + Correction



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Security!

Security Issues:

- Preventing theft of Tablet
- Preventing theft of confidential client data
- Avoid ending up in the news



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Layered Approach-Physical/Encryption Security

Physical Security:

- Theft Prevention: Educating workers against potential theft and consequences of losing confidential client information – not to mention their hard work



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+ Layered Approach-Physical/Encryption Security (cont)

+ Data/System Security:

+ Authentication

- + Bios password

- + Data encryption password

- + Network password

- + FACTS password

+ Encryption

- + Data destruction



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Training Issues

- Nominal, one time training is required
- No need to retrain the user on how to use the FACTS application



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Findings

- Findings are based on:
 - Data collected from the system
 - Surveys from users
 - Interviews
 - Users
 - Administrators
 - FACTS Staff



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Findings

- Eliminates duplication of effort resulting in:
 - Time Saving – Workers report that using the tablet saved 30 to 45 minutes of work time entering contact/assessment information into the client record
 - Work is more efficient – reduces the need to ‘retype’ handwritten notes when the worker returns to the office
- Requires minimal user training



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Findings (cont)

- Tablet is portable - Workers report that the tablet integrates easily into existing business process
- Provides offline access to FACTS
- Seamless field data workflow
- Seamless integration with the central Oracle database



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Findings (cont)

- Handwriting recognition capabilities of the tablet increased productivity
- Speech recognition software that came with the tablet was also a great time saver
- Application deployment is simpler



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Findings (cont.)

- Captures field data accurately at the point of activity resulting in:
 - Improved data quality
 - Improved data processing efficiency
 - Improves ROI by capturing field data accurately at the point of activity



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Findings (cont.)

- The only negative report received thus far was related to the battery life of the tablet



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Next steps for “FACTS to Go”

- User driven expansion
- Expand to include additional child welfare staff
- Exploring additional user authentication methods such as smart cards and biometric fingerprint



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+ Digital Pen

- + Bridges the Gap between paper documentation and electronic record keeping
- + Digital pen is being used with WV Safety First – Protection Plans completed by Child Protective Service Workers



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+ Digital Pen

+ Hardware

- + Brand: Logitech Model io2

+ Software

- + Digital Pen

- + Firmware - Pen Software Version: 3.3.631.1

- + Pen Driver Version: 3.1.593.1

+ Paper

- + Xpaper Smartwrite (Professional Edition)



DISCONNECTED COMPUTING

➤ Digital Pen

➤ How does it work?

- Combines the portability of a traditional pen and paper with computer processing
- A hard copy of the document is printed on special paper and an electronic image is also stored
- Users write on with the digital pen on the document
- The writing is recorded to the pen memory
- Through the uniqueness of the special paper, the pen recognizes the correct form to match



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■ Digital Pen

■ How does it work?

- The data stored in the pen is transmitted through a cradle and matched with the image of the original document
- An exact copy of the handwritten document in a PDF format is created
- The PDF document can be uploaded to the case file cabinet and incorporated as part of the client's electronic record



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+ Digital Pen

+ What are the Benefits?

- + Speedier forms processing
- + Transparent transition and acceptance of a new technology
- + Traceability
- + Enhanced data accuracy
- + Eliminates lost paperwork



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+ Digital Pen

+ What are the Constraints?

- + Large Scale Printing of forms requires a certification
- + Our State Print Shop is not certified to print forms
- + Forms are currently printed centrally by FACTS



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+ Digital Pen

+ Findings

- + Minimal one time training was required
- + Users reported that they felt comfortable with the technology immediately
- + Users reported that it was easy to incorporate in their existing business practice
- + Users found that it was a tremendous benefit to be able to store the forms in the electronic file cabinet for future reference



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+ Digital Pen

+ Next Steps

- + User driven development
- + Additional documents
- + Transferring information directly into the FACTS database



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Final Thoughts

- ✚ One size does not fit all
- ✚ Create a menu of options
- ✚ Allow staff flexibility to select the option(s) that best integrates with their work process
- ✚ Security is critical



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Thank You!