Community Services Network Stewardship Database Analysis

1-1-2002

Robert Reed

Find similar works at: http://stars.library.ucf.edu/istlibrary

University of Central Florida Libraries http://library.ucf.edu

Recommended Citation


This Research Report is brought to you for free and open access by the Digital Collections at STARS. It has been accepted for inclusion in Institute for Simulation and Training by an authorized administrator of STARS. For more information, please contact lee.dotson@ucf.edu.
Community Services Network Stewardship
Database Analysis

October 4, 2002

Robert Reed
Tammie McClellan

IST-TR-02-04

Institute for Simulation and Training
3280 Progress Drive
Orlando, FL 32826
Community Services Network Stewardship
Database Analysis

October 4, 2002

Robert Reed
Tammie McClellan

IST-TR-02-04

Institute for Simulation and Training
3280 Progress Drive
Orlando, FL 32826
EXECUTIVE SUMMARY ................................................................. II

1. PURPOSE OF STUDY .............................................................. 1
   1.1. LOCATE POSSIBLE SOFTWARE ALTERNATIVES ..................... 1
   1.2. EVALUATE ALTERNATIVES .................................................. 1
   1.3. MAKE RECOMMENDATIONS, INCLUDING TIME & COSTS ....... 1

2. BACKGROUND .............................................................................. 1
   2.1. CSN PROVIDES THREE PROGRAMS ....................................... 1
   2.2. COMMUNITY STEWARDSHIP .............................................. 1

3. DISCUSSION: CURRENT METHODS ........................................... 2
   3.1. ENTRY, VERIFICATION, & VALIDATION OF HOUSEHOLD .......... 2
   3.2. INFORMATION COORDINATION & SHARING ....................... 3
   3.3. FUND MANAGEMENT & DISPERSAL ..................................... 3
   3.4. NETWORK & DATA MANAGEMENT ....................................... 3

4. SEARCH FOR SIMILAR AGENCIES ........................................... 4
   4.1. LOCATE SIMILAR AGENCIES ............................................. 4
   4.2. FOLLOW LINKS ..................................................................... 4
   4.3. RESULTS ............................................................................. 4

5. CONCLUSION ................................................................................ 4
   5.1. CURRENT SYSTEM DEFICIENCIES ....................................... 4
   5.2. A MAJOR UPGRADE WOULD BE HIGHLY BENEFICIAL .......... 5

6. ALTERNATIVES ............................................................................ 6
   6.1. RETAIN CURRENT CMS SYSTEM ....................................... 6
   6.2. PURCHASE & CONFIGURE MAACLINK ............................... 6
   6.3. PURCHASE & CONFIGURE RADII ...................................... 8
   6.4. CREATE A NEW SYSTEM TO SPECIFICATIONS .................... 10
   6.5. CREATE A HYBRID SYSTEM .............................................. 11

7. EVALUATION OF ALTERNATIVES ........................................... 12
   7.1. PARAMETERS & WEIGHTS .................................................. 12
   7.2. EVALUATION ..................................................................... 14
   7.3. INTERPRETATION ............................................................ 15

8. RECOMMENDATIONS ............................................................... 15
   8.1. PURSUE THE MAACLINK ALTERNATIVE .............................. 15
   8.2. UPDATE & REGISTER WEBSITE ....................................... 15
   8.3. SECOND ALTERNATIVE; NEW DEVELOPMENT ..................... 15

9. NOTES - CAVEATS ..................................................................... 16
   9.1. NETWORK-BASED INFORMATION SYSTEMS ....................... 16
   9.2. DEVELOPING NEW SYSTEMS ........................................... 16
   9.3. TRAINING & GENERAL SUPPORTABILITY ............................ 16

Attachments

   MAACLINK Cost Proposal
   RADII Cost Proposal
   Parametric Decision Support Matrix (disk)
Executive Summary

What Was Done

A search for similar agencies was conducted via the Internet in hopes of identifying potential existing management systems which CSN might adopt. Aside from looking for such systems, CSN staff had identified two specific systems worthy of consideration.

Following installation and review of the current CMS, both systems (MAACLINK and RADII) were reviewed in significant detail as to ascertain their relevancy. Additionally, the product developers/owners were contacted to answer a number of operational and support type questions which would provide insight into their general acceptability and costs. Follow up meetings with the CSN staff were held to further understand appropriate considerations.

The nature of the CSN business service model causes numerous variables to be considered (e.g., impact upon client agencies, costs to be born by all participating agencies, network topology, etc). Given the number of criteria and differing importance of each, a parametric decision support model was constructed to more objectively evaluate the alternatives.

Key Results & Recommendations

It was very obvious from the beginning that the CSN staff were extremely well versed on their own needs and required underlying data structures. Through continued study and contact, more exact expectations emerged which led to focusing upon discriminators between the competing alternatives – not based upon their internal existing data architecture (both commercial systems developers were willing to make necessary internal code and data adjustments to accommodate CSN), but upon methodology, technology, supportability, cost, and other similar criteria.

The results of the decision model were further melded with the researchers’ experience and best judgment. As a result, the MAACLINK alternative rises to the top followed closely by development of a completely new system. Neither of these alternatives are cheap. However, they both offer great benefits to the long-term viability of the CSN management initiatives. The MAACLINK alternative is recommended over new development primarily due to the time to implement. MAACLINK is an existing system which could be rapidly deployed, even while modifications are being made. New development could take up to 10-12 months before initial deployment. Should the sponsor downplay the time element, new development would be the top choice. It would also be less expensive in the long term (over MAACLINK).
1. Purpose of Study

1.1. Locate possible software alternatives
The mission and operations of CSN are known to be relatively unique across the United States in community services. However, it is not known whether there may be other agencies operating similarly that have more up-to-date software which may prove acceptable to CSN. Using the Internet for speed of research, searches should be conducted to locate possibilities.

1.2. Evaluate alternatives
In addition to any alternatives located by the Internet search, consider two known products, MAACLINK & RADII. Also consider development of a completely new system designed to the unique specifications of CSN.

1.3. Make recommendations, including time & costs
Identify appropriate issues for discriminating between available alternatives (including time and costs to execute). Make recommendations based upon these and an understanding of the needs of CSN as it moves ahead.

2. Background

2.1. CSN provides three programs
- First Call for Help; the information & referral call center.
- Community Resource Directory; the resource information publication.
- Community Stewardship; the fund management service. Key functions of the Stewardship program are:
  - Monitoring agency compliance with client eligibility requirements
  - Verification of client information, client data entry, and maintenance (clearance function)
  - Issuing assistance payments
  - Managing agency and funder accounts
  - Developing statistical reports
  - Coordinating “stakeholder” meetings across multiple funds and for specific funds.

2.2. Community Stewardship
While this section is not a detailed description of the functions performed, it highlights those which should drive selection of replacement management software.
  - The scope and breadth of the service requires highly sophisticated, complex, rule-based software to appropriately manage activities and provide needed information for decision making.
Households: The entity which is ultimately monitored and tracked. Agency rules base assistance on a household which is potentially very complicated to collect and manage data upon. The nature of human relationships cause significant problems for a typical database management scenario: e.g., persons may not disclose their real relationships; may significantly alter their relationships at will; and may even disagree on such relationships existence. The need for a data system to constantly clarify and track changes is paramount to ensuring scarce resources are not provided multiple times to the same household problem.

- The same or other members of a household may simultaneously seek assistance from one or more social service agencies.
- The household may have physically moved since last contacted.
- Household membership may have expanded, contracted, or had a shift of “head of household” since last contacted.

Agencies: Assistance is only possible by member agencies maintaining close scrutiny of their financial resources while simultaneously providing for the highest flexibility of their application. A single funds management agency (e.g., CSN) can provide for both but incurs great complexity by accepting funds from a wide variety of sources, with many differing schedules for income, and many differing rules for dispersing and auditing.

3. Discussion: Current Methods

3.1. Entry, Verification, & Validation of Household

As client agencies process requests for assistance from community household members, CSN is a central service for verifying and validating information on the household and its members. While client agencies may maintain information on their own household members, CSN retains information across client agencies. This permits data to be updated regardless of the current source of inquiry allowing for all agencies to benefit from the most recent household data available.

In addition to verifying current data, CSN is able to provide validation by comparing current assistance requests with historical household requests across agencies. Further, CSN also ensures funding sources’ requirements are met prior to issuing checks.

These actions require substantial data collecting, review, and management. The current CMS system provides numerous opportunities for case workers to properly identify households making assistance requests and track such requests over time, even with changes occurring within household make-up and location. However, there is substantial burden placed on the case worker to “know what to look for” to ensure rules and procedures are applied. Reliance upon staff recollection is required in many areas of the CMS and provides one of the most compelling arguments for selecting a new system. In today’s climate, agencies must be able to convince stakeholders that resources are being applied wisely and according to the strict rules set down. Reliance upon human recollection is not a sufficiently rigorous method. Employing software systems where rules are explicitly stated and enforced does rise to expectations.
3.2. Information Coordination & Sharing
Currently, methods for sharing information rely upon telephone, FAX, and postal mail. In a few cases, email is available, but not widely adopted and/or integrated into the CMS. Each of these methods are “human” based, not system based. This means significant effort is expended to conduct coordination even when all that is needed is to pass along a message or to request a look-up of data.

3.3. Fund Management & Dispersal
While collecting and sharing household data consumes the bulk of transactions within the CMS, Fund Management is a unique and innovative service. In essence, each client agency places some or all of its assistance funds under control of CSN who serves as an “honest broker” both for authorizing dispersals as well as performing accounting duties. Specifically, CSN conducts the following activities for each managed fund ...

- Planning Income
- Tracking Income/Expenditures
- Authorization Validation Actions
- Funds Summaries & Analyses
- Direct Funds dispersal

3.4. Network & Data Management
- LAN (Novell): CSN employs a Novell local area network to connect workstations and file servers throughout their building. Users share files residing on the file server. Household information (CMS) is maintained in MS FoxPro, a personal database system with substantial programming and interface capabilities. The actual interface code is compiled and as such, unavailable for coding changes. This has left the database itself in a [now] obsolete format inaccessible by modern data management systems without substantial format conversions. Since the data system is many years old, the researchers suspect a high probability of data failure continuing to mount due to the inability to perform maintenance directly on the database. Similarly, the Fund Management modules have been implemented in MS Access [Microsoft’s follow-on to FoxPro]. While the interface code is available and the database can be accessed by recent software systems, it is suspected that maintenance of the database files is also long overdue. Failure to perform such file maintenance over long periods where data is being changed and added on a frequent basis is a “catastrophe waiting to happen.” CSN has been vigilant in its backup procedures, however, which would limit the impact such failures could exhibit. Finally, while FoxPro and Access are high quality personal database programs, they were not designed for sustained production usage across many users. Particularly, the network protocols and communications methods (ODBC) are insufficient and prone to failure (which could ultimately corrupt the databases). Given the continued growth of the CMS, it is just a matter of time before
severe, unsolvable data problems result. Replacement software should provide for use of a modern, SQL database for better protection and performance.

- Web (ISP): CSN maintains a World Wide Web presence, but only for basic brochure and contact information. The site is not registered with the common search engines as to make it quick and easy to locate by the public or other community service agencies. So, while there is a website available, it is not sufficiently prominent to make it worthwhile. Should an alternative be selected which also provides an internal web server, this website should be moved to that server and cancel the ISP provider contract.

4. Search for Similar Agencies

4.1. Locate similar agencies
Compare similar agency management systems for possible adoption by CSN. Multiple web-based search engines were employed using a variety of terms both alone and in combination (e.g., community social services network funds fiscal management stewardship)

- A wide variety (thousands) of Case-Management agencies were found
- No instances of multi-agency fund management were located
- The CSN website was only found via a direct search using Google

4.2. Follow links
Several large social service sites (e.g., HUD) were explored to backtrack their programs into operations similar to that of CSN. Researchers also looked for but did not find any "genre" of this nature even by reviewing hundreds of "hits" followed.

4.3. Results
It appears such agencies either do not exist or are not promoting their services across the web. While this is not likely a problem to persons seeking assistance, it does highlight a loss of opportunity for locating additional fund sources and the sharing of ideas between similar agencies.

5. Conclusion

5.1. Current system deficiencies
While functional, the current hardware and software systems contain several serious functional and performance deterrents which limit expandability and increase overall costs. Stewardship functions are solely dependent upon a small CSN staff to manually apply various general and specific rules to determine potential eligibility.

- Data collection & input is relatively straightforward, but is in need of a few modifications to better integrate household data and the fund management functions (specifically, issuance of checks). Such shortcomings are being
overcome by staff members going through extra manual processes to ensure information is kept up to date and linked with other available information. The selected alternative should address these so as to limit the requirement for staff to depend upon their own experience and memory to ensure data links are formed.

- Data sharing is a manual process at the moment. Staff from a client agency must contact a CSN staff member to search and retrieve desired information while providing new data to the CSN staff that they might update the record. The selected alternative should allow for client agency staff to electronically search and retrieve household data directly, without involving a CSN staff member. Similarly, additions to data records should be accomplished by remote case workers, again without CSN staff intervention.

- System administration & maintenance is currently performed by Mr. Paz. While he is capable and willing to perform the tasks, it detracts from his more important functions. The selected alternative should either eliminate such requirements or provide for their “outsourcing”. Depending upon the alternative, this could include hardware maintenance, software updates, programming, operating system updates and security, data file maintenance, system backup, and monitoring communications capabilities.

5.2. A major upgrade would be highly beneficial
As CSN adds new client agencies and services, the current system will become even more taxed and further out of date. Even beyond potential system failures, the closed nature of the current system (due to age and obsolete data software) will continue to raise CSN operating costs. This will mostly be in terms of lost opportunities and higher-than-need-be human costs performing manual operations which could otherwise be off-loaded to machinery.

- Reliability, Availability, Maintainability (RAM): Although the current system requires little attention and has been, for the most part, quite reliable, the cost to repair any system failure or problem goes up significantly as time passes. Should none of the original personnel associated with the CMS be available during a serious problem, there is HIGH potential to lose the entire system and all data simply because of inability to reconstruct a working CMS.

- Expandability/Extensibility: As mentioned, the CMS is a closed system to which very little can be added or changed. As an example of lost opportunity, consider the amount of paper being maintained in conjunction with the data records … copies of receipts, checks, letters, and other documents. Not only do these require staff to process and file, but there is also a physical space requirement (e.g., paying rent for building space to accommodate filing cabinets). One opportunity to seize with the selected alternative would be for electronic data storage with relationships to individual data records. This would greatly reduce filing time and costs. Such a system could even provide for automatically accepting incoming FAX.
6. Alternatives

6.1. Retain current CMS system
While this may not sound like a viable option, it is plausible. The current CMS has been operating well over many years, and therefore is quite stable and familiar (not to mention cheap). The data system is primarily based upon compiled FoxPro code, the source for which is no longer available. Further, the physical data file format is also obsolete and no longer supported (or readable) by modern/current software systems. This places the data content at great risk of becoming unusable. However, in the funds management module, some minor reprogramming could be executed to both “fix” some problems as well as add a few extra reports and capabilities. Doing so would likely extend the life of the CMS another couple of years. However, the CMS must be significantly changed in order to protect the data being collected and to provide the additional functionality desired for sharing data among client agencies. Obviously, there are no immediate costs incurred by accepting this alternative, although there are potential “hidden” costs (e.g., how many more client agencies could CSN accept using the current system).

6.2. Purchase & configure MAACLINK
This is a product/service developed by a Missouri based agency providing functions similar to CSN for their local community (in the Kansas City area). The software was developed many years ago and has been continually upgraded to meet current technology and communication challenges. The agency has evolved the software into a “hosted” solution for client agencies to share data as well as conduct funds management. While the software does not contain every feature and data field currently in use by CSN, it does contain an overwhelming percentage. The software developers are also willing to make special code changes [for a fee] to accommodate unique CSN requirements. Between what is already available, acceptable procedural changes by CSN, and code modifications, the MAACLINK system could fully meet the needs of CSN both now and well into the future. It is expected that such programming and configuration could be executed quite rapidly, allowing the new system to enter operational service within a few months of start. Aside from the obvious benefits of providing required functionality, this solution also offloads “developmental” responsibility to a commercial company who’s existence continues to depend upon their support to their original Missouri-based agency as well as to CSN. The architecture and network communications method is that of a single server physically located in Missouri with workstations connected remotely via the Internet to access and update data. The Internet is used solely as a wide area network for transport of data; no special Internet protocols are in use (e.g., HTTP, FTP, TELNET, etc). Thus, the only reliance upon the Internet is strictly for connectivity.
Among the general advantages cited above, others also stand out …

- No new hardware or other operations equipment would be required. The software interface is relatively small and non-intensive; appropriate for use on existing workstations both at CSN and client agencies. No dedicated computer technician or network manager would be required. Appropriate access to the Internet for each workstation becomes the minimal requirement.

- Since MAACLINK is a product of a third party, the detailed algorithmic functional knowledge is also maintained by the third party, even while they accept suggestions from users. This has a valuable benefit of freeing CSN personnel to focus their knowledge and activity upon their primary business instead of also worrying about computer systems. Further, this permits training to be conducted by the third party developer as well permitting faster response to personnel turnover.

- Joining with the Missouri-based agency could strengthen the concept of other similar community service agencies and funds stewardship. This also means sharing the costs for future developments across all participating agencies (not just those within CSN’s purview).

Disadvantages of adopting this solution …

- The software is “hosted” by the agency in Missouri. This means that the Internet is used to provide the means of connecting CSN to their data. Should the Internet become inaccessible (which happens, although infrequently), CSN would not be able to conduct any business requiring entry or lookup of data.

- The CSN data would physically reside in Missouri which could lead to legal issues concerning privacy either in Missouri or in Florida. There is a possibility that the developer would be willing to allow CSN to set up its own hosting. Should the MAACLINK alternative be pursued, this particular aspect should be further investigated as it would negate some of the more risky/annoying drawbacks (e.g., the data would physically reside with CSN; potential network outages could be reduced; etc.) However, new drawbacks would be encountered (e.g., requirement for professional network administration).

- The system is potentially quite expensive, especially if each client agency is required to participate due to licensing fees (not hardware requirements).

- Unless all client agencies participate, CSN could end up with more work to perform resulting from their handling of the agency’s data by proxy. The actual value of this work may be quite acceptable in light of advantages. A more thorough study should be conducted with client agencies should this option be pursued.
Costs for this solution ...

- **Upfront**: Based upon contact with MAACLINK, it appears there may be substantial room for negotiation based on their interest and adjusting the number of client agencies and supported workstations. However, at quick glance from their proposal (attached), start-up costs would likely be around $20k to CSN. Add to that roughly $1k per participating client agency.

- **Recurring**: Again, this may be negotiable, but would appear to be about $500 per client agency plus $500 annually for CSN.

### 6.3. Purchase & configure RADII

RADII is also a third party developed software system. The developers are personally known by CSN and participated in the original CMS software development. The company has a few installed products within the Central Florida area and has been in the commercial software distribution business for only a short time. Their approach to the design and operation is quite different from MAACLINK. It is quite similar to the current CMS although many improvements and extensions have been added, particularly for sharing data across/among client agencies. The primary drawback is lack of any funds management functionality (although the company indicates it is committed to creating such in the near future – currently in earliest design stage). In fact, should CSN pursue this solution, RADII Technologies indicates a willingness to share future profits with CSN from sales of the fund management module in return for CSN’s expertise and guidance in the development. Certainly, just as MAACLINK provides inherent benefits because of its third-party development, so does RADII. As the experts on their system, they assume knowledge for training and code maintenance. The company is also willing to make any necessary data modifications required by CSN.

The architecture and network communications method is more forgiving than the MAACLINK approach. Each agency using RADII maintains a server to handle that local office’s data work. At predetermined times, the server(s) would contact another agency’s server to exchange and synchronize appropriate data holdings. This process is controlled through a set of programmable software rules created by the agency to define data relationships with other RADII servers. Since daily operations are performed against the local agency database, Internet downtime is not serious. Further, the disruption of any individual server has no immediate effect upon others.

**Additional advantages of RADII include …**

- Each agency maintains their own data. Should connections be lost or other agencies cease to participate, none of the agency’s data would be lost. Further, this means that local work need not be interrupted due to an Internet outage.

- The required local server and Internet connectivity could be relatively minor depending upon the agency serviced. While CSN may want and need a dedicated high speed broadband connection with a large powerful server, smaller agencies may be able to use a dial-up connection for a minimal server.
- RADII Technologies is extremely familiar with the specific requirements of CSN. This becomes very important as new functionality is needed and built. Understanding the unique business practice of CSN would likely produce very effective solutions.

- As a small company focused on this product, RADII Technologies would be expected to provide rapid response to questions and problems which will, inevitably, arise.

Disadvantages of adopting this solution …

- RADII does not yet provide a system capable of replacing all of the current CMS; funds management is missing. While the company is eager and willing to add that, the availability of a stable funds module is not likely within another year.

- The RADII rules module is far from complete. Many required scenarios are not yet handled. RADII was designed more to support local one-on-one agencies requiring off-site backup than for actually using and sharing data holdings.

- Following the above, the schema used for handling transactions across agencies allows potential for error since updates are shared in real time (although the time delay could/would normally be very minor). In practice, this should not pose a major risk.

- Each client agency would need to install and maintain a RADII server and workstation in order to provide their agency’s data into the larger data set. Alternatively, CSN could execute data management via proxy for some agencies. The additional workload this would entail may not be cost effective in order to adopt the solution.

Costs for this solution …

- Upfront: Pricing information from RADII Technologies is confusing. However, it appears that approximately $15k - $20k should provide for base software and up to 10 users at CSN. It appears that each client agency would also require licensing and software at about $6k per agency with 5 users each. Additional costs for potential hardware and/or training would be extra. Note: this does not include fees for development and deployment of a funds management module.

- Recurring: There does not appear to be any direct recurring costs to RADII. Network communications and system administration costs would be required, however, for each participating client agency.
6.4. Create a new system to specifications
Given the age of the CMS and the technology available during its construction, creating
a totally new system has strong appeal. Obviously, by so doing, one would expect all
current and definable functionality would be included, using the latest communications
technology for sharing across client agencies. The architecture would consist of a fully
web-based SQL database driven application running on a central server. Access would
be fully controllable with security encryption available. Authorized users would use
their normal web browser for interface negating the need for costly software or servers
within each client agency.

Additional advantages include ...

- CSN could retain distribution rights to the software thereby ‘productizing’ it
  much as MAACLINK has done.

- The centralized server within CSN would give CSN absolute control and
  ownership of data regardless of client agencies participating. Controls could be
  designed within to permit separate configurations for various experience level
  personnel as they learn the system.

- If the server were physically located with CSN (instead of an ISP), Internet
  outages would only affect users from client agencies, not CSN itself. Further,
  by using the same web server to provide public relations pages instead of
  maintaining a separate ISP service, month ISP fees could be eliminated.

- Advanced functionality could be included or planned for to permit client agency
  personnel to actually upload files along with form submissions. This could also
  include capability to FAX documents both into and from the server.

- Additional communications capabilities could easily be included, such as instant
  messaging, email, video, and more. These facilities could reduce response time
  as well as provide for redundancy. CSN could even provide dial-up services,
  email accounts, and more for client agencies further reducing the overall system
  costs while providing advanced services.

- If the system included additional capabilities to perform functions needed by
  the client agencies, fees could be charged to the client agencies and thereby
  reduce the financial burden of CSN to create the system.

Disadvantages of adopting this solution ...

- Software development is never an easy task. Locating a development team
  capable and willing to produce the system may be difficult, especially
  considering the desire for a rapid development cycle. This study’s researchers
  would be one likely source for such work.
Although operational and recurring costs for software would be very low, the upfront cost (cost of development) may be extensive. Adding the necessary hardware and commercial software for the web and SQL servers along with planning for their security and maintenance over time may prove expensive. Outsourcing the administration function (while maintaining the physical pieces) would most likely provide the best compromise.

Depending upon the development team established, expectation of its future continuance is risky. Since they will not retain rights to market the software (which likely has limited marketability), their future success would not depend upon this software development effort. Hiring an established team from an organization which has and will exist specifically to provide such service will reduce this risk.

Outside development teams are likely to need substantial subject matter expertise in order to design and implement all the required features. MAACLINK and RADII development teams have that expertise already. A new team could take longer during design and debugging. However, with the expertise of Mr. Paz, this particular impact should be manageable.

Costs for this solution …

This is not a proposal for work, merely a ball-park industry estimate.

- Upfront: Estimate $50k for programming over 8-12 months; $10k for server hardware, SQL software, and middleware. Other options add to overall costs.

- Recurring: Estimate $10k/yr for outsource administration, $2k/yr hardware/software updates. Communication (e.g., DSL) extra.

6.5. Create a hybrid system

A hybrid system could be constructed whereby the current CMS case management software would continue to be used but provide for web access by remote client agency personnel. The funds management module would likely be updated and hardened as well. This could form the basis for a longer term project to produce the "new" system described above, but done in much smaller phases over a longer period of time. Suggest beginning with hardening the funds management module followed by accessing the CMS case data and interface to web. The latter effort would also require establishment of a web server with appropriately developed data interfaces and a conversion routine for accessing the old data format used by CMS.

Additional advantages include …

- Over time, the hybrid system would become a completely new system with the benefits mentioned above. Each new phase could be planned, both for funding and execution.
• Immediate concerns could be addressed relatively quickly for little money.

• Training would be minimal as most functions would continue “as is” for CSN staff. As new items are introduced, training would be handled gradually.

• Introduction of the web portion for sharing would accrue similar advantages as already mentioned for the “new” alternative; primarily, client agencies would have substantial access to data for very little cost.

Disadvantages of adopting this solution …

• Possible difficulty finding a development team willing to accept such small projects with little guarantee of future work.

• Introducing a web-based environment brings the same disadvantages noted for the “new” system; primarily, the cost and administration of web services.

• There would remain little linkage between the case management data and fund management module. However, some linking could be established. Basic functioning of the CMS would not be changed (fixed or enhanced).

Costs for this solution …

• Upfront: There are too many variables at this point to determine an estimate. However, it would be reasonable to expect to spend, on average, about $10k per year for 3-5 years.

• Recurring: Undetermined.

7. Evaluation of Alternatives

Parametric Decision-Support methodology was employed to allow alternatives to be individually evaluated against numerous parameters which may be weighted separately according to importance. The attached electronic spreadsheet contains the model for the sponsor to adjust weights to study sensitivity. Changing parameter weights does not affect the value adjudged by the researchers for the alternatives. Those values were ascribed based upon the research of the alternative to provide a capability, function, or service.

7.1. Parameters & weights

Allowing for each of the various advantages and disadvantages highlighted in the above section (Alternatives) to be treated as parameters, a decision matrix was constructed and parameter weights established. It is these weights which give the model its power for discrimination. While the researchers’ opinions served as the basis for the initial comparison, the study sponsor should adjust the weights in the electronic spreadsheet according to their best estimate of priority and contribution to intended outcome. The weights should be considered as relative to the other weights and on the same scale to identify priority and importance.
7.1.1. Stewardship Internal: 10: The capability to create, update, and provide "case" information within CSN so as to apply eligibility rules (e.g., if these tasks are expected to be quick and easy by CSN staff, score high).

7.1.2. Stewardship Shared: 5: The capability to create, update, and provide "case" information to client agencies (e.g., if client agencies are able to perform these tasks quickly and easily, score high).

7.1.3. Funds Management Internal: 10: The capability to create, update, and provide fund management activities (e.g., track income and expenses by funding agency across "cases" as well as summary reports) (e.g., if these tasks are expected to be quick and easy by CSN staff, score high).

7.1.4. Funds Management Shared: 3: The capability for client agencies to create, update, and provide funds management for themselves (e.g., if client agencies are easily able to utilize the new system to manage/administer their own funds accountability, score high).

7.1.5. Call Center: 1: The ability to meet basic needs of First Call. Primarily, this would have to do with accessing household data as well as producing information about available community resources (e.g., if the call center could easily access the data and publish the community resource guide, score high).

7.1.6. Web-based: 5: The extent to which the system is integrated with and uses the WWW (e.g., if the dominance of service is achieved by users interfacing with a web browser to access a central server, score high).

7.1.7. Citrix-based: 3: The extent to which the system is integrated with and uses Citrix or similar methodology (e.g., if the dominance of service is achieved by users interfacing with a local computer program to access a central server, score high).

7.1.8. TCPII-based: 3: The extent to which the system is integrated with and uses broadband networking (e.g., degree to which the system depends upon the Internet protocol across public carriers to achieve sharing — if there is high dependency upon the WAN, score low).

7.1.9. LAN-based: 1: The extent to which the system is integrated with, uses, and depends upon a local area network (e.g., if there is high dependency upon a LAN instead of a WAN, score high).

7.1.10. Support & Maintenance: 7: The ease for providing system support, bug fixes, and minor enhancements (e.g., if support is expected to be low, score high).

7.1.11. Startup Costs: 6: The degree to which the startup costs become a concern (e.g., if costs stay within available/attainable resource, score high).

7.1.12. Recurring Costs: 7: The degree to which recurring costs are kept low (e.g., if annual costs stay low, score high).

7.1.13. Client Agency Buy-In: 6: The extent to which client agencies are expected to be willing to participate either based upon functionality or local contribution to their mission as well as the expected cost of implementation (e.g., if agencies would likely adopt the alternative based upon functionality and cost, score high).

7.1.14. Reliability, Availability, Maintainability: 10: The degree to which the system is expected to run smoothly over time with little administration or intervention (e.g. if lots of problems are expected, score low).

7.1.15. Increased Work Effort: 8: The extent to which CSN is NOT expected to increase their workload as a replacement for a client agency (e.g., if a client agency does not adopt the selected system and CSN must perform those functions by proxy, score low — if the non-adoption by a client agency adds little or no extra workload to CSN, score high).
7.1.16. **Flexibility, Scalability**: 6: The extent to which the system can inherently provide for minor new features and/or handle adding more client agencies (if the system is expected to be able to handle such unforeseen possibilities, score high).

7.1.17. **Training Effort**: 4: The extent to which new training can be avoided as well as any required training be easy to accomplish (e.g., if the new system requires extensive personnel training and/or the effort to conduct the training is substantial, score low).

7.1.18. **Overall Complexity**: 6: The extent to which the new system is considered "complex" (e.g., if the new system is considered straightforward and of normal industry complexity, score high).

7.1.19. **Administration Effort**: 8: The extent to which administrative efforts are minimized (e.g., if local administration involvement is expected to be minimal, score high).

7.1.20. **Time to Implement**: 6: The length of time before the system can be considered "installed and done" (e.g., if the system can be put in place and brought operational very quickly, score high).

7.1.21. **Data Conversion>Loading**: 9: The capability and effort required to move current case and funding data into the new system (e.g., if requires special conversion code and/or re-keying, score low; if little or no effort required, score high).

### 7.2. Evaluation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Weight</th>
<th>MAACLINK</th>
<th>RADII</th>
<th>CMS</th>
<th>New</th>
<th>Hybrid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stewardship Internal</td>
<td>10</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Stewardship Shared</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Funds Mgt Internal</td>
<td>10</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Funds Mgt Shared</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Call Center</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Web-based</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Citrix-based</td>
<td>3</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TCP/IP-based</td>
<td>3</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LAN-based</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Support - Maintenance</td>
<td>7</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Startup Cost</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Recurring Cost</td>
<td>7</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Member Buy-In</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Uptime / Reliability</td>
<td>10</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Work Effort</td>
<td>8</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Flexibility - Scalability</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Training Effort</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Overall Complexity</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Administration Effort</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Time to Implement</td>
<td>6</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Data Conversion&gt;Loading</td>
<td>9</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

**Score**: 424 368 404 445 402

- **Weight**: 1 to 10; 1=low importance, 10=high importance
- **Evaluation**: 0 to 5; 0=low value, 5=high value
7.3. Interpretation
From the matrix above, the alternative’s scores form a suggested rank-order based upon the parameters stated as important. In order of “best fit”, the “New” alternative is ranked highest, followed by MAACLINK, then by “Hybrid”, then CMS, and lastly RADII. It should be noted that changing the parameter weights would likely change the rank order. This should be explored by the sponsor utilizing the attached electronic spreadsheet.

8. Recommendations

8.1. Pursue the MAACLINK alternative
Investigate the subordinate issues noted in the discussion of MAACLINK.

8.2. Update & Register website
Review content on the website for currency and have it updated. Request the web master also submit the site to several of the top search engines (e.g., Yahoo, Google, Lycos, AltaVista).

8.3. Second Alternative; New Development
Should detailed conversations concerning MAACLINK not prove satisfactory, pursue development of a new system. This will entail creation of a general statement of work indicating priority factors and general methodology. This SOW may then be communicated to industry for bids or to a specific contractor if one is already known....
9. Notes - Caveats

9.1. Network-based information systems ...
If more than one computer is involved, then there is a potential for one of them to be unavailable at a critical moment (regardless of the reason). Significant progress has been made over the last few years to harden networks and protect against outages. Today, the local area networks (which RADII concentrates upon) are sufficiently stable. However, the wide area network connections most available (the public Internet) still have a ways to go. But this risk is primarily dependant upon the local service provider and will decrease over time due to improving technology.

9.2. Developing new systems ...
Although the evaluation places the "New" alternative at the top, this is not the recommended solution. This alternative scores high by definition ... one would only build a system which meets all desires as best as possible. However, the keys to success depend upon finding a development team which can actually do the job in the allotted time for the specified budget. Further, the team should be able to go well beyond customer specifications and provide a system which has natural elasticity so that unexpected needs/growth are built in from the beginning and not required at each new turn. There is significant risk involved on the part of the sponsor when selecting such a team not already known and trusted. Further, with the expectation of the United Way coming onboard and other personnel shifts, starting such a new project in the new environment is also very risky and should be avoided.

9.3. Training & general supportability ...
Relying upon internal staff to conduct training and/or support systems has advantages such as fast response time and better understanding of the environment and adapting to it. However, staff are most generally hired to perform specific duties other than training and system support. Thus, when they are diverted to these functions, they are not performing their primary duties. Further, they may not be sufficiently well equipped to provide serious professional responsibility for the training or support. Use and reliance upon third parties for these functions may appear to be more costly (since the fee for service is readily identifiable), but is often the least cost alternative, especially in cases where problems surface requiring extensive knowledge or attention.
ATTACHMENTS
MAACLink  
*Human Services Information Management System*  
Proposal for Orlando Community Services Network  

**Cost Estimate (Based on Assumptions Shown)**

**Assumptions**
1. 65 agencies connected to CSN with up to 5 computers per agency. Additional computers over 5 per agency (not included in cost estimate below) will incur a one-time start-up fee of $195 per computer and annual hosting fees of $100 per computer.
2. 20 computers will be connected concurrently to the host server for access to the database, on the average. Additional concurrent computer connections during any time period (not included in cost estimate below) will incur additional start-up fees of $400 per computer and additional annual fees of $195 per computer.
3. Modest custom programming will be required to allow for printing of utility assistance checks. For purposes of this estimate we assumed 40 hours of custom programming time for this feature. This is only an example and has not been quoted by the software developer. Any customization agreed to will be billed at $120 per hour.
4. Conversion of data is available from the software developer. This cost estimate does not attempt to estimate conversion costs. Conversion of data will be billed at $120 per hour.
5. CSN will provide an onsite database administrator for the network.
6. MAAC personnel will make one 3 day trip to train administrator and data entry personnel for the network. A longer training time can be arranged if necessary at the rates shown below.
7. Onsite administrator will install Citrix client on computers, set up and maintain required codes, and provide ongoing help to local network users.
8. Ongoing phone and e-mail support for the database administrator will be available during normal MAAC business hours of 8:00 AM to 4:00 PM (Central time).
9. CSN and partner agencies will provide adequate personal computers and high speed internet access.

<table>
<thead>
<tr>
<th>Up to 20 Con Users</th>
<th>Start-up Costs</th>
<th>Annual Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Software License</td>
<td>$2,995</td>
<td></td>
</tr>
<tr>
<td>Per Agency Licenses - $995 per agency (up to 5 computers per agency)</td>
<td>$64,675</td>
<td></td>
</tr>
<tr>
<td>Additional User Licenses - $195 per computer for over 5 per agency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concurrent User Licenses - $400 per concurrent user</td>
<td>$8,000</td>
<td></td>
</tr>
<tr>
<td>Annual Hosting Fee - $500 per agency (up to 5 computers per agency)</td>
<td>$32,500</td>
<td></td>
</tr>
<tr>
<td>Annual Hosting Fee - $100 per computer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Storage and Data Transfers - $195 per computer over 20 concurrent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>System Administrator Training Onsite</td>
<td>$1,500</td>
<td></td>
</tr>
<tr>
<td>User Training Onsite</td>
<td>$1,200</td>
<td></td>
</tr>
<tr>
<td>Customization Requested by CSN and agreed by MAAC - $120 per hour</td>
<td>$4,800</td>
<td></td>
</tr>
<tr>
<td>Conversion Requested by CSN - $120 per hour</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Up to 20 Con Users</th>
<th>Total 1st Year Cost</th>
<th>Total Accumulated Cost - First 2 Years Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Cost Estimate (Based on Assumptions Above)</strong></td>
<td>$83,170</td>
<td>$32,500</td>
</tr>
<tr>
<td><strong>Total 1st Year Cost</strong></td>
<td>$115,670</td>
<td></td>
</tr>
<tr>
<td><strong>Total Accumulated Cost - First 2 Years Combined</strong></td>
<td>$148,170</td>
<td></td>
</tr>
</tbody>
</table>
Radii (Advanced Client Management System) Pricing

Community Wide Network

1) Server Software

*PTS can provide the main data server. Please see server configuration.*

2) Community Resource Guide

Establishes a list of community wide resources for agency transactions and referrals.

3) Radii (Community Network)

1) 1 – User: $850.00
2) 2 – User: $1,600.00
3) 3 – User: $2,350.00
4) 5 – User Site License: $2,995.00
5) 10 – User Site License: $5,990.00
6) 20 – User Site License: $11,980.00

Single Agency – LAN Network

*Pricing remains the same, as above, for user licenses plus:*

Network Server software: $2,995.00

*(LAN or Peer-To-Peer 15 users maximum)*
Coalition Site License

1) 40 – User $23,960.00

This allows the “lead agency” in a community to allocate user licenses to each agency based on current need. It also allows for flexibility as the community/agency user requirements change. Each client installation is assigned a unique license serial number. No two Radii client installations can log in to the server using the same serial number.

Implementation/Training

Implementation includes the installation and configuration of Application (Data) Server and all user computers at the participating agencies. $1,000.00 per day plus expenses

No more than 10 users per training class.

Support

Technical phone support is free for the first thirty-(30) days from the completion of the implementation. After this period, technical phone support will be billed at $85.00 per hour (paid in advance) or at a rate of $75.00 per hour if a block of 20 or more hours are purchased.