Management Information System for IDAs:
A Feasibility Study

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In 1997, the Center for Social Development initiated the development of an electronic monitoring instrument to track program, participant demographic, and saving activity at the 13 organizations running Individual Development Account (IDA) programs in the American Dream Policy Demonstration (ADD). With collaboration among IDA stakeholders (IDA program organizations, financial institutions, Corporation for Enterprise Development, policymakers, and funding partners), the instrument was expanded to become a management information system known as MIS IDA. MIS IDA is a "three-in-one" tool providing account management, project administration, and evaluation.

The IDA field has grown significantly in the last six years, from three programs in 1995 to over 350 programs in 2001. Currently, there are over 240 copies of MIS IDA in the field and in use at 26 state-supported IDA programs. The market continues to grow as more state and federal policymakers embrace the concept of IDAs.

MIS IDA has been of central importance in the development of the IDA field. Reporting from MIS IDA data in ADD (see CSD publications *Savings Patterns in IDA Programs,* 2000 and *Saving and Asset Accumulation in Individual Development Accounts,* 2001) provides timely and accurate data from a large, multi-site policy demonstration.

Data from MIS IDA showing that low-income people can save had a major influence on federal and state policy. Of equal importance, MIS IDA's management reports have been essential tools that have enabled IDA administrators to manage and account for complex financial arrangements among funders, programs, and participants. MIS IDA is at least partly responsible for the IDA field growing rapidly with no major administrative catastrophes to date.

And as IDA programs have expanded and been refined over the last few years, new MIS requirements have emerged. Currently, MIS IDA operates on a stand-alone IBM-compatible workstation or in a local area network environment but there is increasing need for wide-area network capability to support statewide and other multi-site environments. In addition, funding sources are requesting reports unique to their programs, and IDA program administrators have revised their requirements for data collection and retrieval.

The purpose of this study is to review the current functionality of MIS IDA to assess its future viability as a management information tool in the growing IDA market. Participating stakeholders in the IDA field were asked to participate and provide feedback on their experiences with IDA programs and with MIS IDA. (Not all participants were MIS IDA users. Stakeholders included IDA program administrators, financial institutions maintaining accounts, funding partners, and program evaluators. See Appendix A for the list of participants on the feasibility study team).

To frame the context for the study's discussion and report, stakeholders were asked to consider the following general questions:

1. What data should be collected, how will data be reported, and by whom?
2. What role will each stakeholder play in management of the programs?
3. What system will be used to manage the programs?
4. Where will the IDA market be in 2 years, 5 years, 10 years?
5. Where does MIS IDA fit in this picture?

During the course of the study, two other MIS products for IDAs emerged and are included in the study as alternatives to MIS IDA. One is a system funded by the Department of Health and Human Services for the Assets for Independence Act (AFIA) IDA demonstration and developed by PeopleWorks, Inc. and SPSS, Inc. (a company that provides a popular statistical analysis software) which is scheduled to be released for beta testing in May 2001. The second is a web-based modified 401(k) system prototype called "OnLine IDA" that will be developed over the next year by a team from the Harvard Business School, D2D Fund, Inc., and a third-party Employee Benefit Service Provider, SunGard. Given the development of these systems, this report describes possible scenarios for information management of IDAs in the future:

- Scenario 1 – Use current version of MIS IDA or comparable existing system
- Scenario 2 – Develop web-based version of MIS IDA or comparable system
- Scenario 3 – Develop third-party account management

Feasibility Study Process

A series of four conference calls were conducted with the feasibility study team. These took place during 2000 as follows: July 27, August 17, September 28, and October 26. Additional meetings were held between and after these dates with various members on specific topics including meetings with computer systems professionals to review web design architecture and cost.

Team members were instructed to think about the future of the IDA field, consider what kind of management system would facilitate growing IDAs "to scale," review existing systems, and make recommendations for moving toward this larger vision. Specifically, the team was asked to define the system design goals and to address the following questions:

1. **What data should be collected, how will data be reported, and by whom?**
   - At a minimum, what data should be collected? Is this more than, less than, or equal to current MIS IDA data collection? Should optional modules be created for data collection, to allow for limited or extensive data collection?
   - How should data be reported, more standard reports or user-customizable? What other kinds of reports are needed?

2. **What role does each stakeholder play in management of the programs?**
   - Stakeholders include community agencies, financial institutions, intermediaries, research organizations, and other partners.

3. **What system will be used to manage the programs?**
   - Should there be centralized or decentralized data storage and management: regional, national?
   - How shall an MIS be connected to financial institutions? Is real-time connection possible? Should there be daily, monthly, or quarterly transfer of account activity from financial institution? Consider current examples of online banking? Real-time data transfer issues include: software capability/compatibility; security; banks' willingness to participate.

4. **Where will the IDA market be in 2 years, 5 years, and 10 years?**
   - What is the impact of AFIA and its alternative interest calculation method? Does this method allow growth to scale?
   - What is the likely impact of the Savings for Working Families Act (SWFA) legislation if passed?

5. **Where does MIS IDA fit in this picture?**
   - Is MIS IDA satisfactory as is?
   - Should MIS IDA be further developed?
   - Could MIS IDA be incorporated into existing information technology systems in the field (e.g. 401K-like system, IRA, other investment systems, etc)?

Response from the Team

System design goals

The team agreed on the following system design goals:
- Minimal data administration in the field
- Seamless electronic feed from financial institutions
- Real-time access to account information
- Independent hardware/software platform
- Secure system
- Increased data entry error checking
- Flexibility to generate custom reports

- Limited "mandatory" fields
- Cost-efficient
- Easy to use

Representatives of financial institutions also added recommendations from their perspective:
- Pool program dollars to reduce costs to the financial institution.
- Work with one or a few stable (intermediary) organizations to reduce the operational risks of working with individual community-based organizations (CBOs).
- Standardize account set-up and structure.

The team evaluated the current version (Version 3) of MIS IDA with respect to the system design goals and determined that MIS IDA would require four major structural revisions to meet the goals. They include:
- WAN functionality (web-based). For multi-site administration, these features are especially important:
    1. Remote access to do data entry (intake information).
    2. Various security levels of access for certain fields/forms.
    3. Account management information to be handled by central administration only.
- Modular (and optional) data entry format to allow for questions based on client population or level of evaluation.
- Realtime access for view and/or edit of IDA account information.
- Expanded reporting capability (including standardized reporting among funding sources). Also want to be able to do more customization, create charts, graphs, etc.

What data should be collected, how will data be reported, and by whom?

The team divided the system into content areas, reviewing all data elements and reports within each area. They identified six types of stakeholders within an IDA program: multi-site administrator, single-site administrator, IDA participant, funding partner, financial institution, and evaluator. Each stakeholder has different information requirements. Those most common among all six are included in the recommended data elements listed in each content area.

Program information. The consensus was that program information was not necessary. This would exclude MIS IDA's "Program Background" and "Program Activity" forms. Most of the program background information was useful only for evaluators and organizations had existing systems to track program expenditures. However, minimal program information would be necessary such as organization name, address, phone, and contact person. A unique numeric identifier might also be required to distinguish between organizations.

Participant characteristics. In general, the team thought that all participant characteristic fields should be retained (since they already exist in MIS IDA), but that some were more critical than others were. In addition, the team felt that there should be more customizable fields than the two currently in MIS IDA.

Some fields should be programmed for optional entry; that is, a user could skip entry of the field on the form without error. It was suggested that a new version institute a modular data entry

approach such that there is a standard form that all IDA programs use, and other forms that contain questions specific to a particular population or that are optional. For example, an IDA program serving the Temporary Assistance for Needy Families (TANF) population may have different kinds of information to collect than one serving non-TANF recipients. As another example, some organizations may choose to not ask questions about participants' assets/liabilities. An IDA program could use the forms most appropriate for their data collection requirements.

The recommended participant characteristic data fields to be included in a new version of MIS IDA are noted below as either optional or critical:

Field Name	Optional or Critical
Participant Id (unique or SSN)	Critical
Name (first, middle, last)	Critical
Address (street1, street2, city, state, zip)	Critical
Phone (two numbers)	Critical
Other contact name (first, last)	Optional
Other contact address (street1, street2, city, state, zip)	Optional
Other contact phone	Optional
Name of case manager	Optional
Date of birth	Critical
Enrollment date (same as account open date)	Critical
Gender	Critical
Ethnicity	Critical
Marital status	Critical
Number of adults in household	Optional
Number of children in household	Optional
Employment status	Critical
Monthly income	Critical
Current TANF?	Optional
Current SSI?	Optional
Total value of assets	Optional
Total value of liabilities	Optional

Participant account management. The discussion regarding participant account management centered more on *who* should keep track of the data (see Scenarios sections). Most of the existing data fields in MIS IDA were considered necessary but the concept of tracking minimum periodic deposits was rejected. There was also discussion about whether tracking numbers of deposits and withdrawals was critical and thus were noted as optional.

In addition, there was a modification requested for the *Account Statement Form* to display the previous *closing balance* and *period end date* on the current data entry form. These minor revisions may be made in the current version of MIS IDA.

The recommended data fields for participant account management to be included in a new version of MIS IDA are:

Field Name	Optional or Critical
Participant Id (unique or SSN)	Critical
Name (first, middle, last)	Critical
Joint or individual ownership	Critical
Enrollment date/account open date	Critical
Maximum savings goal	Critical
Monthly savings goal	Optional
Account number	Critical
Financial institution name	Critical
Opening balance	Critical
Deposit amounts	Critical
Matched withdrawal amounts	Critical
Unmatched withdrawal amounts	Critical
Number of deposits	Optional
Number of withdrawals	Optional
Interest	Critical
Service charges	Critical
Ending balance	Critical
Annual percentage yield	New
Interest to date	Critical
Match rate	Critical
Source of match funds	Critical
Match amount	Critical
Date account closed	Critical
Period begin date	Critical
Period end date	Critical

Funding partner/match management. All of the data currently in MIS IDA are critical to managing the funding partners and match dollars. A new field includes the name of the individual authorizing the match disbursement. In a multi-site or large-scale environment, it is more difficult and therefore important to track match disbursements more comprehensively.

An important consideration in the discussion of match management is management of multiple funding sources. The current version of MIS IDA provides this capability but additional flexibility was requested to be able to restrict a funding source (link to participant) by criteria other than "intended use."

The recommended funding partner/match management data fields to be included in a new version of MIS IDA are:

Field Name	Optional or Critical
Participant status (active, exit, pending distribution)	Critical
Status date (for each status noted above)	Critical
Annual/lifetime maximum savings	Critical
Number of months to complete saving	Critical
Match rate/formula per funder	Critical
Name of funding partner/funder Id	Critical
Funding end date	Critical
Amount of match obligated	Critical
Amount of match disbursed	Critical
Projected match	Critical
Amount of match eligible from forfeiture	Critical
Date match dollars disbursed	Critical
Name authorizing match disbursement	New
Name (organization or individual) receiving match disbursement	Critical

Reporting

The team's response to reporting reflects the data to be collected; that is, less program-related reports, and more participant-focussed reports. However, there were requests for additional reports on match projections and forfeitures if CBOs continue to provide account management.

Reporting has been significantly impacted by the funding partners who are supporting IDA programs. Funding partners have their own reporting requirements which may be different from the standard reports currently provided in MIS IDA. Although it would be ideal to develop a common reporting template among all funders, the reality is that different funders will continue to have different reporting requirements. In order to satisfy these requirements, program managers would like to be able to customize the data from MIS IDA.

MIS IDA developers have encouraged the development of companion databases in Microsoft Access that would allow additional reports and queries to be created (indeed, this was the major reason for choosing Microsoft Access as the platform for MIS IDA). Although staff members at some of the CBOs have done so, the majority of the organizations do not have the resources to develop new queries and reports in Microsoft Access. As a possible short-term solution, CSD has offered to maintain a "shareware" resource of queries and reports on its web site for those who have similar reporting requirements.

Currently, MIS IDA can generate reports that display data from one or multiple IDA program sites that are stored in the database. An additional feature to facilitate reporting would be the ability to report on a subset of the sites. That is, a user could specify an aggregate report for two out of three sites that are in the database.

The reports considered most useful in the current version of MIS IDA are:
- Matched Withdrawals by Use
- Cumulative Account Activity (and filtered by site-specific field)
- Participant Address List
- Participant Account Information

- Participant Background Information
- Participant Exit
- Individual Account Statement
- Participant Account Statement Summary
- Matched Withdrawals
- Closed Accounts
- Discrepancies Between Total and Approved Withdrawals
- Discrepancies from Target Periodic Savings
- Closed/Exited Exceptions Report (3 sections)
- Demographics

Those considered useful but not as critical are:
- Matched Withdrawals by Individual
- Mailing Labels
- History of Match Rates
- First Matched Withdrawal

Requests for additional reports include:
- Sorting current reports by "intended use" field
- Sorting current reports by case manager
- New reports on projections (using average monthly savings and average monthly retention), and forfeitures on match dollars.
- Reporting via charts/graphs
- Reports as specified by funding sources

One organization has extracted participant demographic and account information from MIS IDA and imported the data into Microsoft Excel to create graphical charts. The information in these charts may be useful to include in future versions of MIS IDA or other MIS. Charts include:
- Number of Clients by Savings Goal
- Number of Clients by Ethnicity
- Number of Clients by Age Range
- Average Number of Adults per Household
- Average Number of Children per Household
- Average Max Lifetime Deposit by Savings Goal
- Average Max Months by Savings Goal
- Average Overall Monthly Deposit
- Average Monthly Deposit by Savings Goal
- Average Amount of Matched Withdrawal by Savings Goal

What role will each stakeholder play in management of the programs?

Who should keep track of the IDA program data? The options are: CBO single-site administrator, multi-site administrator, financial institution, and/or other third-party account manager. This depends in most part on the system to be used and will be more fully addressed in the sections below. However, some roles are likely for all situations:

- Regardless of whether the CBO functions in a single or multi-site administration capacity, it is assumed that the CBO's customer is the IDA participant and therefore the CBO will be responsible for maintaining participant information. Data may be collected through MIS IDA's database or comparable software, or through a web-based front-end to a third-party account manager.

- The financial institution must provide participant account information to the participant, either via the CBO or directly, regardless of MIS used. The financial institution holding the match funds must provide similar information to the CBO. How the data is processed will be discussed in a later section.

- A third-party account manager may play a role in data management. As noted in the feedback on "what data should be collected," there are three main sets of data that need to be managed in an IDA database: participant information, participant account information and match fund information. A third-party account manager may be a resource to reduce the amount of database administration required of the locally-run IDA program.

What system will be used to manage the programs?

Who should keep track of the IDA program data? A discussion of MIS IDA functionality and the role of each of the stakeholders leads to the conclusion that account management is a task that may best be handled by financial institutions rather than the CBO, and that the CBO is best suited to track participant and program information.

One of the features of MIS IDA is its account management function to calculate the match dollars associated with participant deposits. This is not a function financial institutions were originally able to provide. However, recent interest from financial institutions and other investment firms has led to the possibility of a third scenario for managing IDAs on a large scale. The resulting three options to consider for data management are:
- Scenario one – Use current version of MIS IDA or comparable system
- Scenario two – Develop web-based version of MIS IDA or comparable system
- Scenario three – Develop third-party account management

Scenario One – Use current version of MIS IDA or comparable system

To our knowledge, there is at this writing no commercial MIS product currently commercially available that provides IDA program management other than MIS IDA. A product is being developed by PeopleWorks and SPSS, Inc., but the system has not yet been completed. Estimated time for completion is May 2001 with beta testing for several months thereafter. The

product will initially be available only to AFIA grantees. The first version will be a Windows-based product with a web-based product to be developed in the next year. Obtaining account statement data for this product will include downloading data from a commercially available accounting system (such as Quicken) or receiving an ascii text file from the affiliated financial institution. PeopleWorks presented a design of this system at the MIS Technology session at the National IDA Learning Conference.

Because there is not a comparable existing system at this time, Scenario one would be to continue to provide MIS IDA in her current capacity, with possibly minor maintenance and improvements.

MIS IDA continues to support the information system needs of CBOs in running their IDA programs. MIS IDA can effectively support single workstation or local area network environments where all data is being entered into one copy of MIS IDA for one or multiple sites. The system can effectively support programs that are manually entering or electronically importing account statements. Where the participant number is higher (e.g. greater than 100 account holders), it would behoove the organization to work with their partnering financial institution to utilize the electronic import function.

However, MIS IDA was originally intended to be a research instrument, and technology and IDA program evolution present new challenges. Current limitations of MIS IDA include the following:

Microsoft Access functionality is maximized. At the time of its completed development, the developers of MIS IDA recognized that Microsoft Access, upon which the application is based, was maximized in terms of its capacity to add functionality. If any major changes were to be made, it was recommended that MIS IDA be migrated to another platform and written in another software coding language (such as Visual Basic).

MIS IDA is platform-dependent. Because MIS IDA was built on the Microsoft software platform, updates to Microsoft products impact the MIS IDA application. For example, we have discovered file conflicts with both older and newer versions of Microsoft Internet Explorer and the new version of Windows (2000). These have been resolved but it is likely that newer versions of Microsoft products will create additional compatibility issues.

Maintenance of the current version of MIS IDA will be ongoing because of this platform dependence but CSD cannot indefinitely guarantee compatibility of MIS IDA with all future versions of Microsoft software. Up to now, CSD has invested the resources to provide for modifications necessary to keep up with recent versions of the platforms upon which MIS IDA is based, i.e. Microsoft® Windows 95/97/2000/NT, and Microsoft® Access 97/2000.

MIS IDA has limited error-checking. MIS IDA's flexibility in data entry has a downside in potential lack of integrity. It was believed that too many edit checks on individual data entry fields might result in user frustration and reduced use of the system. CSD has subsequently created a supplementary quality control product called MIS IDA Quality Control (MIS IDA QC) that has been used by sites doing evaluation to assist in data cleaning. MIS IDA QC has gone

through several revisions and the most recent version will soon be made available to all MIS IDA users.

MIS IDA has limited wide-area network capability. MIS IDA can be used in a local area network environment (computers directly connected to a central server housing the shared data file) but is limited in its ability to serve a wide-area network (remote access via modem dial-up or internet to a central server). One of the ADD sites (CAPTC in Tulsa, OK) has configured a terminal server environment that allows remote access to view data on the central server but they have not undertaken data entry from the remote location. CAPTC will conduct further testing of this capability.

Wide-area network capability is an issue that has arisen from the expansion of the IDA field in multi-site administration. MIS IDA provides this capability but the data collection process can be cumbersome. For organizations that are doing centralized data collection (maintaining one MIS IDA database), satellite organizations must send in data to be entered into MIS IDA. This process is time-consuming and subject to data error. For programs that have MIS IDA in the satellite offices, resources for database administration and data collection must be duplicated at each office, raising the cost of IDA program implementation. In addition, satellite office data must be submitted to a central organization's MIS IDA database for aggregate reporting, and the process of importing data at each data collection point is also time-consuming.

IDA program expansion may reduce system performance. As the number of participants and affiliated program sites increases for a given IDA program, use of MIS IDA may become more cumbersome. Although the performance threshold is unknown, programs that manage data for more than 1000 participants in a single version of MIS IDA may experience reduced performance. It is known that the local area network version is twice as slow as the stand-alone version.

Feature	Advantage	Disadvantage
Localized data management	Local control	Cumbersome for multi-site administration; requires expanded reporting
Technical support/training	CSD team understands IDA program design	None
Developed on Microsoft platform	Integrated software products to spool data	Microsoft software products require patch updates and create incompatibilities with MIS IDA
Three-in-one functionality (account management, program administration, evaluation)	Comprehensive reporting capability	Some data fields only used by researchers for evaluation. Access' capacity has been maximized.

Scenario Two – Develop a web-based version of MIS IDA

A web-based MIS IDA potentially resolves the issues identified by the Feasibility Study Team: wide-area network functionality, reduced data administration, modular data entry, real-time access to IDA account information, and expanded reporting capability. In addition, this scenario facilitates multi-site administration and reduces the level of computer resources (personnel skill set and computer hardware) needed at every organization running an IDA program.

Web management location. A "MIS IDA Web" system would immediately satisfy the need for wide-area network connectivity but would require a central administrator to maintain the centralized database and manage data access to the database. A question to consider is whether to implement a web-based system on a regional or national level. Because a web server environment requires more sophisticated technical resources (see Appendix B Web Design), reducing the amount of redundancy in the field will lower program administration costs. Ideally, a web-based system could be implemented to house and manage data for IDA programs nationwide.

A modular approach to data entry would be incorporated into the new system design. However, this would increase the cost of migrating MIS IDA to a web-based version since the forms would need to be significantly modified.

Account management. The presence of open standards such as XML, and CMH may facilitate real-time access to account information at financial institutions. However, some computer systems at financial institutions are not as sophisticated as others are, and real-time access may be limited to those that can offer connectivity. For those that cannot, the current process of manually or electronically entering most recent statement information may be required.

Reporting. Increased numbers and variation in funding sources have introduced new reporting requirements. For those that can be standardized, new reports should be created to support those standards. For unique requirements, users need flexibility in creating custom reports. Current feedback is that custom reporting is difficult because of the complexity of the database. In addition, users would like to be able to report information easily via charts and graphs. However, it will be difficult to create ad hoc (user-customized) reports using a web interface if the standard options are not currently available in the report menu. A new system should incorporate as many of the known required reporting formats as is possible. To create custom reports, users will have to download data to their favorite reporting tool.

Sample web implementation. What would a web-based MIS IDA look like? First, there would be a central administrator. The central administrator would maintain the server physically located at the central facility and would provide information to satellite sites on how to access it.. Satellite sites would not be required to maintain the data at their location but would be able to enter data via forms and extract information via standard reports.

At a satellite site, the user would open up the Web browser and go to the designated central administrator's web site for IDA management. The web site would prompt for a User Id and Password to sign into the system. Upon access into the system, the user would see a set of menu functions much like the current MIS IDA. The user would select a function for data entry or reporting.

If selecting data entry, another menu would appear to enter data for one of the content areas described in the previous section. Upon entry of data into the forms, the data would be sent to the database at the central server, checked for errors, then saved in the database. If there were errors, the form with the data would be redisplayed highlighting the incorrect or missing information.

If selecting a report, a menu would appear to select a particular report with options to sort and group by various filters. In addition, an option would allow data to be downloaded to a spreadsheet for customized reporting.

A design issue for this web-based structure will involve location and control of the match dollars. If each satellite office were managing their own match accounts at a local financial institution, then this system would be used only as a centralized information collection mechanism for each satellite office. The advantage to each satellite office would be the reduction in database administration.

If the central administrator will also be the match account manager with funds held centrally, then additional authorizations should be programmed into the system to track match dollars disbursement. These fields have been included in the Funding Partner/Match Management section above. When a matched withdrawal occurs, it would be important to figure out a mechanism for authorizing payout from the central site to the satellite site or designated vendor.

Feature	Advantage	Disadvantage
Development effort	Creates state-of-the art IDA MIS	Expensive and labor-intensive
Web platform	Eases multi-site administration	Web architecture adds technical complexity for the organization who is the host

Scenario Three – Develop third-party account management

Federal legislation has been introduced to assist financial institutions in supporting IDAs. Other countries' governments are also looking at IDAs as a strategic asset-based policy. If such legislation passes in the United States, there is potential to offer IDAs to every individual in the country who is at 200% of poverty or less. IDAs may become a standardized, multi-billion dollar industry. To manage this large-scale business, third-party account management may become the most resource-efficient system of the future. In surveying the industry, two potential system candidates arise.

Develop web-based 401(k) modified system ("OnLine IDA"). A prototype has been developed by Harvard Business School in partnership with D2D Fund and SunGard for a modified 401k system to handle account management for IDAs. Although the prototype looks promising, there are issues to be addressed such as the role of the CBO versus the role of third-party account manager. For example, the CBO may want a more comprehensive system of tracking on participant information than is cost-efficient for this type of system.

An accounting issue already identified is the field's use of multiple funding sources and requirements for tracking these funds. The modified 401k system has more restrictions on tracking multiple funding sources. Also, there is not yet a mechanism identified for authorizing matched withdrawals.

Feature	Advantage	Disadvantage
Account management by third-party	Account management handled by "experts;" Real-time access to account information	Less flexibility in program design. May not be able to use local, community-based financial institution.
Web platform	Eases field administration; system administration handled by "experts"	Limited standard reports. Customized reporting must be done locally.

Peter Tufano of the Harvard Business School presented his "to-scale" ideas during a plenary session at the National IDA Learning Conference 2001, and Jeff Zinsmeyer of D2D Fund presented a more detailed design of this plan at one of the conference sessions entitled "MIS Technology."

A prototype of the system was developed and presented to Sungard in January 2001; Sungard confirmed interest and willingness to assist in the development effort. The prototype will be modified but the initial version can be seen on the web at:
http://www.mba2001.hbs.edu/jcoleman/MISIDA/index.htm.

Recognizing the concerns expressed by CBOs to track as much information as is cost-feasible, the prototype has included all fields specified as "critical" in this feasibility study as well as some additional "user-definable" fields that may be defined specific to a particular program. To maximize use of the data, the system should also include a flexible database query system for reporting and the ability to download data into a PC-based database or spreadsheet.

Develop modified Electronic Benefits Transfer (EBT). There has been some discussion of this option but no prototype has been developed thus far. The issues involved with EBT include multi-funding source management and non-standard systems (EBT systems are developed state by state and not yet used in every state). CSD has been discussing this option with Dan Nemec of Citicorp, who has expressed interest in pursuing this effort. An EBT system might also complement the OnLine IDA model.

Projected Market Potential

A total of 40 states that have state-supported IDA programs, legislation, or other statewide savings initiatives, of which 32 are currently operating an IDA program. MIS IDA is being used in 26 of these states (*IDA State Policy Guide;* Edwards and Rist, 2001). A concern for migrating to a new system will be the costs already invested by organizations in purchasing MIS IDA, technical support, training, and time.

Estimated cost/availability for each scenario

Scenario One. No additional cost to current users for MIS IDA. Updates are provided free by CSD to those who purchase technical support.

An alternative system in development by Peopleworks and SPSS will cost non-AFIA grantees approximately $3,000, or if the SPSS product is not purchased with it, the price will be approximately $1,500 (quoted by John Tabori of Peopleworks at the IDA Learning Conference 2001).

Scenario Two. Costs received from software companies to convert MIS IDA to a web-based system ranged from $68,000 to $250,000. The cost does not include any additional functionality than currently exists in MIS IDA. It is likely that the cost is understated and that $100,000 would be more realistic on the low-end. Some of the development costs would be passed on to the user. Estimated development time would be six months to one year.

The PeopleWorks/SPSS web-based product is to be developed in the next year (after the Windows-based product is complete). User costs are unknown.

Scenario Three. Funding for much of the development is assured from SunGard, but not funding for ongoing technical assistance.

Costs to the end-user are unknown but the hope is that the system will pay for itself over time. A beta version is expected to be complete by August 2001 with two sites of 15 participants each selected for beta testing. In approximately one year, the 401k modified system may be available for use by other programs.

CSD Recommendations

CSD recommends that resources be focused on systems that can support IDAs moving to scale such as the D2D Fund's 401(k) modified system. CSD supports options to develop more and better IDA management systems but it is not clear that the PeopleWorks/SPSS product will provide substantial value-added features beyond the current MIS IDA capability unless they develop a web-based product and offer real-time account management. Neither MIS IDA nor the PeopleWorks/SPSS products provide the functionality to manage IDAs on a large scale. The development timeline of PeopleWorks/SPSS and D2D Fund's "Online IDA" suggests that the D2D Fund may meet the system design goals of the users and provide scalability within the next year.

What does this mean to the local CBO running an IDA program? The most likely outcome for IDA program management is that there will be various types of IDA programs with different MIS needs. Below are a number of likely scenarios.

1. A CBO wants to use local resources and local partners to run its IDA program, including a local financial institution. For this implementation, the CBO may use MIS IDA or comparable software for program management.
2. A CBO is part of AFIA and is required to use the PeopleWorks/SPSS software.

3. A CBO is part of a regional IDA program with multiple satellite offices. The program chooses to use local resources and financial institutions that are not partners with the national D2D fund account management. For this implementation, the CBO may use MIS IDA or comparable software for program management.
4. A CBO may want to provide case management but not be involved with account management. For this purpose, the CBO may sign up as a partner with the D2D Fund and track participants and accounts through the large-scale 401(k) modified system.
5. A CBO may have low skills in financial accounting and database management and therefore choose to sign up as a partner with the D2D Fund and track participants and accounts through the large-scale 401(k) modified system.
6. A CBO may be using MIS IDA or comparable system but grow to such capacity that they will migrate to the D2D Fund and track participants and accounts through the large-scale 401(k) modified system. For example, CAPTC prepares taxes for 12,000 clients per year. If all of the clients became eligible for IDAs, CAPTC might consider moving to a larger-scale system such as the D2D Fund.
7. If the *Savings for Working Families Act* legislation passes, some IDA-eligible participants may not have an affiliation with a CBO, and therefore could sign up directly for an IDA through the large-scale 401(k) modified system.

Given the variation in program implementation, MIS IDA will continue in its current capacity to support local and regional implementations. If the PeopleWorks/SPSS product proves to be useful to the field, it may partially or wholly replace MIS IDA. If the IDA concept grows to capacity, then systems must be developed to support such large-scale efforts. The D2D Fund provides a concept for such growth and migration.

Summary and Outlook

Where will the IDA market be in 2 years, 5 years, and 10 years?

The IDA market will exist for at least the next 5 years as currently implemented due to federal projects currently funded. But the market is ever-changing and proposed legislation could impact the future design and management of IDAs. Legislation is proposed to provide benefits to financial institutions to become involved in IDA programs. There are also ideas about attaching IDAs to the food stamp EBT system, and suggestions to utilize the Federal Thrift Savings Plan structure in support of children's savings accounts or retirement accounts. It is very likely that IDAs or some form of a matched savings policy will be available in the future but the management infrastructure is unknown. Most likely, there will be multiple forms of IDA programs that will require multiple data management structures.

What role will each stakeholder play in management of the programs?

The role of each stakeholder will depend on the type of IDA program implemented. As outlined above, there will likely be multiple forms of IDA programs and CBOs will be more or less heavily involved in the management of IDA programs depending on the funding stream. If IDAs continue to be a program that requires CBOs to track participants and authorize match use, then

the CBO will continue to track participant and account information. The only question is where the data processing occurs and if the account management function is handled by a third-party financial organization.

What system will be used to manage the programs?

In the short run, MIS IDA continues to be the only commercially available software. PeopleWorks/SPSS software is expected to be commercially available sometime later this year (2001) though there is reason to wonder whether the system will meet the system design goals outlined by the Feasibility Study Team. The D2D Fund system is expected to be available in early 2002. For 2002 and beyond, some IDA programs may migrate to larger centralized systems such as the D2D fund, and/or other federal or state government-based systems (EBT, EFT, or Thrift Savings Plan).

How will data be reported, and by whom?

Data will be reported via standard reports provided by the system being used. Custom reporting can also be undertaken by organizations using their own reporting tool(s).

Where does MIS IDA fit in this picture?

It is anticipated that MIS IDA will continue to be used in its present form over the next couple of years. Current MIS IDA users will have the option to continue using MIS IDA or select another IDA management software tool. Those who are interested in large-scale systems such as the 401k-modified system will migrate to that system once it becomes available.

The remaining question is whether MIS IDA should be further developed to provide web-based IDA management, and potentially real-time access to financial account information. A review of the HHS/PeopleWorks software once it is available as well as attention to the ongoing development efforts of "OnLine IDA" may help to answer this question within the next few months.

Over the last few years, MIS IDA has been useful for reporting data from the American Dream Demonstration and in providing reporting capability to hundreds of IDA programs. Although CSD has decided that it will not be involved in a MIS IDA re-development effort (software development is not our core interest), this does not preclude that a re-development may serve the IDA field, and that another interested organization might take on the task. CSD is open to discussions about transferring the MIS IDA technology to those equally committed to serving the IDA community.

Appendix A
Feasibility Study Team

Name	Organization
Pam Seagle	Bank of America
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Dan Nemec	Citigroup
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Michael Sherraden	CSD
Jeff Zinsmeyer	D2D Fund
Peter Tufano	Harvard Business School
Jason Hanleybrown	Harvard Business School
Jason Friedman	ISED
George Bailey	ISED
Tim Flacke	Kennedy School
Ross Baker	Missouri Systems, Inc
Shirley Fasching	Ramsey Action Programs
David Gottschall	Rocky Mountain Mutual Housing
Jennifer Tescher	Shorebank

Appendix B
Web Design

Simplified Web Application Site
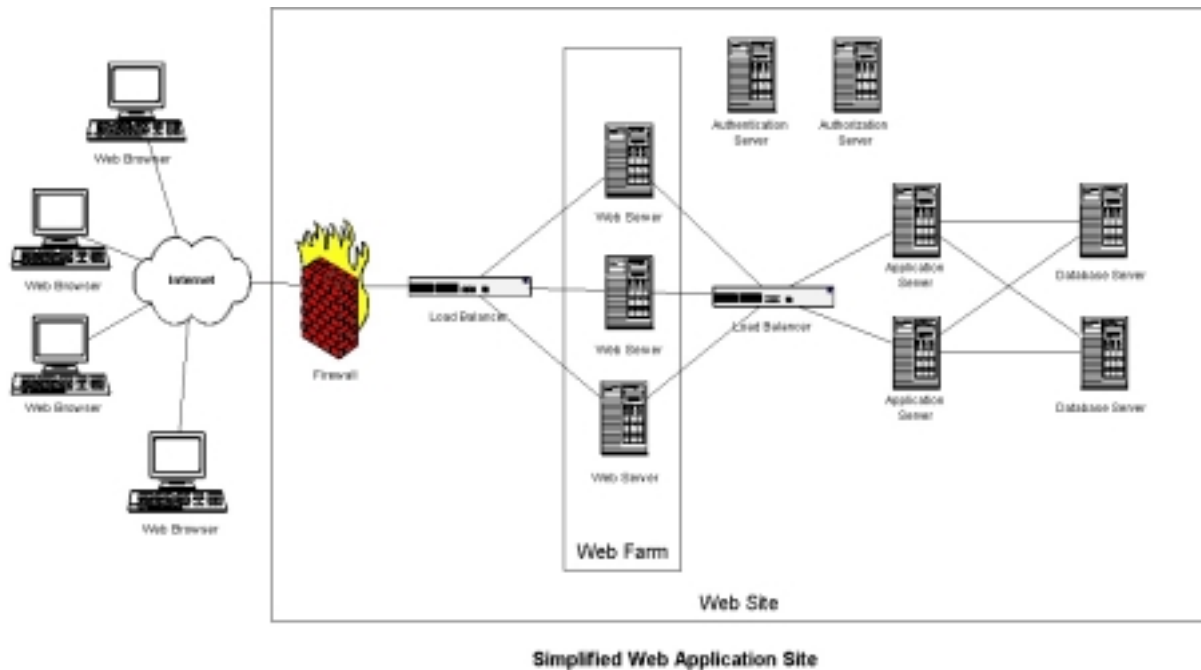
Web Architecture

Firewall. The firewall helps to screen out unwanted traffic from entering the Web application.

Encryption server. The encryption server can accelerate the process of encryption and decryption on the Web server side by providing dedicated hardware for the task. However, the browser still must encrypt and decrypt on the user's end. Therefore, it is best to reserve encryption technology for information that is highly sensitive.

Load balancer. Helps to distribute the load on all Web servers that make up the Web farm or application servers.

Web server. Serves up Web pages to the browser upon request. Some components that are called by Web pages also run on the Web server.

Authentication server. The authentication server allows or denies access to a Web site based on a user's credentials. The credentials could be as simple as a user ID and password. Or, credentials could involve certificate exchange.

Authorization server. The authorization server allows, restricts, or denies portions of the application to a user based on permissions given to the user by an administrator.

Application server. The application server is a dedicated server for hosting components that would hamper operation of the Web server if they were put on the same box as the Web server. The application server may be physically collocated with the Web site. Or, the application server may be halfway around the world.

Database server. The Web application may be served by one or more databases. The database may be physically collocated with the Web site. Or, the database may be halfway around the world - accessed by a remote component.

Security. Security involves:
1. Authentication to ensure that the user is who he/she says he/she is.
2. Authorization to ensure that the user only accesses parts of the application and data to which they have permission
3. Encryptian to ensure that only the intended audience is able to read the information

Web Architecture Walk-through

The user opens a Web browser and specifies the URL of the IDA application. The firewall allows the HTTP traffic into the Web server. The request is routed to one of the Web servers in the Web farm by the load balancer. The load balancer monitors the current load on each Web server so it can intelligently direct each request to the least utilized server. Because the user has not been authenticated, the Web server returns a login page to the user under HTTPS (SSL 128 bit encryption).

SSL encryption protects all information from being compromised if it should be intercepted between the Web Site and the user's browser. From this point forward all information can be SSL encrypted. However, there is always a performance penalty to pay for encryption, therefore encryption is usually reserved for sensitive information only.

The user specifies a user ID and password on the login page and submits the information to the IDA Web site. Once again the firewall allows the HTTPS traffic in and the load balancer finds the least utilized Web server. The Web server handles the login response by submitting the information to the authentication server for validation. If the information is valid, the authentication server generates a session ID and this session ID is returned to the browser as a cookie to be stored on the user's workstation. Each time the user invokes a new URL during this session, the session ID will be passed into the Web site along with the URL request so the Web site will know that the user has already authenticated.

At this point the user has clearance to invoke pages of the IDA application, the first being the default page of the requested URL. Before presenting the initial page, the IDA application

checks with the authorization server to determine what portions of the application should be enabled for the logged in user. This usually translates to some menu items being enabled and other menu items being disabled. The page, with only the authorized mechanisms, is then sent to the user's browser.

The authorization server provides the means to dynamically configure the application for a user or group of users just by changing a few attributes in an LDAP (Light Directory Application Protocol) structure or database. For example, one user may have a whole set of forms (pages) made available to them via the menus just by adding them to a different permission group. In addition, the same form may take on different characteristics for one user over another. For example, the same form may allow edit of fields for one user but another user may only be given read privileges.

Every additional request from the browser must:
- Pass the scrutiny of the firewall
- Be checked for a valid session ID by the authentication server
- Be encrypted in SSL when required by the IDA application
- Be allowed by the authorization server

Web pages requiring interaction with a database do so via communication with components on the Web server or remote components on an application server. The application server may be local to the Web site. Or, the application server may be remotely talked to via an XML based protocol such as SOAP (Simple Object Access Protocol). Different component methods are invoked to retrieve and insert data from and into the database.

For canned reports the Web server interacts with a report server. The report server interacts with a database(s) to generate the report. The report can then be translated into a ".pdf" file which is sent back to the browser for presentation, printing, and/or saving for future reference. These reports can include text as well as graphics such as bar and pie charts.

Scalability

Methods to scale up (handle more users) include the following:
- Introduce more Web servers into the Web farm.
- Incorporate additional processors in each server
- Add more application servers
- Partition the database and introduce additional database servers