



**Programa de
Fortalecimiento de
las Microfinanzas
Rurales (FOMIR/DAI)**

**INFORMATION
TECHNOLOGY
UNIT**

**Final
Report**

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Development *Alternatives*, Inc.

7250 Woodmont Avenue, Suite 200, Bethesda, Maryland 20814
Tel: (301) 718-8699 Fax: (301) 718-7968 Email: info@dai.com

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IT Unit Activities and Lessons Learned from Projects executed with other Institutions

I. IT Unit Activities

The main activities performed regarding the support provided by FOMIR-DAI Information Technology (IT) Unit to other institutions (that is, besides the Cooperatives project) were as follows:

- Creation of a document on the organizational design for the IT department with job description, profiles and responsibilities;
- Creation of a document on hardware and software (HW and SW) selection process;
- Seminars and workshops on:
 1. IT Department
 2. Systems Selection and Evaluation Process
 3. Management Information System
- Team evaluation and selection process;
Preparation and teaching of technical courses to IT staff, system and applications users;
- Creation of a base manual for the implementation of communications networks;
- Creation of a base manual for the implementation of security related to IT area;
- Evaluation of installed equipment, improvement processes, and acquisition;
- Execution of institutions' equipment acquisition and installation processes.

II. General Support

A. Importance of a Good Organization and Structure

From the beginning, it was crucial for each one of the institutions that would get IT support, to be aware of the importance of having a good IT organization and structure, starting with the physical location, staff, equipment, configuration and structuring. And so there was a need to instruct the people involved in the decision making as well as IT staff on these topics; therefore, FOMIR held three workshops that helped focus better on the IT needs of each institution.

Computers – their Components, Importance, and Networks

The purpose of this workshop was to instruct on the types of hardware and software that are available, their functionality and importance; among the topics addressed are the following:

- Types of RAM memory available, their operation and importance;
- Types of PC watches and speed, and their operation and importance;
- Hard disk operation and measurements;
- The importance of having installed the best software on the PC;
- Peripherals and their operation.

For more details refer to Annex A and B, with the presentations “Computers and their components” and “Networks.”

IT Department Policies and Procedures

The purpose of this workshop was to instruct on IT Department’s policies, responsibilities, organizations, functions, positions, and investment, which is very important for an optimal performance, and the necessary scope within the institution. For more details refer to Annex C, with the presentation “Information Technology Department”.

Network Configuration and Management

The purpose of this workshop was to instruct on best practices on network management and configuration, and the most important topics were:

- System management;
- Network design;
- Information backups and retrieval;
- Domain configuration;
- TCP/IP protocols.

For more details refer to Annex D with the presentation “Network support and maintenance workshop.”

B. Information Systems Development and Structure

Equipment Evaluation

After making the institutions aware of the importance of having good equipment and structures, we then went on to evaluate the equipment already installed for changes and updating. Likewise, we evaluated wiring, peripherals, hubs, modems, network cards, etc.

With the results of the evaluation, following is the purchasing procedure:

- Prepare a description chart for equipment and software to be purchased, including quantities and estimated costs for each item, which can be obtained from the Internet.
- Equipment configuration has to be specified.
- Send it to IT Manager at DAI-Bethesda for review and approval.
- The IT Manager at DAI-Bethesda prepares a report on the hardware and software to be purchased including the configurations, and annexing the specifications chart for the equipment to be bought and a letter to the USAID/Washington IRM department for the equipment purchase approval.
- Once the purchase is approved, DAI-Bethesda is responsible for buying and shipping the requested items.

For more details, refer to Annexes E, F and G: Description chart for purchase of equipment; preparation of configuration reports DAI/Bethesda Manager; and letter to USAID/Washington.

Preparation of Installation and Configuration Designs

While waiting for the equipment to arrive and be delivered, the design and phases for each one of the institutions were prepared, which would be executed during the remaining three years of life of the FOMIR project. Following is the detail of the phases:

- **Phase I**, installation and configuration of equipment at each office.
- **Phase II**, installation and configuration of LAN Modem or Modem at the different agencies to enable direct communication and sending of information via dial-up connection; the information would start to migrate if the servers' operating system is updated.
- **Phase III**, communications will be upgraded through the use of a direct line via Internet with a Private Virtual Network.
- **Phase IV**, servers and local networks will be changed, from working with a LAN to work with a domain, a WAN, and an Internet infrastructure that would provide security to each agency's channels.

For more details, refer to Annexes H and I: The phases at each one of the institutions, and the designs at each one of the institutions.

Equipment Delivery

The equipment is properly classified when it arrives at the offices and an inventory is prepared per institution; also, a work plan is drawn for their configuration. It is worth mentioning that the equipment is not delivered unless the place for installation is properly equipped, physically as well as environmentally.

A "Reception Minute" is prepared at delivery, which includes the name of the institution, number of contract, delivery date, stating that is being delivered to the institution and including delivery location and the name of the person who actually receives it.

A chart specifying the name of the institution, delivery date, equipment delivered, serial number, unit and total cost, is prepared when the delivery is completed.

For more details, refer to Annexes J and K: Sample delivery minute and sample equipment data chart.

C. Organization and Positions at IT Department

The IT department must be well organized, both physically as well as the human resource; it must also have well defined policies and positions for each area and posts within the department, for its proper operation and understanding of each one of the tasks. A workshop was held with the participation of the institutions for the purpose of

making them aware of the importance of a good organization, as well as to help them obtain it according to their financial capability. Also, visits were made to IT departments at each institution to assess the staff already working there and to analyze the need for changes of staff and positions in order to be able to define the proper job profiles. For more details, refer to Annexes: Organization of the IT department of an institution; Organization of the IT department; Job description for each IT area position.

D. Inventories and Manuals

By helping better organize the IT department, the people from FORMIR IT unit realized that only one of the non-banking institutions had adequate inventory of equipment and the required manuals. Therefore, the importance and aid of having those inventories and manuals was assessed.

As a result, inventories were prepared at each office at the institutions to include the most relevant data of each piece of equipment, so it would be easy to locate the equipment at the moment of making changes and to update the inventory when recording the changes performed. Likewise, the importance of having manuals was also taken into account, and which were:

- Networks' Manual. This manual has all the information about how the server has been configured for networking with all users, and network managers use it for quick access to the information they require about configurations and file search.
- User's Manual. This manual will aid all users to solve simple problems with their computers, and also to work with application software such as Word, Excel, and Power Point.
- Security Manual. This manual contains all security policies for networks and information systems, and also provides aid when preparing such policies at the institution.

For more details refer to Annexes L and M: Equipment inventory sheet sample and samples of all manuals.

E. Training Program

A need rose to train the staff responsible for managing the software after so many application software and operating systems updates were performed at the institutions, to improve their performance and knowledge of them. Certain steps have to be followed in order to perform the training, and they are as follows:

- Decide the training to be performed;
- Decide along with the institutions' managers about certain policies to be observed in order to obtain the commitment from trainees to study the material and to pass the exam to be given;
- Obtain three quotes from training organizations;
- Prepare the terms of reference for AID to approve the training;

- Once the terms of reference have been approved, advise the trainees about the training schedule and place.
- Hire the instructor and review grades and trainings' evaluation.

III. Support to Specific Institutions in their Systems Development

A. AMC: Software Customization and Formulation of a System Maintenance Strategy

AMC's original project, executed without FOMIR's support, had to be aborted at the moment it was implemented because it did not comply with the users' expected requirements and the lack of operation of the system's modules. In AMC's case, FOMIR's role consisted in managing and providing support for the project's *remaking* of the following aspects: design, definition, programming, migration, tests, and implementation of the new information systems for the institution. Afterwards, plans relating to the following were prepared:

- IT department organization with definition of positions, responsibilities, profiles;
- Telecommunications networks (agencies interconnection);
- Training plan and execution for IT staff;
- Communications and security manual implementation;
- Upgrading plan for system in place;
- Training plan for new users;
- Upgrading plan for agencies' communications system as well as the main office's internal network;
- Preparation of preliminary plan for the development of:
 1. System maintenance,
 2. Equipment,
 3. Database manager,
 4. Programming language,
 5. Access security,
 6. Training plan on the technology installed,
 7. Relationship process with systems, equipment, and communications providers.

A situation observed in this instance was the need for highly trained staff due to the type of system, programming language, and database manager (Oracle). This type of database manager and technology implemented requires the assistance of staff capable of intoning the database. This staff is not available in the area, and it has to be brought from the capital city increasing the costs. The type of system acquired and the technology it involves makes the institution highly dependable on the supplier for maintenance, corrections and upgrades. In addition, the supplier is abroad and requires specialized staff knowledgeable of the product as well as of the maintenance technology.

Lesson: Thoroughly analyze requirements and availability of qualified staff needed to develop, maintain and use the system, besides the dependence on the supplier, before choosing a system.

B. FJND: Support for Software Development

The activities performed with FJND involved the evaluation of the internal development that was being performed by the institution, and to make recommendations both in the programming language area as well as to meet system's requirements providing own staff and/or outsourced.

Recruiting, evaluation, selection and negotiation processes were executed, both for staff as well as with the companies that would perform the IT tasks still pending regarding the main system as well as the remaining modules. Likewise, an evaluation was performed and recommendations were made regarding the agencies and main office interconnection. Additionally, the institution's equipment was assessed and recommendations were made regarding upgrades and updates for it. A follow-up was performed of the development and implementation process for the newly acquired modules as well as of the work to be performed by the company hired to that effect.

A situation observed in this instance was the lack of local language knowledgeable and experienced staff, to the extent that the system development project suffered a major delay. Regarding the company hired to complete and develop additional modules, it lacked the organizational and economic capability to perform the work at this institution, and this resulted in considerable delay in the delivery of the products. It is worth mentioning the lack of a project head from the start, which resulted in the above mentioned situations.

Lesson: The in-house development of an information system is very sensitive and it requires highly trained staff, both in the system definition as well as in project schedule and management.

C. FUSAI and Integral: Support for the Selection, Hiring, Work Planning, and Completion of Topaz

The first activity performed with FUSAI-Integral consisted in the evaluation of the development process of the institution's new credit system, as a result the contract with the supplier was cancelled for non compliance with requirements, both of specifications as well as of project schedule.

The next activity consisted in the preparation of evaluation and selection procedures for a system that would meet the current and future requirements, as well as planning of activities, IT staff hiring, definition of required equipment, among others.

Management support was provided for the process of evaluation, selection and hiring for the new credit system. Afterwards, the decision was made to contract and integrate applications such as accounting and other modules to the main system. Work plans were established for the implementation of the new system, including definition activities for users requirement, training, data migration, tests, and, start up, as well as the implementation of a communications network between agencies and main office.

The implementation of the modules presented several difficulties due mainly to the absence of a definite head of the project, and that users and management participation in the definition of requirements was very low, resulting in delays and difficulties at the time of testing. The migration of data presented inconsistency problems due to a lack of verification and tally of the same.

During the first attempt to execute this project at FUSAI-Integral, the institution failed to recognize the importance of senior management involvement and that of the users in the system's definition and testing, the operational change, the project's management and administration, and the control of suppliers and of the products delivered. A considerable delay in the system's implementation process (of more than one year) was the result of these issues, and thus requiring additional support from the supplier regarding the definition of requirements, reprogramming of main processes and training on the use of the product for accounting users, adding to costs. Additionally, there was a need to provide additional management support by FOMIR/DAI for project review and control regarding topics such as the planning of a redefinition of requirements and reprogramming, operational reengineering, including the development of new manuals and training, data migration, definition of a pilot plan, and system implementation.

In addition to the issues referred above, it is worth mentioning that the project suffered the consequences of IT staff and users rotation. The institution exercised scarce control of the project with staff that was not 100% dedicated to the project, as well as the lack of IT staff, both in quality and quantity.

Lessons: This type of project entails, to a higher or lower extent, an operational change, that is, a reengineering in the institution's operations, staff, and management, that has to be taken into account from the start of the project in order to put in place the necessary measures. Otherwise, it means delays and resistance to change. Also, a total and strict control has to be in place regarding the intangibles that the supplier must deliver. Senior management participation and support is of vital importance, as well as the delegation of authority and decision making at the several management levels.

D. ASEI, CAM, Banco Salvadoreño and Banco Agrícola: Support for System Upgrading and Customization

ASEI: A general review of the system already installed (SIEM, acquired with Katalysis' resources and support) was performed at this institution, as well as of the difficulties faced due to its obsolescence in certain aspects and the need to manage the information with a database manager. These would be solved with the new version of the system, but the decision to execute the project to change and update the system in use took a long time to be made. As a result, the institution experienced a period in which the data gathering and information management was slow and time and cost consuming. If the institution had executed the project before, it would have enjoyed the benefits of a more efficient, with lower cost and better response time, portfolio management. Furthermore, FOMIR provided support to ASEI in the definition of the position of IT Coordinator,

identification, selection, and training of the candidate. Also, it provided support in the preparation of all the manuals, systems review, and definition and development of an integral training plan for the users of the new systems at ASEI, since the institution previously lacked information systems and most of the staff was not updated in the use of computers, programs, and applications.

CAM: A general review of the system already installed (SIEM, and ASEI) was performed at this institution, as well as of the difficulties faced due to its obsolescence in certain aspects and the need to manage the information with a database manager. These would be solved with the new version of the system (as in ASEI), but the decision to execute the project to change and update the system in use took a long time to be made due to the change in the institution's management. FOMIR also participated in the evaluation of equipment and systems requirements, based on the IT strategic plan prepared to that effect. Additionally, FOMIR participated in the preparation of an equipment acquisition plan and the installation, as well as the systems, which mainly comprised the implementation of the new version with the use of a database, *scanner*, and servers to electronically capture and store customers' files. The change in management resulted in the delay of plans, and also two IT plans had to be prepared.

BANCO SALVADOREÑO: The most relevant IT topics that FOMIR addressed with the Bank were the following:

- i) To work with the IT department on the definition of report needs, data base, and the feasibility of having information available both at management level as well as at micro-loan officials level in the Bank's online system.
- ii) Analyze, along with the Bank's staff, the alternatives for developing a micro-loan module, acquire a system and interconnect it to the Bank's central system or acquire or develop a module on a platform independent from the Bank.
- iii) Define with users all data and reports requirements for management and loan officials portfolio administration, and performance of staff involved.

Although in the end the main objectives were achieved, the project implementation was delayed mainly due to the following factors:

- i) Lack of support from the Bank's senior management.
- ii) Lack of interest and support from the IT department for the solution of problems related with the systems and the database.
- iii) Lack of qualified IT staff to be assigned to the project.
- iv) Low management ability at department level to support the project.
- v) Few equipment available to meet the needs in the main office as well as in agencies for the final and total implementation of the micro loan module.

BANCO AGRICOLA: The most relevant IT topics that FOMIR addressed with the Bank were the following:

- i) To work with the IT department on the definition of report needs, and the feasibility of having information available both at management level as well as at MyPE bankers level in the Bank's online system.

- ii) Analyze the alternatives for developing a micro-loan module with the Bank's staff, acquire a system and interconnect it to the Bank's central system or acquire or develop a module on a platform independent from the Bank
- iii) Define with users all data and reports requirements for management and Bankers portfolio administration and performance of staff involved.
- iv) Support the MyPE Department in the preparation of a process design for application management as well as the evaluation of the tools that could possibly be used for its development, using the Bank's Bac-office system and the communications infrastructure between the agencies and headquarters.
- v) This process offered the possibility of incorporating a *credit rating or scoring* sub-module, as well as the capturing of information that would not need to be transcribed again later at headquarters.
- vi) Supplementary to the benefits mentioned above, a swift and centralized system could be in place for loan approval and granting and with total control over the process.
- vii) Knowledge of the status of the application and/or the actions needed to be taken as the situation is presented.
- viii) Control of portfolio management on its most important aspects, both for the MyPE Department as well as for the Bank.

Following are some of the difficulties experienced:

- i) Lack of total and continued support from the Bank's senior management in the project;
- ii) Lack of support for and interest on the project by the IT department;
- iii) Slowness in the respective decision making process due to the issues mentioned above and the Bank's IT priorities (e.g. consumption loans) whose solutions could eventually be used as the basis for a MyPE's applications management system.

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