



IT@BASIX



Successes and Failures

A Case Study



Prasanth V. Regy*

Introduction

BASIX is a new generation livelihood promotion institution established in 1996, working with over 190,000 poor households in 44 districts and eight states across India. Its mission is:

To promote a large number of sustainable livelihoods, including for the rural poor and women, through the provision of financial services and technical assistance in an integrated manner. BASIX will strive to yield a competitive rate of return to its investors so as to be able to access mainstream capital and human resources on a continuous basis.

In pursuit of its complex mission, BASIX has had to experiment and innovate constantly. This complexity is reflected in the corporate structure of BASIX, which comprises a range of companies to address a diverse set of tasks. Bhartiya Samruddhi Finance Ltd (BSFL) is by far the largest company in the group. As of January 2006, it had disbursed more than Rs. 100 crore to more than 1.4 lakh active borrowers. The performing assets were 97.3%. In addition to credit, BSFL also provides micro-insurance services, such as insurance for life, health, rainfall and livestock. It provides agricultural and business development services, as well as institutional development services to them. The services that BSFL has offered have evolved over the past 9 years. Right from the beginning, the organization was aware that appropriate exploitation of IT was essential for (i) achieving efficient operations (ii) scaling up our operations (iii) better decision making abilities (iv) better monitoring, reducing the chances of fraud, and (v) managing product complexity.

Towards this end, it has always been Basix' efforts to use IT solutions to the optimum extent. This includes both hardware and software. In addition to serving its own needs, some of the software that we have developed has also been useful to serve the sector at large. We have also experimented with various hardware products that can enable us to increase our outreach. In this article, we shall examine some of the products and initiatives undertaken by Basix, and the learnings that they hold for the sector.

* Executive, Basix, Hyderabad. This article is based on the presentation made by the author during the Seminar on "ICT for Rural Financial Services" held at CAB on March 6 and 7, 2006

Software - FAMIS

History, Successes and Issues

History : FAMIS is short for Financial Accounting and Management Information System. This was our first effort at a comprehensive solution to our accounting and management information needs and it served us from 1997 to 2005. It continues to serve 50 other MFIs at 110 installations. FAMIS was developed by our software partner based on our specifications. It was first developed on a Visual Basic/FoxPro/MS-DOS platform. After the release of the first version in 1997, several more versions were released, each adding to the functionality and robustness. At that time, there was no other software in the market which had the functionality needed by MFIs. Most MFIs used manually prepared charts to determine repayments. In addition to being laborious and error-prone, this reduced the flexibility of their products and prevented them from scaling up. From the beginning, Basix management conceived of FAMIS as a solution for the whole sector, not just for Basix.

Therefore, as a public good, FAMIS was developed under a Technical Assistance Contract, between Basix and the International Finance Corporation (IFC). In the year 2000, FAMIS was supplied to its first external user, ASSEFA. This version was named ASSEFAMIS and was installed in ASSEFA offices in Maharashtra, Rajasthan, Madhya Pradesh and Bihar. This involved not just providing the software, but also setting up the requisite infrastructure, including buying generators and UPS, as well as training the operators who would use it.

There were many MFIs which had a wider portfolio of products including savings and grants and required many new reports as well. Our analysts spent a lot of time on the field understanding their processes and

requirements and then converted them into software specifications that were passed on to the developer. This was our first experience in customising our software for external users. FAMIS was installed by a very large number of other MFIs. But every MFI had different lending methodologies and interest calculation methods. Other requirements like savings and grants were also integrated into FAMIS. The complexity quickly increased, till there were 10 different versions of FAMIS for 10 MFIs! This large number of versions obviously created several problems for us and so we decided to combine these different versions into one. This unified version was called FAMIS PLUS. This is the only version that is used today.

Successes : Today, FAMIS PLUS is a very mature and proven software, satisfying the requirements of 50 MFIs throughout India with practically no known issues. It runs on Windows and requires minimal maintenance and support. It is very rich in features, being able to support credit, savings and insurance. It has extremely rich reporting features, which have enabled our clients to track figures that were next to impossible to track earlier, leading to increased recoveries. Our years of customising it for different customers have ensured that it is highly configurable software, easily adaptable to any terminology, interest calculation method and lending/saving methodology.

Issues: FAMIS' main negative has to do with the database it uses – FoxPro. This database is not as robust as the other databases available and is not perceived very well today.

Delphix

History and Successes

History: As mentioned, the main problem with FAMIS was the database that it used. While it works very well for small MFIs, it could not keep up with the growth of Basix.. In the year 2000, inspired by the

information system employed by DID Canada, plans were laid for the creation of a new software. It drew heavily from our experience of creating FAMIS. In particular, it was based on the Oracle platform, which,

we expected, would be able to handle anything we could throw at it. The design of the new system was done in the year 2000 and development largely in 2001 by the same company who developed FAMIS. In 2002, we pilot tested it in three units, entering data in Delphix in parallel to FAMIS. However, there were several problems migrating data from FAMIS to Delphix. So there were several issues in the way of moving to Delphix completely. The pilot testing continued in the year 2003 and 2004, with seven more units taking part in the pilot. In 2004, all our software development efforts were focused at building features for handling insurance in FAMIS, so Delphix development was stopped during that time. All this

while, the parallel entry into Delphix continued in the ten pilot units. In 2004 September, the first round of systems auditing was done and several issues were fixed and then another round of audit done which reported only minor issues. We inducted Delphix into all our units. FAMIS was completely retired from Basix by 2005 March. Delphix is today used in all the units of BSFL.

Successes : Basix uses Delphix for all its lending operations. Further, new features are being added to Delphix for the other services provided by BSFL, including life insurance and agricultural and business services. It is a highly robust system, based on a rugged and proven platform.

BankSoft

BankSoft is a banking software created by a third party that we use in our bank, Krishna Bhima Samruddhi Local Area Bank (KBSLAB). We also use it in our urban operations in Hyderabad. We started our Bank's operations in Mahabubnagar in Andhra Pradesh. A bank's audit and regulatory requirements, as well as the services that it provides, are qualitatively different from those of an NBFC, like BSFL. Hence, we had two options: invest a lot of time, money and effort in developing our own software, or buy an established product from a vendor. At that time, we were in the middle of the long process of migrating from FAMIS

to Delphix and there was no bandwidth to handle additional software development. Hence, in the interest of expediency, we bought BankSoft for KBSLAB. BankSoft was also purchased by us for use for a very different purpose but in quite similar circumstances. In 2005, BSFL launched urban operations in Hyderabad. Again, several modifications in Delphix would have been required to handle the functionalities that were required for the urban operations. Hence, again, expediency dictated that we go with BankSoft. This product was then substantially customised for our requirements.

IDIAS

Insurance Distribution and Administration System (IDIAS) is a software developed entirely in-house to manage the insurance services offered by Basix. It was usually the practice to outsource all software development to third parties. However, in the case of IDIAS, expediency again drove our requirements. In the year 2003, we were starting to roll out our insurance products. We wanted to include support

for these products in our MIS software. However, again, due to the long-drawn-out migration from FAMIS to Delphix, implementing the insurance-related features in Delphix would have involved a significant delay. Hence, it was decided to create a new software package and thus, IDIAS was born. Today, in BSFL, IDIAS is used to handle health, rainfall and livestock insurance.

Projects and Initiatives

Basix POT : The Sudama Project

History Successes and Issues

History : Currently, the methodology used by Basix involves door-to-door service. Our agents visit every customer on a certain date to collect the repayment. While our customers are very happy with this arrangement, it has its drawbacks. Visiting every customer at his house is extremely time consuming for the agent. If this could be avoided, there would be several benefits to Basix: (i) Our agents could handle a larger numbers of customers (ii) Fuel cost would be reduced and (iii) Travel-related stress on our agents could be reduced. Thus, our transaction costs could be reduced significantly if our agents did not have to visit each customer. Our average loan size is around Rs. 10,000. To give smaller loans, we have to reduce our transaction costs. The idea of “Basix POT (Point of Transaction)” was developed as a solution to this problem. Instead of Basix going to the customer, the customer would come to Basix’s agent who would be present at an easily accessible, fixed location. This could let us try to address a category of loans we call *nano-finance* – loans of Rs. 5,000 and lesser. We piloted this project in February 2000 in the Anantapur district of Andhra Pradesh, in three places – Dharmavaram, Hindupur and Pala Samudram. The aim of this project, named Sudama, was (i) to provide financial services to a large market segment of micro

producers, land-less labourers and petty business-women, and (ii) to do so on a commercial basis. In this project, we gave loans of Rs. 500 and Rs. 1000, with repayment over 14 or 28 weeks. Every customer would have a smart card, which would store information about her previous transactions. Three PCO operators were selected as BasixPOT agents (BPA), and trained extensively on computers and on the business processes. This project ran for 3 years and the learnings from this project have informed all our subsequent efforts at increasing our outreach.

Successes : We were able to reach 437 customers, of whom 40% were women. 68% of them were from the agricultural labour class and the remaining were mostly petty business. 83% on-time repayment. Each BPA earned Rs. 900 as commission per month, thus establishing the attractiveness of this model for the BPA.

Issues: The cost of technology was higher than anticipated. The hardware and software costs could be recouped only with a much higher scale. Inadequate infrastructure, such as irregular power supply, intermittent connectivity and even a lack of sufficient space for the hardware, made the use of ICT difficult.

STEMS

STEMS stands for Single Terminal Enabling Multiple Services. STEMS is the consequence of the application of some of our learnings from the Sudama POT initiative. As mentioned above, one of the main drawbacks was that the infrastructure for the POT, such as power, connectivity and space, was often lacking in the areas where we wished to operate. In STEMS, we attempt to solve this issue by locating the POT at an existing internet kiosk. We are in

discussions with several organizations regarding this project. This tie-up would result in a win-win situation for all the parties concerned. Basix will be able to reduce transaction costs, the poorer sections will find it easier to get access to financial services and the kiosk operator will not only earn commissions on the transactions, but will also be able to derive extra income from the Basix customers by providing them other services.

Field Hardware

The Simputer

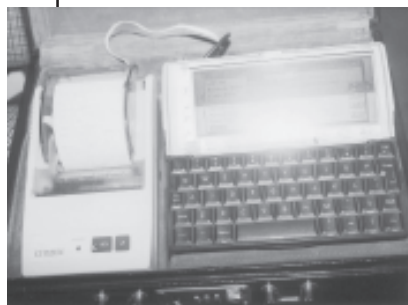


The use of the Simputer was also an attempt to learn from the experiences of the Sudama project. In case the customer did not come to the POT for repayment, he would have to be visited at his house. If he then wants to pay, we could not accept his payment, since no receipt could be printed and given to him, nor could his smart card be updated. So, a need was felt for a *mobile* POT. The then recently-launched Simputer was an attractive choice. The Simputer was designed to be a low-cost, portable alternative to PCs. It has a touch-sensitive screen, built-in smart-card reading and writing abilities and runs on AAA batteries or off the mains. Thus, it has several features that make it suitable for Basix' purpose. We programmed the Simputer for our purposes and tried it in the field.

While the programming was simple and the smart-card integration was good, a few limitations were revealed. The Simputer does not have an in-built printer. Carrying a printer and the power required for it adds considerably to the weight and reduces the portability of the whole system. While a stand-alone portable printer could be carried around and connected to the Simputer through its serial/USB ports, there were problems with the serial-port connection to the printer. The Simputer was not found to be rugged enough for our purposes. Mass data entry was next to impossible using the touch screen. Another keyboard could be attached, but that would again decrease the portability.

The Simputer also had the attractive feature of text-to-speech conversion. It was initially intended that after every transaction, we would have the Simputer speak out the transaction in the local language, so that even illiterates could feel secure about their payments. However, because of the problems mentioned above, we scrapped the Simputer initiative.

Portfolio Manger



Portfolio Manger, on the Osiris, with a printer attached

Starting from September 2001, we tried another initiative in the Khammam district of Andhra Pradesh. The attempt here was to use hand-held devices to reduce the time and effort involved in recording transactions. Two devices were tried out – Psion and Osiris. Both were hand-held units, essentially like PDAs or palmtops. We equipped our agents and field executives with it. They could enter the transactions

in the device, which would print out the receipt using an external Citizen-manufactured printer. We developed software that would not just store transactions, but could also do some analysis on the data – a mini-FAMIS, called Portfolio Manager – to run on this machine. This project met with great success for over two years, during which 18 field staff used it to record over 50,000 transactions, worth about Rs. 2.2 crore.

However, this could not be sustained. The main problem was that after about two years, the devices started to have hardware problems. These problems could not be rectified, since the devices were manufactured abroad and could not be repaired locally. The other problems faced by us in using these



Livelihood Service Agent giving a printed bill

devices were similar to those we faced with the Simputer – low battery life necessitating carrying batteries around and the absence of an in-built printer, which meant that we had to carry an external printer with it. Another device we tried was the I-Station. This was a PDA-like device with a screen and a keyboard. We tried it in Nirmal. It was not a success, for the same reasons - primarily because we had to carry an external printer and extra batteries.



Data upload through a telephone line

Handheld Devices



Hand held device used in Local Area Bank

In our Bank KBSLAB, we are currently using handheld devices to record transactions and issue receipts. The hand-held unit can be connected to a PC through the serial port. Every day, all the

information about the transactions due that day (both loan repayments and savings) are entered into the device from the PC through the serial port. After every transaction, our agents can quickly print out the receipt for the customer, instead of having to write it out. When our agents return from the field, all the transactions can be entered into the MIS simply by connecting the device to the server, rather than having the records keyed in, thus further saving time, reducing the effort required and increasing the accuracy. This has also cut down on the possibility of fraud.

Communication

CDs : Even today, in this age of the internet, BSFL relies heavily on more old-fashioned data-transfer methods. All the business data is transferred through CDs. Every ten days, each unit writes all the updates into a CD which is couriered to the Head Office at Hyderabad. The data from all the CDs is consolidated at the HO. Similarly, when new features are added to Delphix, CDs containing patches are sent to all the units from the Head Office. Thus, the data that we

have at the head-office may be slightly out of date. However, we have seen that this is an acceptable delay and causes no significant detriment to monitoring. Besides, in most of the areas where we are present, broadband connections are not available. Most of our units use dial-up connections to receive email.

VSAT: In the case of the bank, though, all the branches are connected with each other through dedicated VSAT connections. Our bank is located in

three of the poorest districts in Andhra Pradesh and Karnataka – Mahabubnagar in AP, and Raichur and Gulbarga in Karnataka. Its branches are located in some of the more backward towns in these districts. So we had to use VSAT for inter-branch connectivity, because of the lack of availability of other better quality connection options.

Cellphones: In our urban operations in Hyderabad, we use cell phones to track our operations. We have tied up with a company that develops software for

the cell phone, to enable us to track our transactions in near real-time. The agent only needs to key in the transaction amount for each loan due that day. A java applet in the cell phone informs the central server of the transaction immediately. This is a feasible solution, given network connectivity. Unfortunately, this solution cannot be used in all rural areas, though the situation is improving almost on daily. In addition to this, we are in discussions with other partners as well about the use of cell phones in microfinance.

Lessons

Selection of Technology

We should ensure that the technology is well suited to the use it will be put to and the scenarios it will be used in. In the case of FAMIS, the FoxPro database could not scale up well with our operations. In general, open standards, whether in hardware or in software, are attractive because it leads to low prices. It is a good idea to ensure that your software would run on commodity hardware and that it does not need specialised hardware. For instance, the software developed in our Khammam initiative was based on the Symbian OS, which is widely supported on a range of hardware. In this regard, I would suggest that we consider the use of open-source software, most of which are also available for free. There are many open-source/free software that perform comparably to commercial software, but cost lesser or nothing. We should ensure that the software technologies we use do not become outdated too soon (like in the case of FoxPro). Similarly, the hardware should also be well-supported so that it can be used for a long while. In our case, some of the hardware we used was not manufactured in India and therefore, couldn't be easily repaired when necessary.

Selection of the IT Partner

The selection of the correct technology partner plays a vital role in determining the success of the project. We should carefully research the technological and project management capabilities of the partner to

ensure that he will be able to deliver the solution and support it in the long run. The partner should be willing to work closely with the MFI and be open to creative ideas. It is ideal if the partner is inspired by the same vision as the MFI.

Proper Architecture

While individual programs need to be architected well, it is also important to ensure that all the different programs used by the organisation should be crafted so that they can talk to each other. Currently, in Basix, a problem that we experience is that there is no single source of truth about customer identity. Our credit software maintains one list of customers, our Agricultural and Business Development Services department maintains another and the insurance software yet another. Hence, it is almost impossible to have a unified view of the customer base.

Unify, Not Fragment

Using multiple software to handle multiple services would result in dissipation of development energy and managerial attention among them. If the different services are used by the same customers, it might be useful to build in the functionalities required for the different services into one program. In the case of Basix, due to the various historical reasons mentioned above, we have different softwares for credit, insurance and Ag/BDS operations of BSFL, as well as for the urban operations and the bank. However, we are now in the process of bringing all that functionality into Delphix.

Software and Operations in Sync

If a new product or process is being introduced, the development of the software required should start well in advance. If this is not done, then the result is crisis.

To Develop In-house or to Outsource

The answer to this question depends on several factors: the size of your organisation, the criticality of the software to you, the quality of the external developer, and the cost associated with developing it. Obviously, this will vary from organisation to organisation, and within an organisation, from product to product.

Pilot Testing

It is vital to test the software/hardware thoroughly in the field before using it company-wide. The pilot testing should also be done in phases, instead of deploying the new technology in one stretch. This will help the field staff to get used to the new way of doing things and also will catch issues before they become serious. In particular, it should be recognized that software design is essentially iterative, and that the first versions will need to be refined over a period of time before they can be used in a production environment.

Good Project Management and Documentation Practices

Good project management is essential to the success of any project. Care should be taken that the project is monitored closely by all the parties concerned and that we work closely with the IT partner to resolve the issues immediately. Documentation also plays a key role. In the IT industry, the employee turnover is generally very high. The project should be process driven and not person driven. If the required documentation is in place, the maintenance of the application will also become easy later. Documentation will also help us in evaluating whether we got what we asked for once the project is over.

End-user Involvement

The operations staff has to be inducted into the project right from the conceptualisation stage itself to ensure that the solution meets the requirements of the end users. They play a vital role in the success of the project and their feedback should always be taken into account. This will help to ensure that the application is easy to use for those who actually use it. ■

Microsoft India has launched a Rural Innovation Fund in partnership with International Development Research Centre (IDRC) with an initial seed funding of \$200,000 (Rs 90 lakh) — each partner contributing \$100,000. The fund would help local software application development vendors in smaller towns to create and provide localised applications and customised solutions for rural communities. The fund would be managed by a committee set up under Mission 2007, which is a national alliance working to make every village a knowledge centre. It would initially focus on telemedicine, education and agriculture — these have maximum interest in rural communities. The fund would help the local software industry by promoting individual or organisation endeavours towards low cost innovative applications. The idea is not to support large companies, but promote rural and small innovators to help rural communities. The quantum of funding would depend on the idea, and in January 2007, the Mission 2007 would be in a position to announce the scholarship/award of rural innovation.

Source: The Business Line dated July 29, 2006