MicroSave

Market-led solutions for financial services

SafeSave's Experience with Handheld Computers
Informal update as of October 2003
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Highlight

The project is progressing well. We are now in month 9, have close to 300 clients and have processed nearly 20,000 unique transactions without major incident. We are still using paper collection sheets as a backup, but may stop at the end of the year.

Field Level

At the field level, collectors are having little difficulty working with the handhelds, despite the fact that we have only English text to work with. Through the use of sounds and simple graphics we have supplemented the English and seem to be ok. There some early lessons you can share with regard to the design of the handheld interface:

1. *Clients will be interested in the device, and they will learn to recognize screens and sounds*. They may also want to verify balances, etc. Some of our clients are doing this, so enabling clients to participate looks to be important. The most notable example is clients' appreciation of a unique sound that marks the completion of the transaction - if they do not hear it, they may ask what's wrong. On more than one occasion this has alerted the collector that she hasn't finished the transaction properly. Some clients also like to check to see that their name and account number are present on the screen before they give money. All this points to the value of color, better graphics, large fonts, etc. We are using $99 Palm "Zire" handhelds and have built the software locally and inexpensively – with more R&D outlay it is possible to achieve a much better user interface.

2. Programmers may tend to design with factors efficient processor and memory useage in mind, rather than focusing primarily on the user's comfort and accuracy. *The interface should be designed by the MFI staff, who are most familiar with the fieldwork*. We went through a rough spot with our software shop in this regard. The fieldwork should drive the design; MFIs have to be careful that the programmers (who can be snobby with the IT ignorant) do not take charge.

3. *Handhelds are an excellent internal control tool*. Wheras initially we focussed on the potential to eliminate data processing expense, we quickly saw that the real value would be internal control. We have built the product rules directly into the transaction acceptance process:

- we require minimum savings equal to 1/3 of the loan balance; the handheld will not process a withdrawal if that rule is not met
- we do not allow loan repayments or savings withdrawals until all fees due have been paid; the handheld will not accept them if that rule is not met
- the handheld requires the passbook balance that is applicable to the transaction type, prior to allowing the transaction. If the balance is wrong, the transaction is not possible. For example, to accept a savings deposit, the collector must enter the correct savings balance from the passbook. If it's wrong, the collector can't accept the deposit.*

*We did not give the collector the account history in the handheld. This is to ensure that the branch manager is needed when the account balance is wrong (he or she has the history in the desktop computer), but it is also to prevent the willful manipulation of accounts by the fieldworker. She is only given the opportunity to enter a transaction – once it is made, she can't go back and see it, or change it. The handheld won't even

give her account balances, as we want her to have to get balances from the passbook so that the internal control 'loop' is continuous.

Office Level

Hot-syncing the palmtops has not proved difficult, however there is a vital process that has proved tricky: In order to have accurate data, all relevant field level transactions must be updated in the database before any date-dependent interest charges or payments are calculated. *With any real-time database where data is generated remotely and filtered with the main database, staff procedures must be well defined.* MFIs that work with modestly educated staff (as *Safe*Save does) have to be very careful to design a system that is easy to operate properly. We have had some difficulty in this area. Those who are interested to learn more about this should contact us.

General

We are extremely pleased with the internal control gains that are possible with the handhelds. Our accounts are nearly 100% correct – an balance error comes up every few days and is corrected immediately by the manager, who uses the account history from the desktop computer. Soon we will be adding a manager version of the handheld that will contain at least one month's transactions for all accounts, so that these errors can be diagnosed in the field, and so that the manager can spot-check randomly any time he or she is in the field.

Unlike in our other (paper + manual data entry) branches, in this branch violations of the product rules are nearly impossible given the rulebound nature of the handheld transaction acceptance process. This has allowed us to improve the product: for example, we are better able to allow withdrawals when loans are present, because we know that a withdrawal of the required portion of a client's savings is not possible.

Although the handhelds seem to be lasting well (the oldest has been in use 9 months now, and shows no significant signs of wear), it is still likely that paper and manual data entry methods are cheaper than handhelds in the long run. As mentioned earlier, however, we have begun to see the handhelds as a valuable internal control tool, and there is a growing willingess to spend a little more money (versus paper) on the improved technology.

I am fairly confident *Safe*Save would be willing to pay for the handhelds without donor contribution. We have invested $10,000 in donor funds to date, as R&D money for the software (desktop and handheld) and enough handheld units for one branch. SafeSave would not have been interested to invest its own funds into that project – paper and manual data entry works fine, is cheap, and doesn't require any new learning or effort on the part of management. But now that the first version of the system is paid for, it is possible that management would invest the roughly $1,000 needed to buy handhelds for a new branch.

Transaction volume is significantly higher in the new handheld branch than it is in other branches. Both the number of overall transactions and the amount of savings per client are more than double the typical amounts. Although it is very early to analyze these things, and the outcome is complicated by differences in product features (the handhelds are paired with a new product design), it is possible that handhelds improve confidence in our service.

It is important to give the reader an idea of the relative size of transactions, so that it is clear that the use of handhelds is not limited to institutions catering to well-off clients. The numbers for our branch look like this so far (annual GDP per capita ~ $300):

- Clients who only save deposit an average total of $2.50 per month, net of withdrawals
- Clients who are borrowing deposit an average total of $3.35 (net), repay a total of $2.65, and pay fees of $1.00; the average loan balance is $37.50
- The average client transacts 14 times per month

The collectors who are operating the handhelds are very modestly educated – primary complete, but certainly not up to 'O' level standards. Despite this, they have not struggled to learn the handheld or use it well. In other branches we traditionally have hired collectors who have not completed primary, but we do

not yet have occasion to try handhelds with them. It might be that handhelds require a slightly higher level of skill, but by no means do fieldworkers have to be highly educated – basic literacy and numeracy is sufficient.

The final not is we are very happy that we can make our assistant manager, who was formerly busy with manual data entry, a cashier, relieving the manager of this responsibility and allowing him more time in the field with clients. Becuase the palm does the data entry automatically, and the transaction tables are inaccessible by the branch staff, we are able to maintain 'dual control' even though the cashier handles both the hot-syncing and the money. In other branches, not only is the data entry clerk busy entering data, but we would not be able to have him or her transacting the cash for those entries. In the manual data entry branches, the branch manager must serve as cashier, taking away from his or her time in the field.

Future

We will be looking at the following as time permits:

- Giving the manager a special version of the handheld with account histories, for field-based account auditing
- Better use of sounds and graphics
- Use of color, when color handhelds fall to $100
- Use of digital photos, when inexpensive handhelds have sufficient memory capacity
- Use of thumbprint recognition technology

However, we do not plan to build any technology into the system that *Safe*Save would be unwilling to pay for without donor assistance.

Questions can be addressed to me at mark@safesave.org.