Introducing efficient technology in microinsurance

MICROINSURANCE FRONT-END TECHNOLOGY GUIDE

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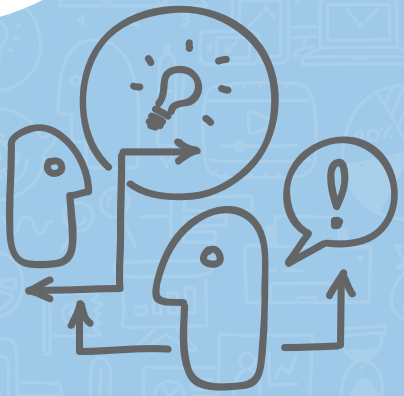
Technology is becoming increasingly critical to the success of microinsurance. Integrating technology into most aspects of microinsurance, from communications to project management, leads to efficiency and, most importantly, scale; the holy grail of microinsurance. Efficient and appropriate technology can drive down administration and distribution costs and streamline claims processing, thus increasing client-base. The 10 points summarise a set of recommendations to be considered when introducing front-end technology in microinsurance.

The Microinsurance Network is a member-based network of organisations and individuals active in microinsurance. The mission of the Network is to promote the development and proliferation of good-value insurance products for low-income persons by providing a platform for information sharing and stakeholder coordination.

The Technology Working Group focuses on technology as a means to leverage capacity for outreach, dissemination and scaling up while decreasing costs of insurance services in a number of different areas.

1.

CLEAR PROJECT OBJECTIVES



A project team consisting of technical staff with representatives and users should set the objectives and drive the project. A supervisory team from management should also be set up; they will be responsible for approving the objectives, plans and budgets. At the outset of the project, the project team will be responsible for defining the objectives and explaining why a front-end technology is needed. They should consider the following reasons for introducing front-end technologies.

To increase the scale of implementation of a microinsurance product.
To allow the customer-related activities of the business process to be conducted as close to the customer as possible.
To reduce transaction costs and increase efficiency.
To increase performance.
To reduce fraud and increase security.

The project team should aim to quantify the specific objectives they select for introducing front-end technology. They need to consider technical indicators such as real-time performance, acceptable error rates, number of simultaneous users, and user autonomy.

All parts of the organisation that will be using the front-end technology, including partner organisations, should be involved in objective setting. It is useful to organise workshops to define the objectives, and to invite potential suppliers to give presentations on the capabilities of front-end technologies.

2.

IMPLEMENTATION PLAN

A detailed implementation plan should be prepared by the project team. The plan should be divided into a number of short phases, each with a clear time scale. In the case of unforeseen delays (this will almost certainly be the case for all front-end technology projects), the implementation plan should allow for deliverables to be reprioritised or shifted from one phase to another. Appropriate business process changes should be introduced and supporting training plans developed. There will inevitably be major changes to operations when a new front-end technology is introduced. The entire staff needs to be made aware of their specific roles in ensuring the success of the project.

There should always be an initial application demonstration in which all the front-end technologies and applications are tested stand-alone in a controlled environment. The objective of this test is to ensure that the application has the expected look and feel.

The front-end technology should be interfaced directly with the back-end system. This will identify any data format or performance problems, which are very likely to occur. These must be fixed before the next stage.

The mobile communication that will be used to link the front-end technology to the back-end system needs to be tested. This testing should be rigorous and wide ranging, covering different times of the day and geographic locations.

The entire end-to-end system then needs to be deployed in a limited way in the field.

A pilot system then needs to be tested over several months.

Once the pilot system has been tested and deployed, the system implementation can be expanded.

3.

FULLY OPERATIONAL BACK-END SYSTEM

The successful implementation of a front-end technology is based on a stable back-end system that is robust enough to support the number of clients and frequency of updates that the front-end technology will introduce. Under no circumstances should the back-end system be modified in any fundamental way (such as changing versions of the back-end application) whilst the front-end is being implemented. The unstable or incompletely implemented back-end will cause confusion and waste time for the project. The IT function responsible for the back-end system should be in regular communication with the project team, through its representative, making sure that technical issues such as data formats and protocols continue to be compatible with the future front-end.

4.

DISTRIBUTION INFRASTRUCTURE

One of the key aspects to be considered in deploying a front-end technology is that there will be several partners involved. The project team will work with the various stakeholders involved in the project. It is quite possible that the organisation operating the front-end technology is different from the one owning the back-end. The front-end could be operated by a microfinance network or retail network and the back-end by an insurance company. It is also possible that different front-end technologies are used for different stages of the microinsurance business process and these in turn are done by different organisations (especially client enrolment and claims processing). Finally, the scale of the distribution infrastructure will be a factor in determining the type of technology. For very large deployments with thousands of agents, it is advisable to use an existing deployment network such as a mobile phone service distributor, banking network or a retail network. This network will quite likely be point-of-sale (POS)-based and encourage the use of smartcards and biometrics. Mobile phone networks provide greater flexibility and are most suited for smaller microinsurance project implementations.

5.

COMMUNICATIONS TECHNOLOGY

One of the first decisions to be taken by the project team will be the type of communications technology used. Communications can be the weak link in the chain linking the front-end technology to the back-end system. This is often the case with mobile phone applications which depend on a reliable data communications channel. Because of communication problems we recommend that all mobile applications be able to operate in a stand-alone mode, in case communication is temporarily interrupted.

In the case of a mobile network there are several communication possibilities, each with its advantages and disadvantages. These are described in more detail in the reviews, but the main issue to be faced is the reliability and cost-effectiveness of the mobile channel. In the case of a POS network, the communications will be a tested environment such as a retail network operated by the distributor. The interface to the back-end system will be defined in terms of this existing network. The project team needs to evaluate the alternatives for communications and insist on technical demonstrations by the supplier, as well as commercial guarantees concerning the quality and reliability of the service to be used.

6. FRONT-END APPLICATION SELECTION

The front-end applications have to be selected and the user interfaces designed. This will be the main task of the project team. There will almost certainly be a mobile phone or tablet component to the solution. However, there may be other more specialised technologies used, especially for the activities of claims management. The different front-end applications will have to interoperate, which is why the initial stand-alone test is required. The front-end technology will depend on the scale of the deployment and the type of application. For large-scale systems, a POS technology has many advantages, not least the reliability and stability of the existing infrastructure. However, the large number of projects involving mobile phones indicates that this is an up-and-coming trend offering much greater flexibility. Mobile phones have their limitations, mostly because of the small size of the handsets. As tablets become more affordable, the choice of mobile phones and tablets offers an even greater range of opportunities. For claims processing, a specialised biometric technology for client or object identification often needs to be included in the solution.

7.
PROJECT BUDGET

The project team will prepare a budget to be submitted for approval by the management supervisory team. The budget will vary considerably from a few thousand dollars to several hundred thousand dollars or more, depending on the application and its scale. The smaller the scale, the cheaper and simpler the technology and supporting systems have to be. The larger the scale of the system, the more complex and expensive the technologies can be. At the low end, one has the simple data collection application used for market surveys. These can be deployed on mobile phones using free applications that can be downloaded from the web and which have back-end systems that can be accessed over the internet. The main costs are for the SIM cards and the transactions to download applications and upload data; however, these are usually relatively low.

In the mid-range of system costs are the microinsurance applications deployed on mobile devices. The development and support costs for such an application can range from tens to hundreds of thousands of dollars, depending on scale and complexity. Also in the mid-range cost are the POS network and associated smart cards and biometric readers. Some of the costs may already be amortised when the infrastructure is being used for other purposes. Costs can be amortised more easily if there are a large number of users. At the high-end range, weather stations and associated information systems are expensive and costly to maintain. Until recently, accessing satellite weather data was very expensive (although it is now possible to obtain such data for free or at nominal cost).

8.
CALL FOR TENDERS

It is vital to go for a call for tenders in front-end technology projects. The call for tenders is prepared by the project team which could also identify a set of potential vendors. The management team should be responsible for sending it out. Opting for a single application developer, network provider, or agency network is a substantial mistake and lowers the negotiating power of the insurance provider wanting to provide the solution. The tender document needs to describe the business processes to be automated using the front-end technology. It needs to specify the data formats required by the back-end system. It does not, however, need to be too prescriptive about the technology to be used in the solution (for example the use of POS terminals or mobile phones). Restrict the content of the call for tender to user and system requirements, and avoid being too prescriptive about the technology to be used. A lot can be learned from the responses received. Perform an internal analysis of possible technologies and use this to evaluate the responses.

9.
PROJECT MANAGEMENT

The implementation of a front-end technology project inevitably involves multiple partners. The project team should appraise all stakeholders of the project's progress or of technical and commercial issues that may hamper the integration process. This should be done through a project management website where project progress is reported. To enable a high level of collaboration on the project, a common, easily accessible project reporting and management tool should be used during all phases. The reporting tool should be administered by the front-end application provider.

Agile development is a method based on short, iterative and incremental development steps. The method is ideal for microinsurance technology projects involving the collaboration between self-organising, cross-functional teams of practitioners and developers. Instead of trying to achieve a final specification upfront, requirements and solutions are allowed to evolve during the project. Agile development promotes adaptive planning, evolutionary development and delivery. The time-boxed, iterative approach encourages rapid and flexible response to change. It is a conceptual framework that promotes foreseen tight interactions throughout the development cycle. It is critical, however, to use the appropriate communications and management tools throughout the project in order to track changes. The agile methodology comes with a set of online web-based project management tools that enable high visibility of progress to everybody involved in the project, throughout the period of development. The methodology delivers small, regular increments in functionality for a solution over the development period, enabling users to gain an early sight of all deliverables and provide immediate feedback. It also allows users to control the direction and quality of the project by raising, discussing, and prioritising issues as the development of the solution progresses.

10. OPERATIONS & MAINTENANCE

Once the front-end system has been integrated through the communications infrastructure to the back-end system, the system will go through a number of operational testing phases, leading to major deployment and expansion. As opposed to back-end systems, which are usually quite centralised or deployed in a few locations, the front-end technology is highly distributed. Robustness and rapid repair or replacement of broken or defective components is critical and requires appropriate training of field staff. Even the apparently simple task of regular charging of mobile device batteries needs to be remembered. The project team will need to take responsibility for the operations and maintenance and report regularly on progress and issues encountered in the field.

A CHECKLIST FOR TECHNOLOGY SELECTION

Stable back-end system?	Size	What process?	What technology?	Choice	Recommendation
Yes	**> 500 clients** Use a front-end technology	Data Collection	Phone or tablet		Use existing online data collection application or build an application for phone or tablet
		Client Enrolment	POS system & smart-card system already available?	Yes	Consider using this technology in your system
				No	Build an application for phone or tablet
	<500 clients Use a paper-based process and enter data manually into back-end	Premium Collection	POS system & smart-card system already available?	Yes	Consider using this technology in your system
				No	Build an application for phone or tablet
		Claims Processing	What type of insurance product?	Agriculture	Use weather and crop technology comple-mented by phone or tablet application
				Animal	Use Radio Frequency Identification (RFID) system complemented by a phone or tablet application
				Health	Build an application for phone or tablet, or use biometric, POS & smart-card system if already available
				Savings, Life & other	Build an application for phone or tablet
No					Start by building a back-end system!

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