Market Intelligence through SMS Messages:

A Business Opportunity for East Africa.

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Summary

This business opportunity has been developed using a learning approach over the past 2 years in the framework of the IFAD-funded First Mile project in Eastern Africa. The learning approach included action research with and among entrepreneurs wanting to operate this as a commercial enterprise, combined with facilitated online peer-exchange to move the learning along while concretely developing the business operations. Over the two years we learned that mobile phones fundamentally challenge price definition along agricultural marketing chains, and speed up information exchanges. They enable price cross-checking and timely organization of transactions. However, these are mostly one-to-one applications. The potential of ICTs to greatly upscale business operations and reach large volumes is through one-to-many SMS information exchanges. Integrated databases on the internet, updated daily and linked by SMS to mobile phones, will become the trading platforms for fast and reliable market intelligence and transactions in rural areas. It is only now that suitable SMS platforms are getting programmed, including SMS-bulletins, e-money transfers and tag-tracking. While these new applications are already opening up new business opportunities, they do face operational challenges. Experiences with operating SMS platforms for market intelligence show that

- SMS Platform development benefits from real world testing at an early stage to avoid a disconnection between application programmers and users, which can result in over-design with too many functions that confuse the user.
- Market intelligence is the single most important factor governing the efficiency of transactions in rural markets, and thereby the income that can be earned by the producers from selling their products.
- Market intelligence must go beyond price information to include conditions, specific alerts and contact points
- Information must be relevant for the receivers, ie. trigger immediate action for them in negotiating their deals
- Customers are willing to pay for the convenience of such information to reach them via SMS.
- It is possible to organize the data-collection as a self-sustaining small business in its own right, ie. by "Information Board Managers" (IBM) who are networked together to provide the data and who earn their income from selling adverts and being re-sellers of the SMS subscriptions.

The business opportunity to sustain market intelligence services is for a national level company to set up a network of collectors of information (the Information Board Managers), process this information, and then provide the market intelligence in the form of SMS-bulletins and SMS–alerts to market actors all along the marketing chains, using the IBM's as sales points. These bulletins and alerts are sold as a subscription and can be tailor-made to fit the interests of various types of clients.

The unique selling proposition is the convenience of automatically getting relevant, independent and trustworthy market intelligence sent to the subscribed mobile phone.

Clients who will subscribe to such a service range from producers and their organizations to small and large traders, transporters, processing companies, input suppliers and anybody wanting to market their produce in rural areas, or wishes to provide information there.

Business operations include the collection mechanisms for the price information involving the whole network of Information Board Managers, database management, configuring the information into diverse SMS-bulletins and SMS–alerts, then sending them off via a SMS platform and finally managing the money flow from all the subscriptions.

The main business risk is from 'unfair' competition coming from similar information services that are subsidized by donors or government. The business will need to grow fast to large enough sales figures of SMS-bulletins not only to break even but also be competitive. Critical for the success of the business will be:

- Reliability and quality of the distributed information
- Availability of the re-sellers based in the local markets for each subscriber to go to and check for clearing up uncertainties in using the system and for following up when a deal seems interesting for the subscriber.
- Continuous exploration of intelligence needs of diverse types of clients, and the creative design of SMS-messages that fit their immediate information needs for making deals.
- Payments of subscriptions via mobile phone transfers

Commercial Viability: Financial projections over a three-year period have been developed taking into account the operational procedures and related costs and the income streams that have emerged. Projections show for the first year of operation (ie. 500 monthly subscriptions sold by 30 resellers, ie. 17 subscribers per reseller) that breakeven is achieved by the national company in just one year. A re-seller makes above US$ 32 each month, providing an annual income of US$ 391 of which 36% is profit. If the network expands to 150 resellers in three years and the IBMs are well trained, and if SMS-bulletins and SMS–alerts are creatively explored and designed, it is realistic to assume profits of above US$ 50,000 per year for the business, while the 150 resellers earn more than US$ 78,000. This is about US$ 500 for each IBM over the year. The SMS-platform providers, however, only break even in the third year. Providers only start to make profits in the fourth year. The long haul to breakeven is because of high development costs while the sales figures are growing to scale. It can therefore be concluded that this is a commercially viable business in Tanzania, if the following can be achieved:

- The number of re-sellers (ie. licensed Information Board Managers) is aggressively expanded to 150 and beyond within 3 years, and these people are trained up to achieve their own income streams, thereby taking care of the price-collection costs.
- Each re-seller can each month sell on average at least 15 subscriptions
- Ongoing research of clients needs for intelligence that is then creatively reconfigured into attractive SMS-products, thereby achieving more than 2,300 subscriptions sold per month.
- The start-up costs for the SMS platform can be covered for the first three years.

The Setting

The IFAD-funded First Mile project has explored and developed in East Africa a business proposal for sustaining Market Intelligence services to small farmers and other key players in the value chain. This is the result of intensive action research involving various entrepreneurs who were in continuous facilitated learning exchange for achieving a commercially viable operation for themselves. There have been successes and mistakes, which have now resulted in this proposal being based on hard experiences and a good grasp of the evolving situation in marketing in rural East Africa. This is a first attempt at putting together a business proposal for the particular service of providing market intelligence that shall be operated by the emerging network of marketing entrepreneurs (Information Board Managers, Market Access Companies, and National Marketing Company).

So far we have learned the following about market intelligence:

- Market intelligence is the single most important factor governing the efficiency of market transactions in rural areas, and thereby the incomes that can be achieved along the marketing chains, and particularly for producers.
- "Market intelligence" in rural markets includes relevant price information and relevant trade alerts along with the required personal contacts for negotiating deals.
- Clients will only pay for price information that is relevant**,** ie. on which they can immediately act. This means the price information must be up-to-date, reliable, regular and most importantly for the crops and markets that are immediately accessible for them.
- Clients will also only pay for trade alerts, information about offers to buy or sell, if they can act on it, ie. Products geographically accessible for them and their operations, and with correct and reliable pointers to the connections for negotiating a deal.
- Price information itself cannot be sold. It is the convenience of getting trustworthy information what clients will pay for. Furthermore just the information itself does not make money for a client. It is the follow-up services for making deals based on the information that interest clients: Help clients get into contact with each other, provide clients the standard procedures for negotiating and agreeing on trustworthy deals, assist in organizing and controlling the agreed transactions, etc. So any market intelligence service must include pointers to reliable support for completing deals.
- The trustworthiness of all information is of utmost importance and must be safeguarded against all attempts of manipulation by vested interests. This trustworthiness must be convincingly communicated through a solid track record. The service must succeed in building trustworthiness in an environment where distrust is prevalent.
- A market intelligence service can only be sustained in rural areas with a "face" for each client, ie. a local service provider. Such service providers in rural towns and urban markets then need to be networked to share a common intelligence collection and distribution system. Centralized systems that are remote from and not personally approachable by the rural customers are not sustainable. Just an online platform alone will not do.
- Now in East Africa almost all market intelligence is being communicated over mobile phones. It is, however, mostly one-to-one information exchange. This is expensive for the market actor, and often doubtful because such exchange also allows manipulations.

The Business Opportunity

The business opportunity is for a national level company to provide a market intelligence service to all the actors along the rural marketing chains which they can use to enhance the efficiency of their transactions and thereby improve their incomes, including of course the producers themselves. The service of reliable and neutral sources of market prices and offers is automatically provided to its clients on a subscriptions basis via mobile phones. The national company and its network of Information Board Managers share the subscriptions fees.

Clients

The main clients for this business are:

- Single farmers
- Farmer groups and their apex organizations interested in marketing their produce
- Small traders
- Large traders, bulking operations, warehouse operations
- Transporters
- Large wholesale buyers and exporters
- Small distributed buyers in the satellite markets in the large urban centers
- Processing industry at all levels
- Input suppliers (seeds, fertilizers, pesticides, tools and implements, etc)
- Anybody who wants to market their products in rural areas.

Unique Selling Proposition

The unique selling proposition of this business is that clients automatically get text messages sent to their mobile phones with accurate information that is relevant to them from a neutral information source. The information is provided either as a regularly scheduled SMS-bulletin or as 'triggered' SMS-alerts. Bulletins and alerts are tailor-made to the requirements and interests of the client. The client pays their subscription to a local representative of the company from their local market town. Local representation makes it easy for clients to ask when uncertainties in understanding the system emerge. Moreover, clients can easily request further information and connections for following up on trade opportunities that they want to explore.

The Business Operations

The business operations consist of information collecting and exchanging, configuring the information according to clients interests and needs, and redistribution to clients by SMS platform.

Collecting and Exchanging Market Intelligence

Information Board Managers are independent small businesses that operate an information board in the markets. They are trained and licensed by the national company that operates this business. The IBMs are based in the markets themselves. They rent the information boards from the national company and operate it as a side business. They post market price information on these boards, making them attractive for market actors to regularly take a look at. This allows them to also sell advertisement space on these boards, including of course offers to buy and sell, thus further increasing the attractiveness of the Information Boards. The sale of advertisement space is the direct income of the IBMs. The IBMs are trained to collect the required price information and forward it to the national company via SMS or

through internet. They are also trained to forward trade opportunities to the company and put opportunities from the national company on to their Information Boards. They are therefore tied into an information-exchange network as licensed members and know of each other personally.

Costs: The IBMs need not be remunerated for their efforts to collect and forward the price information and the alerts as they engage in this exchange to earn money from:

- the adverts and the resulting trade opportunities and the commissions they make off them
- the commissions on the subscriptions for SMS-bulletins and SMS-alerts.

However, IBMs do get SMS-bulletins on main market prices for free from the national company. This is the only cost that the business must bear for price collection.

Configuring and Distributing Market Intelligence Bulletins and Alerts

The national company collects the market intelligence and manages a database. It then configures this information into various SMS-bulletins and SMS-alerts according to the interests and needs of the clients.

Costs: The business must hire at least two capable database managers who organize the daily collection of information from all the IBMs, its correct entry into a database, and the configuration and sending out of the SMS-bulletins and SMS-alerts.

The national company uses a SMS-platform to broadcast the SMS-bulletins and SMS-alerts to the clients who have subscribed to them.

Costs: The business must pay for the SMS-platform (see below). The payment is based on a bulk rate fee for each SMS being sent. This fee covers:

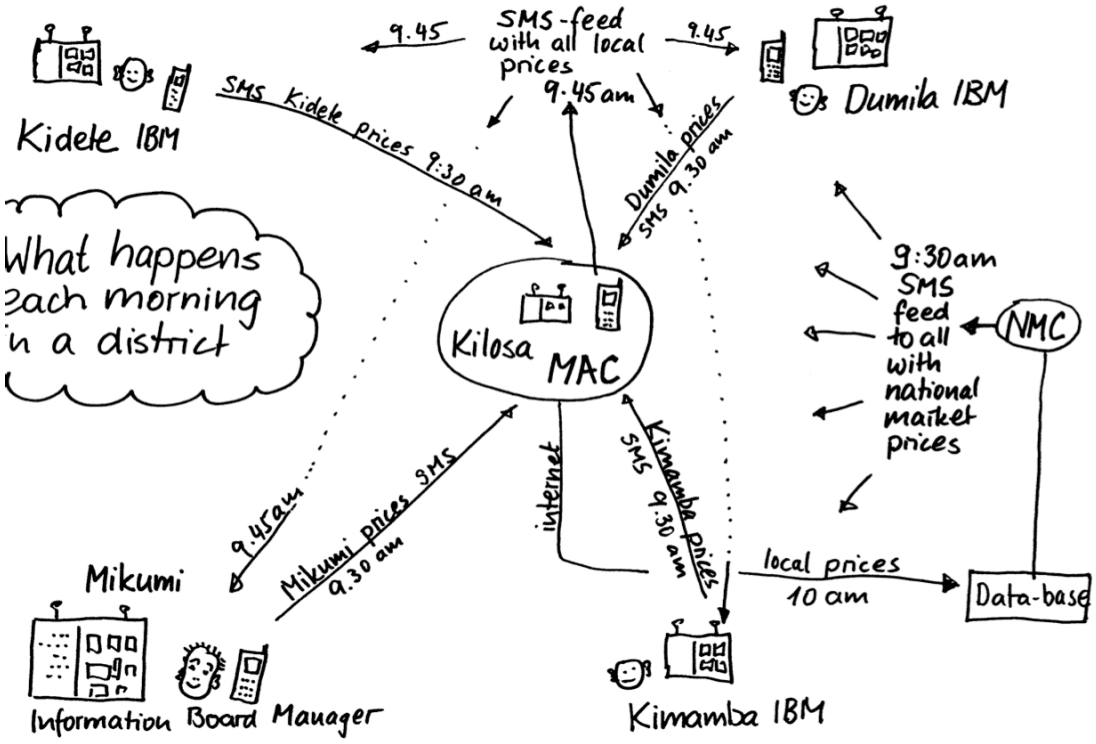
- the bulk fees paid to the mobile telecom providers
- the hosting and servicing of the platform itself,
- customer care for the users (ie. the database managers)
- further developments of the platform to improve its usefulness and expand its scope.

System of Daily Information Exchange

Each day information is exchanged between members of the network as shown in the diagram below and described here:

1. IBMs collect market price information each morning in their local markets and forward it to the local hub. This is an advanced IBM that has become a "Market Access Company" (MAC). A MAC manages a number of IBMs operating in local markets throughout its command area (usually the size of a district or two).
2. The MAC collects all the price information from all its IBMs and builds an SMS-bulletin. This takes about 15 minutes. Then the MAC sends back to all its IBMs the SMS-bulletin showing all the prices from all local markets and any further relevant information. This then goes up on the Information Boards of the IBMs.

3. The MAC sends the same SMS-bulletin to the national company database manager.
4. The database manager collects all the price information arriving from MACs and IBMs.
5. Another flow of information to the database manager is from IBMs based in the main national markets.
6. The database manager ensures correct data-entry into the database for archiving and later market analysis.
7. Each morning the database manager builds diverse SMS-bulletins from all the information it gets and sends them out to the various lists of subscribers of these SMS-bulletins.
8. Each morning the database manager sends an SMS-bulletin of main market prices to all the IBMs, free of cost, for them to put up on their Information Boards.



Market Intelligence Database Management

The daily procedures for database managers have been developed and are evolving further. There are a number of checks and controls that have to be made each day, and contingencies to be followed when there is a blockage anywhere in the system. These procedures have been set up and are the basis for a quality control system.

Costs: Refer to section above on "Configuring and Distributing information".

Provision of SMS platform

The platform broadcasts SMS for bulk rates to a large number of clients over all types of mobile phone providers active in East Africa. Through a database it keeps track of all the SMS sent. The platform allows national company database managers to configure their SMS-

bulletins and SMS-alerts, and manage the distribution lists of their SMS subscriptions. This platform is provided by RAVI through its agreement with MobilInfo in Daressalaam for all East African countries.

Costs: Refer to section above on "Configuring and Distributing information".

Selling SMS-bulletins and SMS-alerts

SMS-bulletins are coded text-messages that provide information that is relevant for market actors. There is a wide range of possible SMS-bulletins that can be put together from the database to fit the interests of a particular group of clients. A very general example that is sent to many generally interested actors for instance in Uganda is this:

AgriNet:12/6/09: bea:230BUG 170NAK 100MTY 150MBR gnt: 300BUG 270NAK 210MTY 260MBR cowp:300BUG 240NAK 250MBR rics:300BUG 300NAK 250MBR.

All minor letters are crops (beans, groundnuts, cowpeas, rice), major letters are main markets (Bungoma, Nakaseero, Mityana, Mbarara) and figures are always prices in local currency per kg, which in the case of Uganda have to be multiplied by 10 (ie. add a zero).

The IBM will find a client who wants to get an SMS-bulletin. The client pays the IBM who will then arrange everything for him to get the SMS-bulletin for the length of time he paid. A similar procedure occurs for SMS-alerts. These are messages that are sent to interested clients each time the network detects that a particular event, usually offers to buy or sell, has occurred. For instance when a large remote buyer wants to buy 100 tons of rice from a certain area, all the clients in that area who are interested to be alerted when this 'event' happens automatically get the message sent to them, along with contact points to follow up if they wish. An example of the prices clients pay for a monthly subscription in Uganda is shown in the table below:

Type of service	Service Description	Price per month	Terms & Conditions
Agricultural Commodity Prices	GENERAL SMS PRICE BULLETIN: Daily Market Prices of 3-5 commodities, sent on your mobile pone Monday to Friday every week	UGX 9,000	Monthly subscriptions Advance payment
	CUSTOMIZED SMS PRICE BULLETIN: Daily Market Prices of 2-3 SPECIFIC commodities (of your choice) sent on your mobile phone 3-5 times a every week	UGX 15,000	
Trade Alerts	GENERAL ALERTS: Notification of opportunities to buy or sell	UGX 15,000	Broadcasted when arise (min 10/month) Monthly subscriptions Advance payment
	SPECIFIC ALERTS: Notification of opportunities to buy or sell specific commodities of one's choice	UGX 15,000	

Input suppliers have turned out to be interested in both providing SMS-bulletins for widely dispersed agro-dealers on availability of inputs, as well as in sending alerts to them. This means subscriptions for SMS-bulletins and SMS–alerts can also be paid for by those who want to "push" information to their client base for free.

The income streams for bulletins and alerts operate as follows:

- Clients pay their subscriptions in cash directly to the IBM, who – after deducting his/her commission – forwards the balance by mobile phone payment to the national company who then enters the new client in the database.
- Clients from large organizations will buy subscriptions straight from the national company for pushing information out to their clients in rural areas.
- Payments between IBMs and the national company are all made through mobile phone accounts. This is in order to ensure fast reaction times for subscriptions.

The SMS Re-seller Network

Only licensed IBMs and other licensed members in the national company network can sell subscriptions for SMS-bulletins and SMS-alerts. This is in order to be able to control the quality of information and the correct follow-up procedures.

Costs: There are no specific costs associated with the re-seller network apart from the cost of a mobile phone and sending out the daily sms-bulletin on main market prices.

Challenges, Competition and Business Development

The Challenge of Reliability and Quality control

The topmost challenge to the business is ensuring the reliability and trustworthiness of the information that is being distributed through the SMS. Strict quality control is required to gradually build a track record for reliability and trustworthiness. This will be achieved through:

- Licensing of re-sellers. Only IBMs who have gone through the 3-step training by the national company and achieved the final registration as members of the network are allowed to sell subscriptions.
- Procedures for immediate identification of missing or faulty data. When information is missing or faulty, database managers will be able to trace back and take action via their mobile phones within the same day.
- Only re-sellers pay NMC for delivering SMS-bulletins and SMS-alerts to their clients. This transfer of money must be organized via mobile phones in order to ensure speed, reliability and trustworthiness of the business.

Competition in Market Intelligence Services

There are various price collection and distribution efforts under way in East Africa.

- Governments collect market prices (typically average day prices twice a week) for their own planning purposes. They make these prices freely available in newspapers and radio. However, experience shows that traders rarely make decisions based on these prices, as they tend to be old and inaccurate. Furthermore they lack the further intelligence required for then actually making a deal. What is good for official statistics is not what is required for daily trade decisions.
- Several mobile phone companies provide a service whereby clients can request price information through sending a coded SMS, which then triggers an automated response SMS of the requested price. All these systems get their information from the government statistical service and therefore the information is not up to date.

- There are several donor-funded efforts that collect and share price information via newspaper, radio and email. These have no sustainability built into their operations, ie. when funding stops there is no strategy to recover the high costs of data-collection by salaried price enumerators. There is also in most cases no intrinsic incentive for accuracy of the data.
- Online 'trading' platforms offer further competition. These platforms act like e-trading exchanges sharing offers to buy and offers to sell. They mostly lack a network of field operators who are closely tied into the system and can provide a "face" to the service. Experience suggests that without a "face" to talk to for clarifications and for organizing the trade follow-up, such platforms will not grow.

The strong point of our business is that market actors themselves are collecting prices. Working together with their colleagues in other parts of the country, whom they know and communicate with, they depend on each other for the accuracy and timeliness of the information each one provides. Their data is then quality checked by a national company that can brand this service and build a track record for reliability. What is therefore required is to make clear how the information is collected so that the clients can make their judgements about its trustworthiness and accessibility for follow-up.

A critical advantage of our business is indeed the presence of an approachable person in the rural towns and market places. No matter how good the ICT may be, without a "face" the market intelligence service won't work. Our system provides such a "face" through the person of the IBM. Actually the subscribers to the SMS services are de facto clients of the IBMs who then buy the services off the national company.

SMS-Platform and Further Business Development

The procedures and mechanisms for collecting, storing and redistributing information will continue to evolve. It will therefore be critically important to continuously adapt, expand and add applications to the platform in order to increase the efficiency of dealing with large information flows without compromising the single-client approach to it. The core activities that will drive and expand this business further are continuous effort to:

- Explore and assess which configurations of diverse SMS-bulletins and SMS-alerts will be paid for by which types of clients.
- Streamline quality control measures and yet retain a single-client approach.

Business Risks and their Mitigation

Clients will not pay for SMS

Clients will not pay for an SMS when they can get that information free from the Information board. This is not a real threat since:

- The information on any IBM is of general nature for the public at large. Specific SMS-bulletins that cover the specific interests of a client will not be on the Information Board.
- Many farmers (or their group leaders) prefer to have the information sent to them rather than having to go daily to the Information Board to get the news there.

- Experience shows that people are actually willing to pay for the convenience of automatic delivery of information onto their mobile phones. This is particularly true for those people who are often remote (farmers in their villages) or who are travelling frequently (traders).
- Experience shows that a notice on the Information Board that this information can be obtained via SMS-bulletin results in more clients coming to ask the IBM for a subscription for an SMS-bulletin.

Subsidized Services

Many existing information services are heavily subsidized. Farmers have been "trained" by the NGO and Donor-community to expect these kinds of services to be either free or very cheap. The best way to counteract this phenomenon is by offering value for money to the client and establishing a track record of reliable and sustained service. Experience suggests that clients, even poor farmers, have no problems paying for a service that can be shown to be making money for them. That is the critical challenge that must be met, and which subsidized services usually do not have to follow.

Fast Scale Up of Services

The incomes of this business are from subscriptions. The fees for these subscriptions cannot be too high. Therefore, many subscriptions are needed for breakeven to be achieved. Recall the national company must pay for the platform and the database management as well as the purchase of bulk SMS messages. The risk is that growth will be too slow due to either competition by subsidized services, or a lack of trained and knowledgeable re-sellers. This risk needs to be mitigated through an aggressive training campaign to get as many licensed IBMs up and running as fast as possible. Furthermore a publicity campaign may be required, but only after the operating capacity is built to then pick up the demand for this service.

Financial Projections

Based on the experiences so far a pricing and costing plus a business projection over three years have been developed. See attached spreadsheets for:

- Calculations for SMS products. Margins, costs and prices for several types of sms bulletins and alerts in Tanzanian Shillings.
- Business Projections for Re-sellers (IBMs). Profit/loss projections, at business and individual IBM level, based on incomes and expenses across a range of sms product sales over three years in Tanzanian Shillings and US Dollars.
- Business Projections for National Companies (NMCs). Profit/loss projections based on business incomes and expenses across a range of sms product sales over three years in Tanzanian Shillings and US Dollars.
- Business Projections for SMS platform provider. Profit/loss projections based on business incomes and expenses across a range of sms product sales over three years in Tanzanian Shillings and US Dollars.

This financial analysis helps in understanding the requirements for business breakeven, rate of growth and returns. Values assessed at this point to be realistic for the first year of operation (ie. 500 monthly subscriptions sold by 30 resellers, ie. 17 subscribers per reseller) show that breakeven is achieved by the national company in just one year. A re-seller makes above US$ 32 each month, providing an annual income of US$ 391 of which 36% is profit.

If the network expands to 150 resellers in three years and the IBMs are well trained, and if SMS-bulletins and SMS–alerts are creatively explored and designed, it is realistic to assume profits of above US$ 50,000 per year for the business, while the 150 resellers earn more than US$ 78,000. This is about US$ 500 for each IBM over the year. The SMS-platform providers, however, only break even in the third year. Providers only start to make profits in the fourth year. The long haul to breakeven is because of high development costs while the sales figures are growing to scale.

Commercial Viability

It can therefore be concluded that this is a commercially viable business in Tanzania, if the following can be achieved:

1. The number of re-sellers (ie. licensed Information Board Managers) is aggressively expanded to 150 and beyond within 3 years, and these people are trained up to achieve their own income streams, thereby taking care of the price-collection costs.
2. Each re-seller can each month sell on average at least 15 subscriptions
3. Ongoing research of clients needs for intelligence that is then creatively reconfigured into attractive SMS-products, thereby achieving more than 2,300 subscriptions sold per month.
4. The start-up costs for the SMS platform can be covered for the first three years.

Given the experiences with the First Mile project, these assumptions and conditions appear to be realistic. On the other hand, the most critical unknowns at this juncture for achieving these conditions are:

- Will the national company staff (Regional Managers) be in a position to aggressively expand the number of IBMs as resellers?
- Will the SMS platform develop any major problems that may require more programming than expected (experience so far suggests this is very difficult to predict)?
- Will subsidized services be pushed by large donor-funded programs?