agridea
DEVELOPING AGRICULTURE AND RURAL AREAS

# Prototype programme of the sms to internet interface ready for field testing

**(Deliverable No. 7 of First Mile Phase 2, IFAD-Agridea)**

## *Form and Content of deliverable 7*

Due to the situation found by Ideso during their trip to Tanzania, deliverable 7 is not a prototype programme of the sms to internet interface ready for field testing developed by Ideso, how it was planed at the beginning.

During their mission Ideso came to the conclusion that the plan had to be revised. “In terms of the roadmap for developing ICTs, an sms content service is not what is needed first, it has to be preceded by organizational and technical infrastructure.”

Considering this conclusion, Ideso started to look for an existing software package, ready for use and affordable, locally hostable, adequate to the needs of Firstmile regarding thematic focus and complexity. They found tradenet.biz from busylab “which is far ahead in the technical field, whereas they are not so strong on the people side”. Ideso met TradeNet in contact with Clive Lightfoot and Ueli Scheuermeier. The contact was fruitful, the cooperation with TardeNet moves on and one of the first services TradeNet is going to establish will be the SMS content service.

Given this situation, deliverable 7 comprises the following documents:

1. Ideso Summary report first year
2. Concept note of TradeNet
3. SMS connect mobile2mobile network of TradeNet

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# Firstmile Phase 2

# Summary report for the first year

Version: 1.0, 29.04.2008
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# 1 Timeframe and Deliverables

Terms of Reference für den Auftrag von Ideso

**A) Project Information**

**Project Name:** The First Mile Phase 2: ICT for rural development

**Project Description:** The first year of the First Mile Phase 2 project, after appropriate preparation and planning of the technical assistance, starts with a survey to underpin the development of appropriate trials on ICT connectivity in selected AMSDP districts. Trials will determine the profitability of various connectivity options in select districts. At the same time IDESO will develop a prototype programme that shall allow farmers and traders to use SMS to access an online database at the District level with updated locally relevant market intelligence and market information. Further local learning in this year will focus on: a) the extent to which key players along the marketing chains are capable of using the ICTs for generating and exchanging locally relevant market intelligence; and b) the determination of the technical support requirements for RSCs to sustain their connectivity with client farmers and market intermediaries. Good practices emerging from the ICT trials will be packaged for scaling up to other districts.

**B) Scope of Work**

The consultant will engage in the following activities:

**Local learning on local intelligence exchange**

Develop interface mobile-to-internet exchange

Develop interfaces to facilitate mobile-to-internet data exchange. Design a program interface that allows local market 'info-mediaries' to upload relevant local market intelligence using sms to an online database and allows clients to download it using sms messages from their mobiles. The interface should also allow for farmers to make deals over mobiles with other key players in the market chain using sms messaging.

**C) Deliverables**

The deliverables and deadline of the project for which the consultant is responsible are:

| | | |
|---|---|---|
| 7 | Prototype programme of the sms to internet interface ready for field testing | 30/04/08 |

**D) Period and Levels of Effort**

The consultant will work for a maximum of 50 days during the period 1 August 2007 to 30 January 2008 as follows:

| **Local learning on local intelligence exchange** | |
|---|---|
| Develop interface mobile-to-internet exchange<br>18 days field assessment, contracting and testing with Telecoms in Tanzania<br><br>32 days programming interface | <br><br>14-28. August 2007<br>1. September – 30. April 2008 |

# 2 Field trip to Tanzania

## *2.1 Objectives*

In August 2008 we did a field trip to Tanzania with the following objectives:

"Ideso's part in the Firstmile project is the development of a system, that shall allow farmers and traders to use SMS to access an online database at the district level with updated locally relevant market information.

Peter Luder and Tonio Seiler from Ideso will join Ueli Scheuermeier on his



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Travel in Tanzania in late August. They will visit several rural areas and check the requirements of the future system users on site. Before and after their trip they will meet partners from Tanzanian SMS Providers to settle technical issues and business terms for the pilot phase in 2008

Goals for trip to Tanzania 12.08.2007 to 26.08.2007

1. Validated "user stories" concerning the "business cases" we want to support with our local market intelligence system
2. Draft of the "data model", e.g. all the "things" with their interrelationships, that we have to put in our system, starting in the pilot phase and scaling up to a fullgrown, generally applicable package.
3. Established contacts to Tanzanian SMS Provider (technical and business level)
4. Workable technical connectivity between a Tanzanian SMS Service Provider and an Ideso test device over the internet
5. Enter into negotiations with SMS service providers and come up with a draft for a contract to be negotiated in detail between AMSDP/First Mile and service provider."

## *2.2 Activities*

Our trip had two main issues:

- Activities in connection with the SMS Service in Dar Es Salaam 11.-14.8.2007 und 23-25.8.2007.
- Field trip for the evaluation of business cases in rural Tanzania, 15.8.2007 – 23.8.2007. Itinerary: Dar Es Salaam, Chalinze, Mafinga, Songea, Dar Es Salaam. Together with: Ueli Scheuermeier, Amour Usi, Helen Gilman, Declan Mc Cormack und Asha Mruma.

A final meeting with the Firstmile managers was held in Dar Es Salaam, 24.8.2007.



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## *2.3 Results*

### 2.3.1 Thread 1: Establishing SMS Service in Daressalam

Plan:
13/14.8.2007 Setup a SMS Carrier Service with Celtel
23/24.8.2007: Finishing

Results:

| Subject | Result | Comment |
|---|---|---|
| Software | Content Service Connection designed according to the requirements we had previously cleared with Celtel. Ready for testing | |
| Hardware | Requirements cleared with Celtel. | There are other options |
| Contract/Administration | Requirements cleared with Celtel. | Blueprint for written proposal available |

- We know now quite exactly, what should have been done before we came here.
- We know technical conditions and the general pricing conditions.
- We realized that a local partner has to attend the setup closely.

### 2.3.2 Thread 2: Examining the business cases that future FM ICT Applications are going to support

- So far we could not verify or define business cases "ready for implementation"
- We learned that it's complex and always specific to each case. The whole package is needed, e.g. knowing about the market prices is not enough, you have to know, to whom you can sell, where and at what conditions.
- We found existing services (Internet, SMS). There should be done systematic research about that. We could learn from other's experiences or integrate with them.
- Together with Ueli we worked out a draft for a roadmap for building up the Firstmile services and gradually developing a support by suitable ICT means. But before you can think of introducing ICT you would have a set of MACs (we were talking about 5) up and running, working with what's there (billboards, mobiles with voice and SMS).
- Requirements for evaluating ICT
  - Meeting the requirements of the FM business cases
  - English/Swahili

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- Simple and robust
- Open source
- Locally serviced
- Following the general trends of e-business

### 2.3.3 Documentation

All the documents emerging from our activities in the Firstmile project are collected in detail in a database.

An elaborate intermediate report was done in German by Peter Luder and Tonio Seiler by end of September 2007. It also contains a logical roadmap for building up the firstmile system step by step with the appropriate usage of suitable ICTs.

# 3 Consequences for the mission of Ideso

Officially Ideso should establish a prototyp for a SMS content service. Before our trip to Tanzania we had already programmed a small application ready for implementation with Celtel to test the connectivity. We assured ourselves with Celtel, that our system was correct, but we couldn't run it in reality.

The plan was to build on this technical platform a SMS content application. We elaborated a data model draft as a reference frame for our field research on the trip. The model was very simple because of two reasons:

- An SMS content service has to be very simple, because you have the level of entry for the users as low as possible.
- You cannot pack complex business cases in SMS. An SMS content service can eventually support existing business cases once they are developed.

As a result of our trip to Tanzania we had to realize that we have to revise our plan. In terms of the roadmap for developing ICTs an SMS content service is not what is needed first, it has to be preceeded by organizational and technical infrastructure.

Thus the plan and therefore the role of Ideso has to be reconsiderd and adapted to what really makes sense.

# 4 More power with Tradenet

One of the recommendations after the trip was, that Firstmile should have a presence on the web by a home page in the real sense of the world: A platform, where the Firstmile community feels at home. We emphasized the importance to look for an existing software package, ready for use and affordable, locally/ regionally hostable, adequate to the needs of Firstmile regarding thematic focus and complexity.



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And we found Tradenet.biz from busylab, Ghana. We evaluated the software and came to the conclusion that Tradenet is far ahead in the technical field, whereas there seem to be weaknesses in "on the people side". We hoped that Tradenet would combine ideally with the strongnesses of the Firstmile initiative, having launched a lot of the organisational and business development work that could provide the liveblood for a network like Tradenet

We made the first contact to Mark Davies, the director of Tradenet and linked him to Ueli and Clive. Since then the cooperation steadily moves on and Tradenet is being set up in Tanzania as well as in Uganda and Kenya.

Since one of the first services Tradenet is going to establish will be SMS content service (Pull and Push), Ideso was happy to provide the contact to Celtel, Francis Ndikumwami for the local SMS carrier services.

We are confident, that Tradenet really could be a boost for Firstmile. But we will have to take care, that it's done step by step in accordance to the Firstmile people. Ideso would be happy to contribute it's share to find the right way.



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# concept note

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TradeNet is an information & service brokerage channel for rural communities. TradeNet is the social networking equivalent for business communities in trade & agriculture. Realtime and interactive peer2peer messaging tools enable communities to share production data, market linkages, extension services, health notices, weather reports and other mobile notifications.

## stats

| | |
|---|---|
| project start | 2004 |
| public launch | Jan, 2007 |
| markets | 565 |
| prices | 725,000 |
| web hits | 5,225,860 |
| web pageviews | 2,829,762 |
| web visitors | 276,256 |
| employees | 9 |
| cost to date | $450,000 |
| license revenues | $220,000 |
| annual budget | $300,000 |
| technology | linux/mysql/cf |
| countries | 13 |

## what is our focus?

### 1 extension

price commentaries, news, library documents, videos, marketing brochures, best practices, policy.... important messages can be distributed among interest groups to inform and educate. Our SMS publish allows any user with a TradeNet account to setup friends and groups of friends and broadcast messages easily from the web or their phone. With community groups sharing more information about disease outbreaks, transport availability, inputs, fertilizer application, or harvesting practices, TradeNet enhances information flow and can re-energize extension services (including messages on HIV, gender and environment)..

### 2 prices & markets

individuals, groups or projects can upload price data for any commodity in any market. TradeNet distributes this data via automatic SMS alerts for subscribed users, SMS price requests, and the web. Better price transparency increases market efficiencies and increases producer revenues.

### 3 deals to buy or sell

offers can be submitted from any mobile phone and are immediately available on the web, and are broadcast to users who have setup automatic SMS alerts for those commodities. SMS groups can share private offers.

### 4 web marketing

registered users get a free webprofile to advertise their products and current offers. Users update this webspace in realtime from their phones using SMS. Peer reviews, transaction histories, and detailed service descriptions offer unique views for international buyers.

### 5 production & credit

closed networks of contract farmers can share production data about their crops and harvests via realtime SMS inputs. This reporting and forecasting allows networks to scale up. It also delivers transparency for larger buyers who are trying to leverage opaque national markets.

## how does it work

### social networking & peer2peer

TradeNet has developed a compelling set of SMS and web tools that empower individuals and groups to quickly and cheaply broadcast messages to eachother, and to profile themselves. Customized for agricultural commodities, it is available in any country, language and currency. By providing something that is easy to use, relevant, and of clear value, the market benefits by discovering new commercial opportunities. By focussing on tools for users, rather than tools for projects, TradeNet will be driven by user participation, and content acquisition costs are reduced. The old model of centralized gathering and distribution of non-customized, irrelevant, innaccurate and out-of-date market data is a thing of the past.

## we work with

### the real market

TradeNet's philosophy is to put tools into the hands of market actors that already exist and to enhance communication activities that are already underway. Private individuals, exporters, professional associations already possess accurate and meaningful market information. We provide the SMS toolset that enables them to communicate this quickly and cheaply. By capturing this market 'chatter', the private sector builds its own public MIS.

### public services

the role of the public sector remains critical in covering commodities & communities that may otherwise be overlooked, and in 'seeding' the system. The tool allows both public and private sector participation. All content is tagged by source, and users can filter to suit their needs. TradeNet actively builds critical mass of data over the first three years through strategic market 'TradePoints'. providing data enumeration, training and awareness building. This role reduces as the market itself participates.

### license & franchise fees

TradeNet makes money through license fees and transactional revenue. Every group can setup on TradeNet for free, but must pay a basic license fee of $500/year if they want to extend to 100 members and 10 commodities. Unlimited membership and countries attracts a fee of $1,800/year. Country programs and specific projects pay custom franchise fees. Advertising & sponsorship is available.

### micro-transactions

partnerships with mobile operators (like MTN in Nigeria and Ghana) allow TradeNet to purchase bulk SMS at cheap rates. Users and groups who broadcast SMS are billed twice this (still less than standard SMS rates), providing revenue on every SMS sent through the system which can be shared with local partners. Users and groups topup their tradenet account by transferring value & units from their mobile phones.

## sustainable

"After finding prices on Tradenet, a Bolivian trader contacted us for the purchase of Cashew Nut (500 tons each month) and of Cocoa (3,000 tons a year) to deliver to his customer who is in St Petersburg, Russia"
Innocent Sindikubwabo, Cote d'Ivoire

"I check price information on TradeNet everyday. Now I know that the 500 CFA/25kg sack of aubergine that itinerant traders offer us is far below the CFA 3,000 I can get in Abidjan..."
Mme N'cho, Alépé, Cote d'Ivoire

"We wanted other alternative means of communicating news and information with our members. TradeNet allows us to setup our groups and then broadcast SMS extension messages to them cheaply and rapidly..."
Assoc. Natural Plant Products, Ghana

"I need better information about potential crop harvests if I'm going to buy maize locally. Getting production data on TradeNet from community groups makes this feasible..."
Raja A. Najjar (CEO)
Aqua Farms Industries Ltd., Ghana

"After registering with Tradenet, I got a call from a trader in London who found my information on the internet and wanted to do business. He has a groundnut farm here in Ghana and wants someone to sell his goods for him on the market. I was amazed..."
Malik Abdul,
Nima Market,
Ghana

www.tradenet.biz info@tradenet.biz +23321258803

# tradenet in use

tradenet.biz
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## 1 a free market information service

### realtime market prices
realtime data from the markets, with extensive price histories, and powerful analytical search tools comparing markets or commodities over time...
(650,000 prices so far)


### commodity-specific portals
unique perspectives on commodities for your region; listing stakeholders, prices, offers, latest news and more...
(439 commodity varieties online)


### multi/single country profiles
comprehensive online portals for countries showcasing markets, commodities, prices, offers, contacts, groups, news, files... (13 countries online)

### interactive maps
interactive mapping tools which allow users to view contacts, offers, price data in a particular region...


### tradepoints
in-market kiosks providing data collection, support for local communities in accessing and configuring tradenet services, and upward feedback for product development

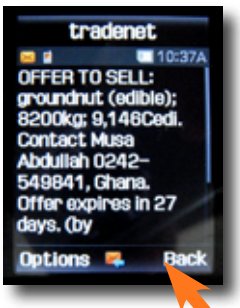
## 2 a commercial SMS market toolset

### SMS publish
whether from phone or web, our publish technology allows both users and group managers to broadcast extension, advocacy and commercial messages cheaply and instantly to targeted friends, groups or anonymous users...



### free user websites
customizable web spaces that profile products and services, list current and historical offers, and allow users to configure and manage their mobile services; users can upload content from their mobile phones.
(5,403 online)

### free group websites
powerful groupware that allows anyone to setup a group for free, add members, link to other groups, share content (privately or publicy) and setup mobile services...
(480 online)




### SMS alerts
automatic alerts delivered to users as soon as TradeNet receives them. Matches on commodity and region prompt alert distribution. Daily price updates available too...
(60,252 SMS so far)

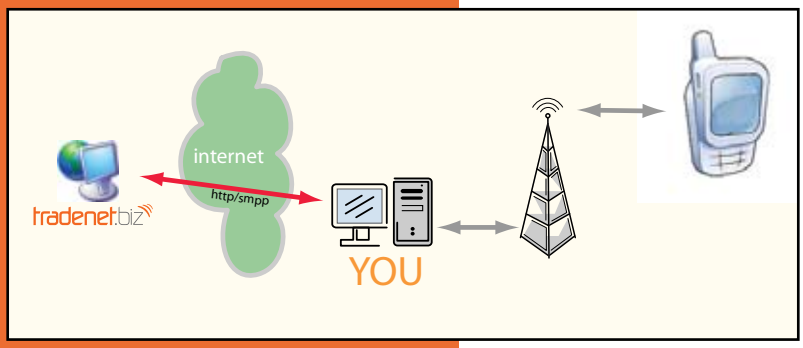
NEW

### supply-chain management
producers can submit production data to the web from mobile phones; buyers can track planting, harvests, pests, rainfall, transport from tradenet reporting tools on google maps. Supply chain financing modules can provide cashless networks between stockists, lenders, buyers and producers...transporters can notify of pickups...
(launching Q1 2008)

www.tradenet.biz info@tradenet.biz +23321258803

africa's first continent-wide mobile2mobile trading network

# at-a-glance SMS connect




if you are a mobile operator, or represent mobile operators, it's easy to connect to TradeNet and offer realtime price data, or share offers and bids between your subscribers. You simply need to pass over the subscriber message to our SMS gateway. We will process the request, formulate a response, and send you the message to relay to the subscriber.

you need to configure your server to talk to our servers using TCP over the internet -- simply POST http requests to us with the required validation and parameters

subscriber messages are passed in realtime from the network to our content system via HTTP or SMPP over the internet

## what can users do?

users can use your network to upload price data from a market, upload offers to bid or sell or request current market prices. Some services require us to recognize a users mobile number (ie. they must be registered) other services (like price requests) can be anonymous. You do not require any logic on your service: we have various engines customized for TradeNet that will parse the subscriber requests, insert, update or read our database, and then we will pass back the response to you. In this sense you act only as a 'relay' between the subscriber and our service.

## parameters required

| | |
|---|---|
| **username** | your account on mobillia gateway |
| **password** | your password on mobillia gateway |
| **message** | subscriber's text message |
| **msisdn** | subscriber's phone number |
| **scode** | shortcode assigned |
| **r_url** | redirect URL for answer |

## using HTTP/S

we highly recommend you use http POST when making requests instead of GET for added security. All requests should be sent to:
**http://api.mobillia.net/request/**
**https://api.mobillia.net/request/**
An example URL would be:
http://api.mobillia.net/request/?username=mtnmali& password=1234& message=maiw&msisdn=225244876767&scode=1888

## using SMPP

For us to configure the SMPP interconnect, we would require the following:IP or domain name of SMSC; system ID; system password; VPN link (if applicable) for security; host server name or IP; authentication credentials ... username/password or use of public key authentication.

## where are the codes?

each country can define their own set of SMS codes on tradenet for commodities and markets. You will need to work with the local country managers of tradenet to define and refine the codes online through their interface. But the codes for your country can be found at www.tradenet.biz/codes

## next steps?

you will be emailed a username and password.
Then try to compose an HTTP in your browser to test!

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