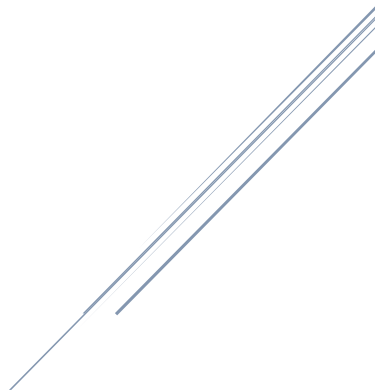




PRESENTED TO:  
MR BIG MAN  
MANAGER  
COMPANY NAME

BY:  
MICHAEL WAKAHE  
MANAGING DIRECTOR  
COMPANY NAME

JULY 2010



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## 1. Introduction

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*Company Name* is a microfinance institution that caters for sole proprietors, partnerships and small businesses. It has enables young businesses to grow through its lending facilities. It will be in need of various web and mobile services in order to power its growth. *Michael Wakahe* is able to create various web and mobile features upon request. We can also provide the hosting services.

This proposal serves to identify services that we offer that match your needs. It includes an overview of website features, software design and mobile applications. We would like to take on the responsibility of building your solution. We label it as “solution” and not just website because it entails numerous facets including security, support, training, backup and disaster recovery management.

We consider our servers as being high availability implying that they have minimal downtime. They are hosted with [UUNET](http://www.uunet.co.ke)<sup>1</sup>, Kenya's number 1 corporate ISP. Our servers are [HP Proliant DL380 G5](http://h10010.www1.hp.com/wwpc/us/en/sm/WF04a/15351-15351-3328412-241644-241475.html)<sup>2</sup>, one of the world's best selling servers in terms of number of units sold.

We utilize Linux™ as our operating system, specifically [Debian 5](http://www.debian.org)<sup>3</sup>, a very popular distribution from which other linuxes including *Ubuntu* are based on. The Linux environment ensures hassle free administration as there are no viruses and trojans to be worried about. Linux, which is a flavour of UNIX, carries with it much strength traditionally associated with UNIX. It also makes efficient use of hardware and has no license fees.

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<sup>1</sup> <http://www.uunet.co.ke>

<sup>2</sup> <http://h10010.www1.hp.com/wwpc/us/en/sm/WF04a/15351-15351-3328412-241644-241475.html>

<sup>3</sup> <http://www.debian.org>

Our main databases are [MySQL](http://www.mysql.org)<sup>4</sup> and [PostgreSQL](http://www.postgresql.org)<sup>5</sup>. *MySQL* is the most popular database in terms of usage whereas *PostgreSQL* is the world's most advanced open source RDBMS. We can also cater for [Oracle](http://www.oracle.com/us/products/database/index.html)<sup>6</sup> for very large applications. We specialize in developing software utilizing [Java](http://java.sun.com)<sup>7</sup>, in particular [Java Enterprise Edition \(Java EE\)](http://java.sun.com/javae)<sup>8</sup> and [Java Micro Edition \(Java ME\)](http://java.sun.com/javame/index.jsp)<sup>9</sup>. We leverage on open source technologies based on their strengths and community support.

We also cater for mobile technologies and would be able to extend your solution to include mobile features should you deem it necessary in future. Mobile technologies include SMS, USSD, WAP, mobile applications and mobile websites. Michael Wakahe has been approved by the [Communications Commission of Kenya \(CCK\)](#) as an Application Service Provider. We are also seeking other industrial affiliations and qualifications.

The features have been classified into *External*, *Internal* and *Mobile*. External features are those that are publicly available to everyone. Internal features aid in the inside workings of your firm. Features related to cell phones are termed as Mobile.

Some features share common attributes with others and therefore can be developed simultaneously whereas others are almost entirely unrelated. We will ensure that there is an almost seamless integration between all the features requested.

The following is a list of the features that can be included in the *Company Name* platform. After reviewing them we will then be able to prepare a schedule and quotation for the same. We can have a review session at the end of the time period to assess the effectiveness of the implemented modules as well as suggest further modules to be created.

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<sup>4</sup> <http://www.mysql.org>

<sup>5</sup> <http://www.postgresql.org>

<sup>6</sup> <http://www.oracle.com/us/products/database/index.html>

<sup>7</sup> <http://java.sun.com>

<sup>8</sup> <http://java.sun.com/javae>

<sup>9</sup> <http://java.sun.com/javame/index.jsp>

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## 2. External Features

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**Logo and Letterhead:** *Michael Wakahe's* logo and letterhead are demonstrated in this document. Maintaining digital copies of both allows the institution to easily create official documents.

**Domain Name:** This is a human-readable addresses used on the Internet. An example domain name is company.co.ke. You may also opt to use a domain name indicating mobile content for example company.mobi or company.mobi.ke. Hyphens are to be avoided in domain names as they are not friendly to search engine robots and other processes.

**Email Addresses:** These would be created together with a new domain name. Emails can be person specific e.g. [tabitha.wachira@company.co.ke](mailto:tabitha.wachira@company.co.ke), role specific e.g. [info@company.co.ke](mailto:info@company.co.ke) or department specific e.g. [sales@company.co.ke](mailto:sales@company.co.ke). Email aliasing, whereby emails are forwarded to other inboxes, is also possible.

**Email Lists:** These are mechanisms for sending email to a large number of recipients. They can be one-to-many or many-to-many. For example, they can allow for informing clients on new services or having a discussion forum. Precautions will be taken to avoid spamming, viruses and inappropriate messages.

### Website

The external website is further broken down into the following subcategories:

- Static Content: This type of content hardly changes on a day-to-day basis. Items in this category can include the Company Profile, Services Offered or Catalogue of Products, Brochures and Educational Materials, Calendar of Events and Contacts.
- Flash Interactivity and Animation: Flash Interactivity allows for pages that seem more 'alive'. Animations can greatly ease in conveying particular messages graphically.

However similar effects can be achieved with other technologies, in particular JavaScript.

We do not normally include Flash into a website unless explicitly requested to do so.

- Bulletin Board: This can be used for newsletters on new products and services or the director can use it to give weekly/monthly advice about the industry.
- Message Forum: This is an online discussion site allowing for registered members to post messages. Typically messages revolve around particular topics. Rules on how and when members can post messages are created. For example, posts may not exceed a certain length, or may require moderator approval. Extra features that can be incorporated into a message forum include opinion polls and aggregator feeds.
- Polls: These are conducted to obtain the opinions of various products or services. For example large organizations with numerous staff members can use polls to evaluate the effectiveness of a particular training exercise.
- Photo Gallery: A dynamic roll of photos within various previous works.
- Audio & Video Gallery: Audio and video files are relatively large and require a noticeable amount of time to download before they can be viewed. This delay can be avoided by the use of streaming, where after a small portion of the file is downloaded, playing or viewing begins and the rest of the file continues to download. Real-time streaming involves the transmission of audio or video as it is being captured.
- Search: This feature is especially useful when there is a lot of content on the website.
- Forms: These can be utilized for membership registration and acquiring various feedback.
- Games: These engage website visitors in various ways. For example trivia games can challenge a person browsing on their knowledge of renewable energy.
- Instant Messaging: These pass messages immediately in a one-to-one or a one-to-many communication. They act like the common chat programs - *MSN*, *AIM*, *ICQ* and *Gtalk*. However they are embedded within the browser. *Google* and *Facebook* have examples of clients built to work within the web browser.
- Multiple Languages: Your website can be created in a variety of languages, with users being able to select the language of preference from a drop-down menu or buttons.
- Shopping: Some of the components included here are Shopping Carts and Currency Converters.

- Website Analytics and Statistics: Usage statistics include time, city, country and pages visited. Statistics can be emailed in text or PDF or viewed on a website in the form of charts or bar graphs. Web analytics is the measurement, collection, analysis and reporting of internet data for purposes of understanding and optimizing web site usage.
- Wiki: This is a type of website that allows users to easily add, remove, or otherwise edit and change some available content, sometimes without the intervention of a moderator.

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### 3. Internal Features

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Many of the features mentioned below are typically contained in an Enterprise Resource System (ERP). There are trade-offs between acquiring off-the-shelf solutions and creating custom solutions.

Off-the-shelf solutions are readily purchasable and can be up and running in a short time. However they have typically high purchase and maintenance costs, require configuration specific to institutions and do not adequately cater for any one institution since they are built with generalized concepts. Custom built solutions take time to be created. However they usually reflect the needs of an institution more accurately.

The following are some of the elements that can be addressed internally:

**Content Management:** This is used to create, edit, manage, search and publish various kinds of digital media and electronic text. The content managed may include computer files, image media, audio files, video files, electronic documents and web content.

**Financials:** These include accounting, budgeting, financial statements, invoicing and inventory management.

**Human Resources Management:** Included in this section are profile storage, training, resource planning, hiring, leave scheduling, feedback, appraisal, payroll, time and attendance, rostering and benefits.

**Project Management:** Activities in this section include costing, billing, time and expense, activity management (calendarizing) and contacts.



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## 4. Mobile Features

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**Bulk SMS:** This allows for various alerts to be sent to specific groups of people. Messages can be one-way or two-way and can be triggered by a variety of events or done manually. We presently work with international providers to cater for this service. International providers use long codes. We are in the process of creating a fully fledged short code platform.

**Desktop SMS:** We can design a desktop based application that sends SMS via modem. For example it can contain a list of contacts and send a message to a specified subset of those contacts.

**MMS:** Multimedia Messaging Service is similar to SMS but carries multimedia content. This content includes videos, pictures, text pages and ring tones. It is more complex than SMS as different phones have different capabilities to handle multimedia content. An example application for MMS can allow users to take photos with their phone camera and have them uploaded to their blog instantly.

**USSD:** Unstructured Supplementary Service Data is a GSM standard that is suitable for session based interaction. The most common examples of USSD are account top-up and checking airtime balance. You can have your own USSD code reserved and programmed with your menu. Some mobile banking products including MPesa utilize USSD.

**SIM Toolkit Programming:** Simple menu driven programs can be created to reside on a SIM card. They will not be large in size and will not also cater for graphics. We are able to design such applications.

**Mobile Applications and Websites:** These harness the power of the Internet through the phone. The mobile devices have to be data capable and activated. Applications are created on various platforms including Java, Symbian, Blackberry, iPhone, Palm OS and Windows CE.

Applications can be used to accomplish various tasks including push mail and providing an interface to features that would normally be accessed through a web browser. Mobile websites are built with the needs of tiny devices in mind. They are not just miniaturized versions of a website.

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## 5. Other Considerations

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These are auxiliary considerations for the services provided, some of which will be included in a Service Level Agreement (SLA). An SLA is much more comprehensive than what is given here and is a prerequisite for successful maintenance of services provided.

- Additional Storage Space: If required, we can provide you with additional space beyond the default provided for web/software hosting. Additional space will be billed separately.
- Monitoring & Security: Our UNIX platform provides for a strong security base and we are in the process of installing various security and monitoring software including intrusion detection, firewall, spam filters and performance monitoring. We also do best practice programming to ensure high integrity for your data.
- Disaster Recovery: We strive to do our best in the event of a major failure. This includes backups and scheduled reports.
- Performance: A key part of a Service Level Agreement deals with monitoring and measuring service level performance. Essentially, every service must be capable of being

measured and the results analysed and reported. The benchmarks, targets and metrics to be utilised must be specified in the agreement itself.

- Support & Problem Management: Here we will agree on how to resolve issues, modes of communication for problems arising and availability of staff, either on-site or over telephone.
- Intellectual Property Rights and Confidential Information: We do our best to ensure that your data is not availed to any one other than the owners or people specified by the owners. For example, we would not accept phone call requests unless from the owners themselves. Other clients hosted with us will be unable to access your information.

## 6. Plan of Action

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The following is a suggested breakdown of the milestones to be accomplished. They can be ordered to your convenience.

### **6.1. Migration of Current Database**

Presently you are using *Microsoft® Access 2007* as your RDBMS. This will not scale for web use and for more demanding requirements. We propose to migrate it to *MySQL 5*. *MySQL* may be utilized for desktop purposes as it also has graphical interfaces. It is also cross-platform and free (although there exists a commercial version).

Although it can be used as a desktop application, *MySQL* is best suited for web environments. In addition to schema migration, we would also recommend programming the business logic around the database using either *PHP* or *Java*. This would allow for web access. A desktop application can also be created that accesses your database.

A web application has the advantage that it can be accessed by yourselves or your clients remotely and later integrated with your website. A desktop client can also access the database remotely though it comes with some downsides.

Migration is not just simply dumping tables from one database and importing them in the other. We also ensure referential integrity, normalization, field constraints, network settings, query design among other features.

Below is a summary of the work. Some activities can be done concurrently. Prices are exclusive of 16% VAT.

| Feature             | Price (Kshs.) | Estimated Time | Comments  |
|---------------------|---------------|----------------|---|
| Data Migration      | 1/-           | 1 week         | Requires at least half a day to observe usage of current database in live environment.  |
| Web Application     | 2/-           | 1 month        | This will be an iterative process where you view and comment on features as they are added. This is not inclusive of hosting. |
| Desktop Application | 2/-           | 1 month        | Also an iterative process.  |

## 6.2. Website Design

Web presence is a must for modern businesses. It raises a firm's profile to a professional status. We also recommend having your own logo and letterhead to be used on your official documents such as business cards and proposals.

We will also be able to provide you with basic email services that can be accessed through a website or a desktop application such as *Microsoft Outlook*. We can also provide for mailing list capabilities if desired.

Below is a summary of the activities in this section. Some activities can be done concurrently. Prices are exclusive of 16% VAT.

| Feature             | Price (Kshs.) | Estimated Time | Comments  |
|---------------------|---------------|----------------|---|
| Logo and Letterhead | 5/-           | 3 weeks        | To be delivered in appropriate digital format.  |
| Domain Name         | 5/-           | 3 weeks        | Each domain name requested will attract an annual fee for renewal. Some domain names are cheaper than others, for example .mobi.ke is cheaper than .co.ke. We are putting together a comprehensive price list.  |
| Website             | 4/-           | 2 months       | This is a basic website with expected features such as Company Profile, Products and Contacts. Additional features such as Multiple Languages, Flash or Website Analytics will have to be negotiated separately. We will offer you a variety of templates based on your colours. We will rely on you to provide the literature. This is not inclusive of hosting. |
| Email               | 1/-           | 1 month        | This is a one-time setup fee for up to 20 emails and is not inclusive of hosting. Additional emails can be negotiated for at a fee. This price applies if we host your email. A different price applies if  |

|            |     |         |   |
|------------|-----|---------|---|
|            |     |         | you require us to set up an email server for you.   |
| Email List | 2/- | 1 month | This is a one-time setup fee for up to 20 email lists and is not inclusive of hosting. Additional emails can be negotiated for at a fee. This price applies if we host your email. A different price applies if you require us to set up an email server for you. |

### 6.3. Office Tower Workstation

Company Name may opt to purchase and customize a workstation to reside in its Nairobi offices. It may be used internally for record keeping and data backup. Coupled with a static IP, the workstation can offer various services externally to both Company Name staff and clients. It can be converted into a fully fledged server with database, website and email capabilities. It may also act as a secondary server for backup services.

The following are some of the features we recommend for such a workstation:

Processor: Single Quad-Core Intel Xeon or AMD Opteron

Storage: 300GB or more, SAS or SATA Hard Drives

Memory: 4GB or more

Operating System: Any variant of Linux or Microsoft® Windows® Server 2008, Standard Edition

Antivirus: Any suitable corporate antivirus solution if utilizing Windows operating system.

RAID: Yes preferably

Drive Bays: 1 DVD+/-RW

Communications: 2 embedded Gigabit Network Interface Cards

We recommend purchasing hardware from authorized vendors as maintenance costs will be cheaper in the long run. Expect to spend between Kshs. 1/- and Kshs. 4/- on such a machine, depending on hardware and software configurations.

We recommend [MFI Enterprise Solutions](http://www.mfios.com)<sup>10</sup> for Dell servers and [Bytech Engineering](http://www.bytech.co.ke)<sup>11</sup> as a HP vendor. However there are many other authorized local partners for both Dell and HP.

Below are two such examples of suitable machines:



Figure 1: Dell® PowerEdge T300



Figure 2: HP Proliant ML350 G5

Below is a summary of the costs involved in this section. Our costs are exclusive of 16% VAT.

| Feature                                  | Price (Kshs.) | Estimated Time  | Comments  |
|--|---------------|---|---|
| Tower Workstation                        | 1/- to 4/-    | 1 to 3 weeks, depending on vendor & hardware availability | Some vendors deliver to your doorstep. If running on Windows, software licenses are usually renewable annually at a cost.   |
| Assistance in Tower Workstation Purchase | 3/-           | 1 week  | We will provide for you specifications and liaise with the hardware vendor  |
| Tower Workstation Configuration          | 1/- and above | 1 week or more  | This depends on the exact configuration to be done, including network settings, firewall, appropriate operating system and software. We recommend Linux over Windows for stability. |

<sup>10</sup> <http://www.mfios.com>

<sup>11</sup> <http://www.bytech.co.ke>

### 6.3. SMS Technologies

We are able to utilize international carriers to provide Bulk SMS. The SMS can be triggered manually or automatically. A manual example is where we provide a website form through which a Company Name employee creates a message and selects the targeted phone numbers. An automated example is where SMS are automatically send to users whose payments are due.

SMS can be inbound or outbound. Outbound SMS are sent to the mobile whereas inbound are received by a system of desire. Inbound messages can be stored in a database, written to a text file, converted to email or a combination of the above.

Presently international SMS usually work inbound and outbound for Safaricom and Zain but only outbound for Yu and Telkom. The user may or may not be charged a normal rate for sending SMS to the system (inbound).

We can also develop a Desktop SMS application that uses a modem. The costs of the SMS are the same as those from using a normal phone. The Desktop SMS application may also access the primary database to obtain a list of contacts.

We are presently working to create a USSD and Short Code platform but do not presently have one. We will also be offering SIM Application Toolkit programming in future.

Below is a summary of the costs involved for this section. Costs are exclusive of 16% VAT.

| Feature                               | Price (Kshs.)  | Estimated Time  | Comments  |
|---------------------------------------|--|-----------------|---|
| Bulk SMS                              | Kshs. 2/- one time setup fee, Kshs. 5.00/- outbound and Kshs. 2.00/- inbound | 3 weeks         | Up to 10,000 SMS at this rate from international carrier. Higher volumes imply lower cost. Must purchase in bulk of not less than 2000 SMS. |
| Integration of Bulk SMS into Platform | 1/- and above, depending on estimated effort                                 | 2 weeks or more | There are multiple points at which the Bulk SMS can be integrated into the system.  |
| Desktop Application                   | 2/- and above depending on features, Kshs. 5/-                               | 1 month or more | This is not inclusive of costs incurred due to airtime usage and modem purchase.  |



|                   |                              |                  |   |
|-------------------|------------------------------|------------------|---|
|                   | annual licensing             |                  |   |
| USSD / Short Code | In excess of Kshs. 2/- setup | 2 or more months | We will have one in future which will imply attractive rates. |

#### **6.4. Mobile Website and Application Design**

Mobile applications can allow access to the platform via mobile devices capable of hosting these applications. Mobile devices today can be thought of as mini versions of computers. You can download and install applications on them.

These applications can allow for remote access of the Company Name platform through the Internet on the phone and optionally through SMS. Internet through the phone is presently very cheap, an hour of browsing may consume not more than Kshs. 5.00/-

Today there are numerous platforms available for mobile application development. Some platforms are at the operating system level yet others are software within the operating system. A few of the more popular platforms include Java Mobile, Symbian, Windows, Pocket PC, Android, BlackBerry and iPhone.

Each platform has its pluses and minuses. For our Kenyan market, we recommend starting off with Java Mobile in order to capture the largest number of phones.

There are numerous modes of mobile application provisioning, including WAP download, WAP push, Bluetooth and serial / USB cable. By far the most common is WAP download. You can also give away phones that have the applications pre-installed.

Mobile friendly websites are designed for tiny devices in mind. These websites are created in a special way but reside on a normal web server. A mobile device accessing the main page of Company Name can be redirected to the mobile page automatically.

Below is a summary of the costs involved for this section. Costs are exclusive of 16% VAT.

| Feature            | Price (Kshs.)   | Estimated Time                         | Comments   |
|--------------------|---|--|--|
| Mobile Application | Kshs. 6/- for Java platform, similar cost for additional platforms. | 1 month or more, depending on features | We recommend starting with Java platform.                                |
| Mobile Website     | Kshs. 6/-   | 1 month or more, depending on features | Mobile devices will automatically be detected and directed to this page. |

### **6.5. Hosting of Services in Nairobi Offices**

Company Name may opt to host some or all of its services in its downtown offices. This can be achieved when it has acquired a robust tower workstation and has a static IP from an ISP. Company Name may also want to contract Michael Wakahe in maintenance of the setup.

We can agree for services that are to be supported in a Service Level Agreement (SLA). These services may include network setup and monitoring, remote or on-site backup, software configuration and troubleshooting.

Here the costs will be highly dependent on services requested, hardware platform and operating system. For example it is easier to remotely administer a Linux server as compared to a Windows server. We would probably not charge less than Kshs. 1000/- plus 16% VAT per month for maintaining such a setup.

### **6.6. Hosting of Services in Michael Wakahe Servers**

We are able to host all web services mentioned in this proposal in our servers at UUNET. We intend to grow our server footprint to other providers including those abroad. This will provide for redundancy.

Our servers have been prepped to receive such services and therefore setup is faster. We normally provide for at least 500MB disk space per account. If not completely used by web applications, this space can also be used for remote backup, for example for laptops used by staff of Company Name. We charge additional space at Kshs. 2/- plus 16% VAT per month.

Once again pricing is strongly dependent on features requested, which are to be stated in an SLA, but we estimate that for your solution we would not charge less than Kshs. 1/- per month plus VAT.

\*\*\* All prices and timelines above are subject to negotiation. We are available to meet and discuss further at your convenience. We can then plan the roadmap and deliverables during the entire lifecycle of the project.

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## 7. Additional Information

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The following are additional documents that can be produced upon request. Some will be complete whereas others would be draft before a solid roadmap has been decided upon. Many will definitely be produced before the end of the project.

1. A detailed *Project Plan* including scope of work, deliverables and timelines, feasibility studies, staff and budget allocations, Gantt charts, flow charts etc.
2. A document expounding on technical details of the system e.g. general security concepts like cryptography and Public Key Infrastructure (PKI), mobile technologies such as WAP and GPRS, server side functionalities such as cron jobs, servlets and RAID.

3. *Systems Requirements Specification (SRS)*. This document is used in the elicitation process and highlights the functional, non-functional and pseudo requirements of the system.
4. *System Design Document (SDD)*. This is a detailed working of the actual system, designed for technical personnel. It also includes diagrams of various components.
5. *System Test Case Document (STC)*: This document highlights the steps taken to verify that the functional and non-functional requirements have been met by the system. It is used in the Quality Assurance (QA) phase of software design.
6. *Disaster Recovery Framework and Incident Response Policy*. Disaster Recovery is the plans, procedures and controls, determined to recover from disaster with minimal disruption to the systems and customers. An Incident Response Policy provides a clear understanding of what decisive actions will be taken when a security breach or disaster occurs. It also details who is responsible for investigating and dealing with such problems.
7. *Information Resources*. All data, information as well as the hardware, software, people and processes involved with the storage, processing and output of such information. This includes networks, servers, PC's, storage media, printers, photocopiers, fax machines, supporting equipment, fallback equipment and backup media.
8. Other prospective applications. This would enlighten you on what other technologies Company Name can utilize in its microfinance services. For example how mobile applications can be used to create savings accounts.
9. Market research. This can include statistics of similar systems.
10. Contractual documents. This include Service Level Agreements (SLA), clauses or specifications that govern contracts including terms and conditions, subcontracting requirements, payment schedules, ownership of the work product, certifications and representations, and so on.
11. Documentation - training manuals, procedures of installation, maintenance and auditing; standards to be adhered to for correct functioning of system.
12. Curriculum Vitae of key personnel who will implement the solution.
13. The company profile.
14. Any other pertinent documents.