Low cost technologies in the scale up of health insurance

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Overview of presentation

• Background

• Objective of the system

• Key challenges addressed by Insurance Management Information System (IMIS)

• IMIS features (system description/demo)

• Implementation challenges (and how they were dealt with)

• Impact and scaling up
Background

- SCIH in 2011-12 started development of IMIS on an SDC funded Health Promotion and System Strengthening (HPSS) project in Tanzania (ongoing)

- Currently developed using:
  - mobile phone applications: Android 2.3
  - server: MS Server 2008, MS SQL Server 2008
  - clients: any internet browser
  - Programmed in .net

- Initially developed for Tanzania but soon after adopted by different types of implementers in other countries supported by various donors

- The system is currently shared with all countries (coordinated by Swiss TPH) under a free of cost license agreement (granted by SDC) and is soon to be released as an Open Source application
Objective of the system

A comprehensive insurance management IT system designed for:
- Supporting business processes of new/existing insurance schemes
- Ensuring availability and preciseness of information
- Increasing speed of operations/reducing processing time
- Introducing claims management and payment system
- Reducing fraud

Designed for health insurance schemes but can be expanded to other schemes involving beneficiaries and entity managing benefits, eg. vouchers, health equity funds, other insurance forms, etc.
Current implementation status:

- **2013:** Standardize 4 existing schemes
- **2012:** Reforming existing CHF in Dodoma, Tanzania
- **2014:** Pilot for a national scheme in 3 districts
- **2015:** Extended to reform CHF in 2 more regions in Tanzania
Key features of IMIS - I

- **Professionalization and fraud reduction**: Comprehensive system for managing a health insurance scheme along with in built process checks (eg. claim validity)

- **Cost effective identification mechanism**: Pictures on phones used for identity and eligibility verification (possibility to update on annual basis). At the same time possible to use other mechanisms!

- **High outreach at low cost**: Takes processing closer to clients and encourages active enrolment structures (cuts down transaction time – easy to use and process in remote areas)
Key features of IMIS - II

• **Usability**: Uses easily accessible technology (mobile phones - “client friendly”) – easy to implement, scale and further innovate (android platform)

• **Scalability and financially viability**: Recurring costs (hardware, maintenance, etc.) costs are low. Projections from a rural district in Tanzania ~300Kpop shows admin ratio at 30% coverage rate to go below 35%

• **Flexibility** – multiple products, multiple insurance models, multiple structures, multiple insurance rules, multiple languages (currently English, Swahili and Nepali), possibility to change verification mechanism, etc.

• **Social Accountability**: unique feedback app
Key features of IMIS - III

- **Infrastructure limitations**: Online and offline capability (both on computer and mobile phone)

- **Expanding scheme**: System managed through central server which can allow for gradual roll out (geographically or feature wise) in a modular way; regardless of scheme being centralized or decentralized

- System allows "**portability**" for clients (i.e. individual cards allowing clients from district A claiming in District B)

- **No license fee** and (soon to be) open source
Communication within IMIS
Mobile Phone Applications

IMIS apps developed and installed into a smart phone
Data transfer in insurance system using mobile phone

- acquiring of photos
- renewal of a policy
- acquiring of feedbacks
- retrieving of coverage
- submission of bills
Introduction to using IMIS
Modular structure of IMIS: constructing insurance schemes
Constructing an insurance scheme: Actors
Constructing an insurance scheme: Services and items
Constructing an insurance scheme: Price list
## Product Configuration – Services and Items

### Medical Services

<table>
<thead>
<tr>
<th>CODE</th>
<th>NAME</th>
<th>TYPE</th>
<th>CATEGORY</th>
<th>PRICE</th>
<th>LIMIT O</th>
<th>LIMIT R</th>
<th>LIMIT E</th>
<th>ORIGIN</th>
<th>ADULT 0</th>
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<td>Preventive</td>
<td>Simple Service</td>
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<td>C</td>
<td>C</td>
<td>P</td>
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<td>C103</td>
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<td>C</td>
<td>P</td>
<td>100.00</td>
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### Medical Items

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<tr>
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<th>NAME</th>
<th>TYPE</th>
<th>PACKAGE</th>
<th>PRICE</th>
<th>LIMIT O</th>
<th>LIMIT R</th>
<th>LIMIT E</th>
<th>ORIGIN</th>
<th>ADULT 0</th>
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<tr>
<td>D1</td>
<td>Adrenaline</td>
<td>Drug</td>
<td>Inj.</td>
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<td>C</td>
<td>C</td>
<td>C</td>
<td>P</td>
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<td>D10</td>
<td>Tatanus Toxoid</td>
<td>Drug</td>
<td>Vac.</td>
<td>200.00</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>P</td>
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<tr>
<td>D123</td>
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<td>Vac</td>
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# Product Configuration – Limits

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<tr>
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<td>Grace Period Renewal</td>
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<td>Registration Lump Sum</td>
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<td>Registration Fee</td>
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<tr>
<td>Assembly Lump Sum</td>
<td></td>
</tr>
<tr>
<td>Assembly Fee</td>
<td></td>
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<tr>
<td>Start Cycle 1</td>
<td>Jan</td>
</tr>
<tr>
<td>Start Cycle 2</td>
<td>Feb</td>
</tr>
<tr>
<td>Start Cycle 3</td>
<td>Aug</td>
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<tr>
<td>Start Cycle 4</td>
<td>Nov</td>
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<td>Deductible Treatment</td>
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<td>Policy</td>
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<tr>
<td>Extra Member Ceiling</td>
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<td>Maximum Ceiling</td>
<td>100000.00</td>
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<td>Consultations</td>
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<td>Deliveries</td>
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<td>Hospitalizations</td>
<td></td>
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<tr>
<td>Visits</td>
<td></td>
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<tr>
<td>Number</td>
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</tr>
<tr>
<td>Ceiling</td>
<td></td>
</tr>
<tr>
<td>Distribution</td>
<td>NONE</td>
</tr>
</tbody>
</table>

**Save**  [Cancel]
IMIS: Screen shots
Login Screen

IMIS Login

User Id

Password

Login
Home page

Current User
Siddharth Sristava (Skidharth)

Roles
Enrollment Assistant
NSHI Manager
NSHI Accountant
NSHI Clerk
NSHI Medical Officer
NSHI Administrator
Receptionist
Claim Administrator
Claim Contributor

District
Kailali
Baglung
Tirah

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Enrolment
Mobile Phone Application- Enrollment - I

Phone scans the QR code to get the member ID being enrolled and ID card of the member is issued on the spot.
Mobile phone applications- Enrolment - II

1. acquiring of a photo of an insuree by a mobile phone
2. sending it on the central server
3. assigning it to the record of the insuree (automatically)
## Payment Information

### Family/Group Details
- **NSHI Number**: 000000070
- **Last Name**: Bajracharya
- **First Name**: Bikesh
- **Phone Number**: 123456777
- **District**: Ilam
- **Ward**: Pyang
- **VDC/Municipality**: Pyang
- **Confirmation Type**: A

### Contribution
- **Payers**: Health
- **Category**: Contribution and Others
- **Contribution Paid**: 3,350.00
- **Receipt Number**: r1234
- **Date of Payment**: 23/09/2014
- **Type of Payment**: Cash

### Policy Details
- **Policy Value**: 3,350.00
- **Balance**: 0.00
- **Contribution**: 3,350.00
- **Policy Status**: Active
Claims
Mobile phone applications - Receiving Patients

1. Insuree’s ID number read by phone through QR code

2. Sending it on the central server

3. Retrieving photo and information on coverage
Mobile phone applications- Entering claims

1. Insuree’s ID number read by phone through QR code

2. Claim details entered

3. Sending it on the central server
Selection for medical review and feedback

**Select Criteria**

- **District**: Select a District
- **HF Code**: Select HF Code
- **Claim Admin**: 
- **NSHI Number**: 
- **Claim Code**: 
- **Health Facility**: 
- **Visit (To) Date From**: To
- **Visit (To) Date To**: 
- **Review Status**: Select Status
- **Claim Date From**: To
- **Claim Date To**: 
- **Feedback Status**: Select Status
- **ICD**: ICD Code
- **Claim Status**: Checked
- **Visit Type**: Visit Type
- **Batch Run**: 

**Claim Selection Update**

- **Criteria Details**: 
- Random %
- Value 
- Variance %

**Claims Selected**

<table>
<thead>
<tr>
<th>CLAIM CODE</th>
<th>HEALTH FACILITY</th>
<th>DATE CLAIMED</th>
<th>FEEDBACK</th>
<th>REVIEW</th>
<th>CLAIMED</th>
<th>APPROVED</th>
<th>CLAIM STATUS</th>
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</thead>
<tbody>
<tr>
<td>s1</td>
<td>Tikapur Hospital</td>
<td>16/11/2014</td>
<td>Idle</td>
<td>Idle</td>
<td>2,400.00</td>
<td>2,000.00</td>
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<td>05</td>
<td>Tikapur Hospital</td>
<td>15/11/2014</td>
<td>Not Selected</td>
<td>Selected for Review</td>
<td>700.00</td>
<td>600.00</td>
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<tr>
<td>004</td>
<td>Tikapur Hospital</td>
<td>15/11/2014</td>
<td>Not Selected</td>
<td>Selected for Review</td>
<td>1,000.00</td>
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<tr>
<td>04</td>
<td>Tikapur Hospital</td>
<td>15/11/2014</td>
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<td>Selected for Review</td>
<td>1,100.00</td>
<td>1,100.00</td>
<td>Checked</td>
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<tr>
<td>002</td>
<td>Baglung Hospital</td>
<td>15/11/2014</td>
<td>Selected for Feedback</td>
<td>Selected for Review</td>
<td>400.00</td>
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<tr>
<td>hds</td>
<td>Ilam hospital</td>
<td>15/11/2014</td>
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<td>Not Selected</td>
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<td>12345</td>
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<td>1,050.00</td>
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<tr>
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<td>Ilam hospital</td>
<td>15/11/2014</td>
<td>Not Selected</td>
<td>Not Selected</td>
<td>120.00</td>
<td>110.00</td>
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</tbody>
</table>
### Medical Review

**HF Code**: KA-DH-TI  
**NSHI Number**: 000077450  
**Name**: Dipak Bista  
**Claim Total**: 2400.00

**ICD**: 084  
**Claim Code**: s1  
**Claim Date**: 16/11/2014  
**Approved**: 2000.00

**ICD1**  
**ICD2**: 084  
**ICD3**:  
**ICD4**:  
**Date Processed**:  
**Start**: 16/11/2014  
**End**: 16/11/2014  
**Valuated**: 0.0

**Claim Admin**: CA-K1  
**Visit Type**: Other

### Services

<table>
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<tr>
<th>CODE</th>
<th>QTY</th>
<th>VALUE</th>
<th>EXPLANATION</th>
<th>APP. QTY</th>
<th>APP. VALUE</th>
<th>JUSTIFICATION</th>
<th>STATUS</th>
<th>VALUATED R</th>
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</thead>
<tbody>
<tr>
<td>C125 Hemia</td>
<td>1</td>
<td>2000.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Passed</td>
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### Items

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<tr>
<th>CODE</th>
<th>QTY</th>
<th>VALUE</th>
<th>EXPLANATION</th>
<th>APP. QTY</th>
<th>APP. VALUE</th>
<th>JUSTIFICATION</th>
<th>STATUS</th>
<th>VALUATED R</th>
</tr>
</thead>
<tbody>
<tr>
<td>D10 Tatanus Toxoid 0.5ml</td>
<td>1</td>
<td>200.00</td>
<td></td>
<td>0.00</td>
<td></td>
<td></td>
<td>Rejecte</td>
<td>5</td>
</tr>
<tr>
<td>D10 Tatanus Toxoid 0.5ml</td>
<td>1</td>
<td>200.00</td>
<td></td>
<td>0.00</td>
<td></td>
<td></td>
<td>Rejecte</td>
<td>5</td>
</tr>
</tbody>
</table>

**Explanation**:  
**Claim Status**: Checked

**Cancel**
Renewals and Feedback

1. renewal/feedback requests sent to respective enrolment officer

2. renewal/feedback data collected and sent back to server
Regular reporting/monitoring through standard reports
Ad hoc reporting/monitoring/visual representation through Analytical Reports tool (excel based)
Common implementation challenges encountered

- Underutilization of system functionalities
  - Resistance to change (increased transparency)
  - Low retention rate of trained staff
  - Lack of adequate training of new staff

- Additional functionalities – blame the technology attitude!

- Tracking/following up clients from a large database (Renewals for rolling enrolment)

- Slow transition from old to new system (e.g. double claiming – paper forms as well as electronic)

- Cost of capacity building approach
Dealing with implementation challenges

• Standardized training modules

• Peer coaching approach

• Phased approach for training (relevant processes at the right time)

• System built organically and based only on implementation needs/requests (balancing new developments with strengthening of procedures and at times improved monitoring or adherence to procedures)

• Automated tracking of clients (Renewals) – new messaging functionality to remind clients and Enrolment officers (EOs), sending lists through data connectivity to EOs where available
Dealing with challenges

- Encouraging data entry
  - Creating key indicators affected by data entry – eg. emphasizing claims payment as key performance parameter through indicators like claims ratio, revenue generated by HFs
  - Use of only IMIS reports for performance reporting - at board meetings and other stakeholder meetings
  - Encouraging use of insurance data by pressure groups (policy level) as well as field level users. Eg. disease prevalence pattern, revenue of health facilities for MoH; client feedback and diagnosis vs treatment pattern for quality assessment tools; Integration with national health information systems (DHIS2) to contribute data to national systems

- Exploring further reduction in implementation cost (hardware) in urban areas by using EOs (and possibly even health facility staff) who already have android phones
Impact

- Currently IMIS in Tanzania and Cameroon supports insurance processing of about
  - 400,000 clients
  - 2500 enrolment officers
  - 700 users
  - 950 health facilities

- Nepal is rolling out as we speak (starting with one earthquake hit district)

- The system is now being supported by two major development agencies to create a Master version to allow for sharing of development features across countries and soon be released as an Open Source application.
Scaling up

- Increasing the in-country skill base to support IMIS implementation (incorporating modules in university programmes and through open source community platform)

- Android platform based apps are a “known technology” nowadays in many developing countries and proper documentation and in country capacity building efforts at implementation sites support scaling up

- Participating in hackathons in institute and other locations possibly

- Open source community platform to draw on existing open source developer community as well as creation of a user community to link practitioners/system implementers
Questions?

Thank you for your attention!