



# ICT4E Status Report

Merryl Ford  
CSIR Meraka Institute

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# CURRENT **ICT4E** activities in Cofimvaba

Learners & Home

ICT to Support  
Teaching & Learning



## ALL Cofimvaba schools

Quick win

- **Rollout of Dr Math**
- **Exposure to MXit educational tools**
  - QuizMax (Maths & Science exercises/quizzes)
  - Siyavula (Maths & Science textbooks)  
(Gr 10 – 12)
- **TIA-sponsored event at Cofimvaba High School**
  - Organised by District and Province
  - Matric Maths & Science revision exercises
  - Dr Math publicity (presentations, posters, instructions, etc)
  - Cell C donated sim cards to give free access to MXit
  - More than 1000 matrics reached



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# CURRENT **ICT4E** activities in Cofimvaba

Teachers & School

Support for a 21<sup>st</sup>  
Century School  
Environment

ICT to Support  
Teaching & Learning



## **Arthur Mfebe Pilot (June '12 – March '13)**

- **Mobile learning pilot at Arthur Mfebe**
  - ✓ NMMU Govan Mbeki Mathematics Unit (Maths & Science teaching system)
  - ✓ Ethnographic study
- **Launched 17-18 Aug**
  - ✓ Dr Math
  - ✓ QuizMax exercises via Mxit
  - ✓ Free sim card (plus R5 airtime) from Cell C
  - ✓ Tablets to teachers
  - ✓ Teacher Training
- **Planned (13 Sep)**
  - Technology and infrastructure
    - Wifi in school/Wifi Mesh local network
    - Content server
    - Charging & Safe storage solutions
  - Models (shared mobile devices)

Small proof-  
of-concept



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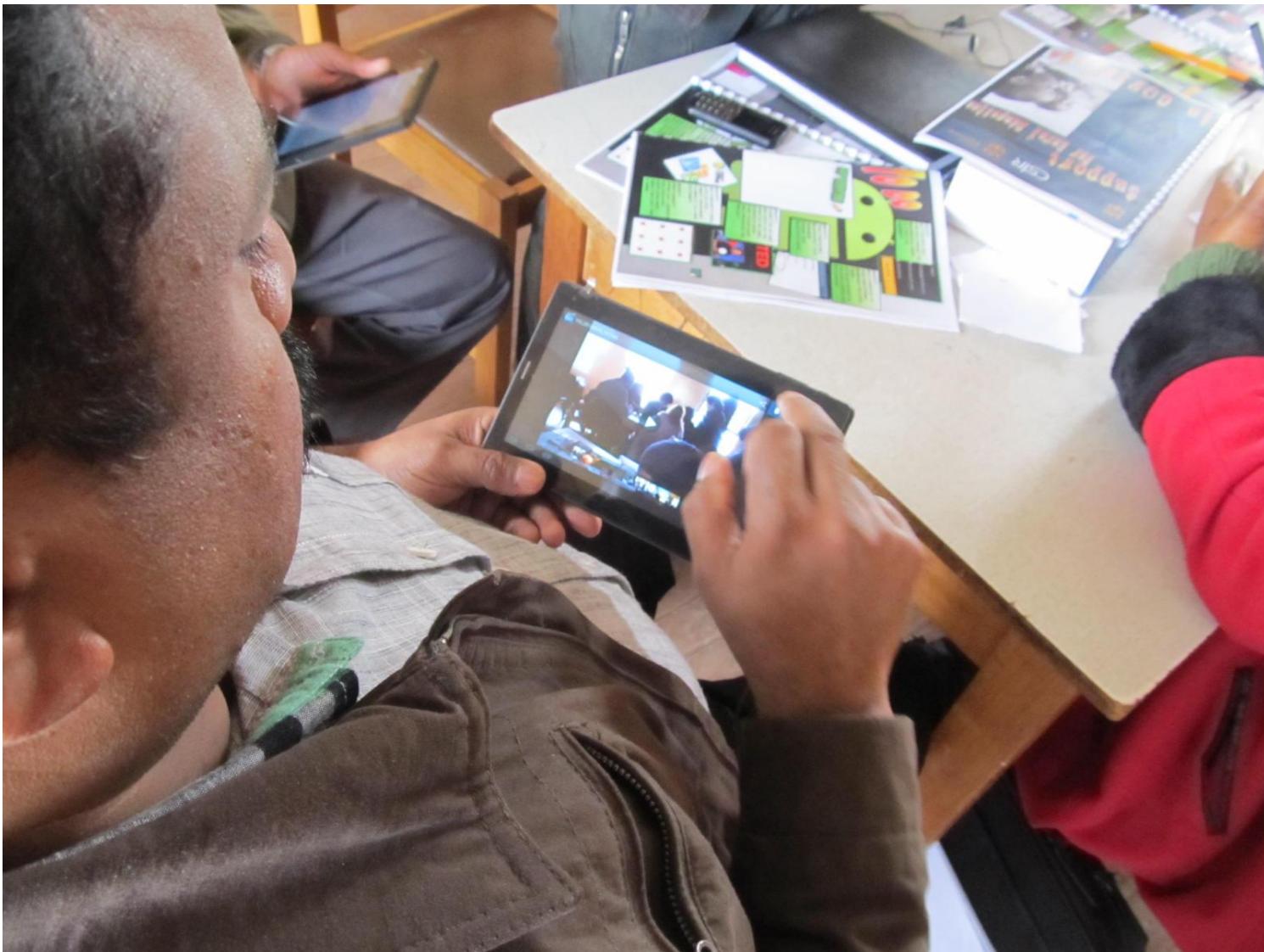


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# NEXT STEPS: **ICT4E** activities in Cofimvaba

Government & Policy

Support for informed  
& “smart” decision-  
making



## Preparation & Planning

Wifi mesh in Cofimvaba rollout

Planning

### ICT Register of possible interventions

- ✓ Categories
- ✓ Criteria
- ✓ Models/Decision-making tool based on Prospectus
- ✓ Prioritisation of interventions (those directly supporting eTextbook rollout to get top priority)
- ✓ Coordination critical

60%  
Complete

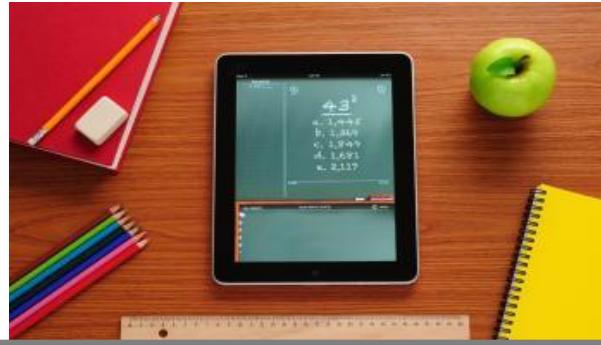
### Planning for an eTextbook Rollout

- ✓ Nciba district (26 schools, 6500 learners), starting Jan 2013
- ✓ Workshop 27 Aug - OUTPUT: Proposal
- ✓ Proposal: Submit 7 Sep

50%  
Complete

# Cofimvaba eTextbook Priority Focus

AIM: 21<sup>st</sup> Century Schooling  
SUPPORT FOR ACCESS TO DIGITAL CONTENT



Support for a 21<sup>st</sup> Century School Environment



ICT to support teaching and Learning

Improved EDUCATIONAL OUTCOMES

Learner Achievement

21<sup>st</sup> Century Skills & Competencies

Employability Skills & Competencies

LEARNERS AND HOME



TEACHERS AND SCHOOL

Support for informed and "smart" ICT decision-making



"Basic Enablers" - Creating the required pre-conditions for learning

FUNCTIONAL SCHOOL ENVIRONMENT

Competent Management & Leadership  
Competent Educators  
Informed parents

ADEQUATE INFRASTRUCTURE

Buildings  
Sanitation  
Electricity  
Water

Access to ICTs

NON-ACADEMIC LEARNER SUPPORT

Health  
Nutrition  
Transportation  
Socio-economic

GOVERNMENT AND POLICY

# eTextbook Issues



**Learning and Teaching Support Material** consisting of paper-based textbooks, workbooks & readers

LEARNERS  
AND  
HOME

TEACHERS  
AND  
SCHOOL

GOVERNMENT  
AND  
POLICY

## 21<sup>st</sup> Century Schooling



**Learning and Teaching Support Material** consisting of interactive multimedia learning resources



## Project Management

**CONTENT**  
Standards  
Distribution  
Costs

**TECHNOLOGY**  
Devices  
Infrastructure  
Connectivity

**PEDAGOGY**  
Preparation  
In the classroom  
Assessment

**CHANGE MANAGEMENT**  
Technology  
People  
Process

**OPERATIONS**  
Distribution & Logistics  
Support & Maintenance  
Training

**RESEARCH**  
Masters & PhD  
Technology R&D  
ICT4E R&D

**M & E**

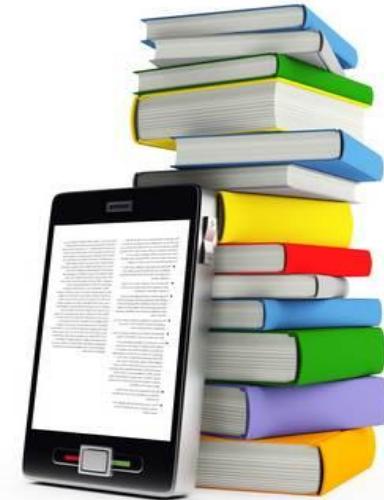
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# eTextbook Process

- **Scoping & Planning**
  - Unpack each component
  - Prioritise, Scope, Phase & Cost
- **Prepare Project proposal**
  - High level budget
  - Funding strategy
  - Contracting process (DST, DBE, Meraka?)
- **Constitute “Dream Team”**
  - Advisors + Workers
  - Transparent Meraka RFI/RFP/RFT process
- **Pre-work**
  - Wifi installation
  - Device testing, procurement, setup
  - Training, school preparation, manufacturing, content creation, etc.
- **Phased implementation 2013**



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# Components - CONTENT

CONTENT  
Standards  
Distribution  
Costs

- **Aim: Standards-based approach**
  - Independent of device/vendor – Apple, Android, Microsoft, ?
  - Open content (OER) as much as possible
  - CHOICE
- **Identify CONTENT champion**
  - RFI process – “Worker”
  - Identify advisor(s)
- **Develop content “models”**
  - Conversion process (per type – workbook, textbook, reader, teacher notes, etc.)
  - Phases (static to dynamic, interactive, multimedia)
  - Use in the classroom
  - Updating process
  - Costs
  - Long-term roles & responsibilities
- **Opportunities**
  - Digital library system (e.g. readers)
  - Appstore model (to download/purchase apps, textbooks, multimedia, games, etc.)

# Components - TECHNOLOGY

TECHNOLOGY  
Devices  
Infrastructure  
Connectivity



- **Aim: Standards-based approach**
  - Interoperability/Sustainability/etc.
  - Open source (as much as possible)
  - CHOICE
- **Meraka as TECHNOLOGY champion**
  - RFI process – “Workers”
  - Identify advisor(s)
- **Develop technology “models”**
  - Device/network choice
  - Rollout, support & maintenance, replacement, monitoring, power
  - School infrastructure (storage, recharge, content servers, wifi networks)
  - Community infrastructure (recharge hubs, shared wifi access, mobile networks, etc.)
  - Use in the classroom/home
  - Costs
  - CSIR Meraka as “incubator”, but need to develop handover plan & future business model
- **Opportunities**
  - New h/w, s/w development

# Components - PEDAGOGY

## PEDAGOGY

Preparation

In the classroom

Assessment



- **Aim: Experimental approach, built on best practise – how to teach with technology**

- NOT technology training
- Mobile learning curriculum
- Pre-service education (universities)
- In-service training

- **Meraka as PEDAGOGY champion**

- Current Arthur Mfebe work to inform
- Training material to be made available under an open content license
- Identify training institution (SchoolNet SA?)
- Publish RFI
- Engage
- Training plan for teachers (Start December 2012?)



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# Components – CHANGE MANAGEMENT

## CHANGE MANAGEMENT

Technology  
People  
Process

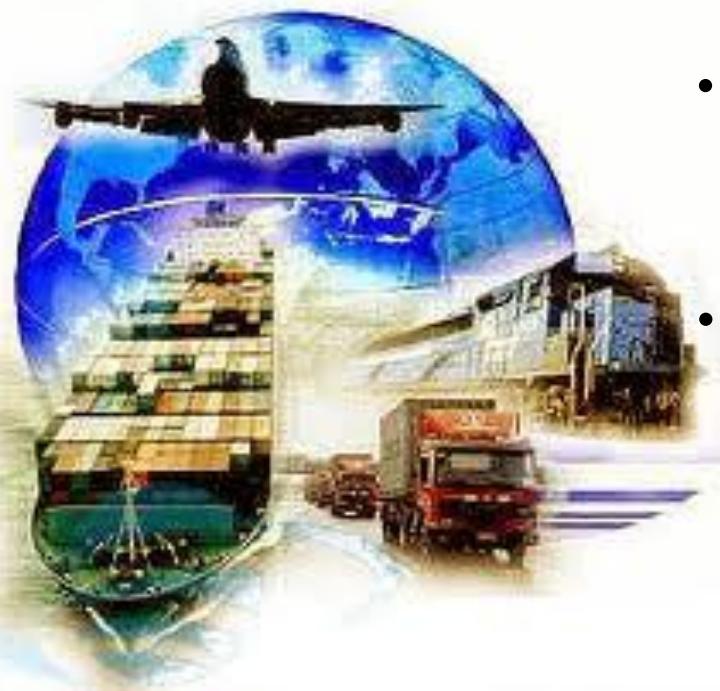
- **Aim: Prepare the school**
  - Soft skills (management, ICT vision/strategy/policy, confidence, etc.)
  - Technology management
- **Appoint CHANGE MANAGEMENT champion**
  - RFI process – “Workers”
  - Identify advisor(s)
- **Improve existing “models”**
  - Mobile dimension
  - Costs
  - CSIR Meraka as “incubator”, but need to develop handover plan & future business model
- **Opportunities**
  - New models



# Components – OPERATIONS

## OPERATIONS

Logistics & Distribution  
Support & Maintenance  
Training



- **Aim: Develop Rollout models**
  - Rollout Plan
  - Distribution of devices and supporting infrastructure
  - Support & Maintenance plan
- **Identify OPERATIONS champion**
  - RFI/P/T/Q process – “Workers”
  - Identify advisor(s)
  - Identify partners (gov, private, NGO, etc.)
- **Develop “models”**
  - Support & maintenance
    - Local unemployed youth employed per group of schools?
  - Rollout, support & maintenance, replacement, monitoring, power, content updates
  - School infrastructure (storage, recharge, content servers, wifi networks)
  - Community infrastructure (recharge hubs, shared wifi access, mobile networks, etc.)
  - Costs
  - CSIR Meraka as “incubator”, but need to develop handover plan & future business model
- **Opportunities**
  - New Models



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# Components - RESEARCH

## RESEARCH

Masters & PhD  
Technology R&D  
ICT4E R&D



- **Aim: Identify replication and rollout models**
  - Develop potential models (devices, content, rollout, training, etc.) to be investigated
  - Develop research strategy and plan
  - Bring universities on board (multi-disciplinary research environment, looking at different angles of intervention)
- **Meraka as RESEARCH champion**
  - Partner with NRF
  - RFP process via NRF – Masters and PhD candidates
  - Partner with universities
  - Identify supervisors
- **Identify working “models”**
  - Policy support (based on research and practice in real-world environments)
  - Costs



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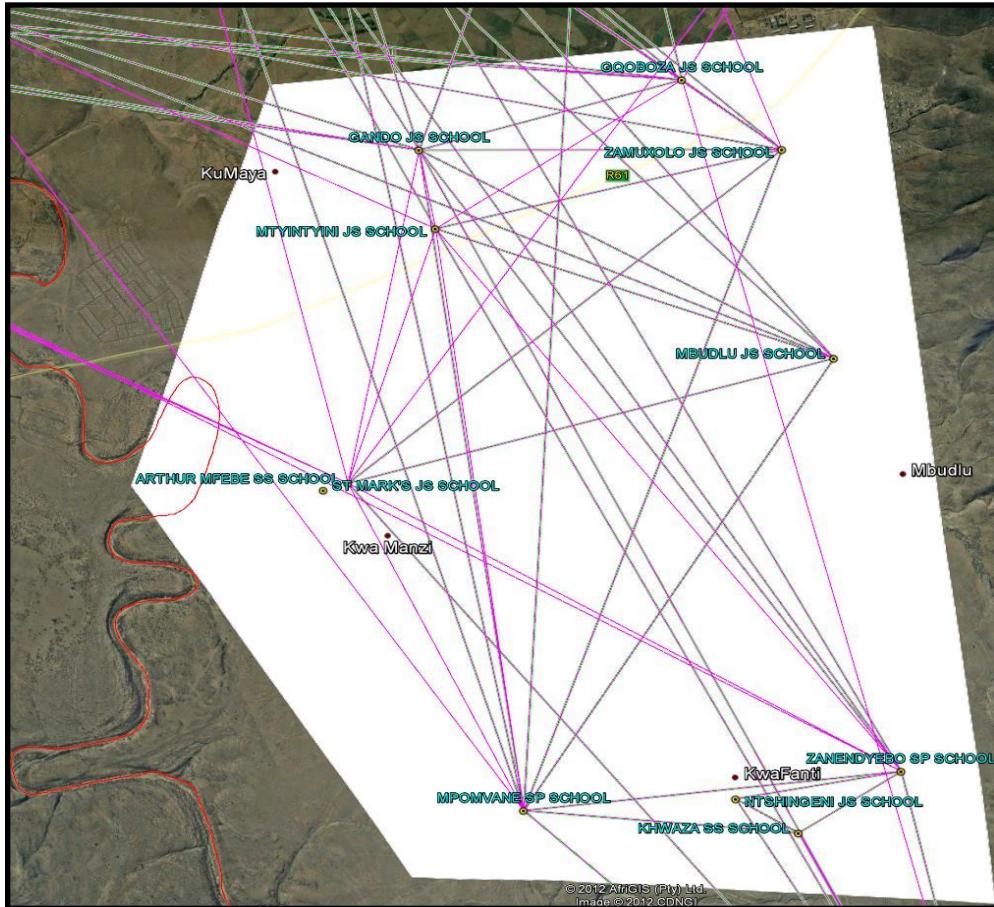
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# Implementation: Phase 1: 6 Schools: Jan 2013



Approx 1600 learners  
70 educators  
6 Support staff

- Arthur Mfebe SS (10 – 12)
  - 277 learners
  - 13 educators + 1
- St Marks JS (R – 9)
  - 386 learners
  - 14 educators + 1
- Zamuxolo JS (R – 9)
  - 366 learners
  - 14 educators + 1
- Gqoboza JS (R – 9)
  - 211 learners
  - 8 educators + 1
- \*Gando JS
- \*Mtyntyni JS
- Mbudlu JS (R – 9)
  - 401 learners
  - 15 educators + 1
- Mpomvane SP (R – 6)
  - 152 learners
  - 6 educators + 1

## Controlled use



## Shared - in the classroom

## Foundation Phase (R – 3)



## Content server per school



## Accessible via Wifi

## Content



## Existing, pre-loaded

## Support & Maintenance



## Local youngsters

## Ruggedised Devices



## Off-the-shelf 7" Android



## Storage & Charging

## Lockers + battery backup



Thank you