WORLD WIDE WEB FOUNDATION

Advance the Web to Empower People

Technologies, Education and Socio-Economic Development

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Overview

- Context
- Why Technology? Why Mobile?
- Mobile Challenges
- Sustainability
- Scalability
- Conclusion
- References


Context

UNESCO Education for All (EFA)

- Expand early childhood care and education

- Provide free and compulsory primary education for all

- Promote learning and life skills for young people and adults

- Increase adult literacy by 50 per cent

- Achieve gender parity by 2005, gender equality by 2015

- Improve the quality of education

Why Technology?
Why Mobile?

Why Technology or the Promises of ICTD

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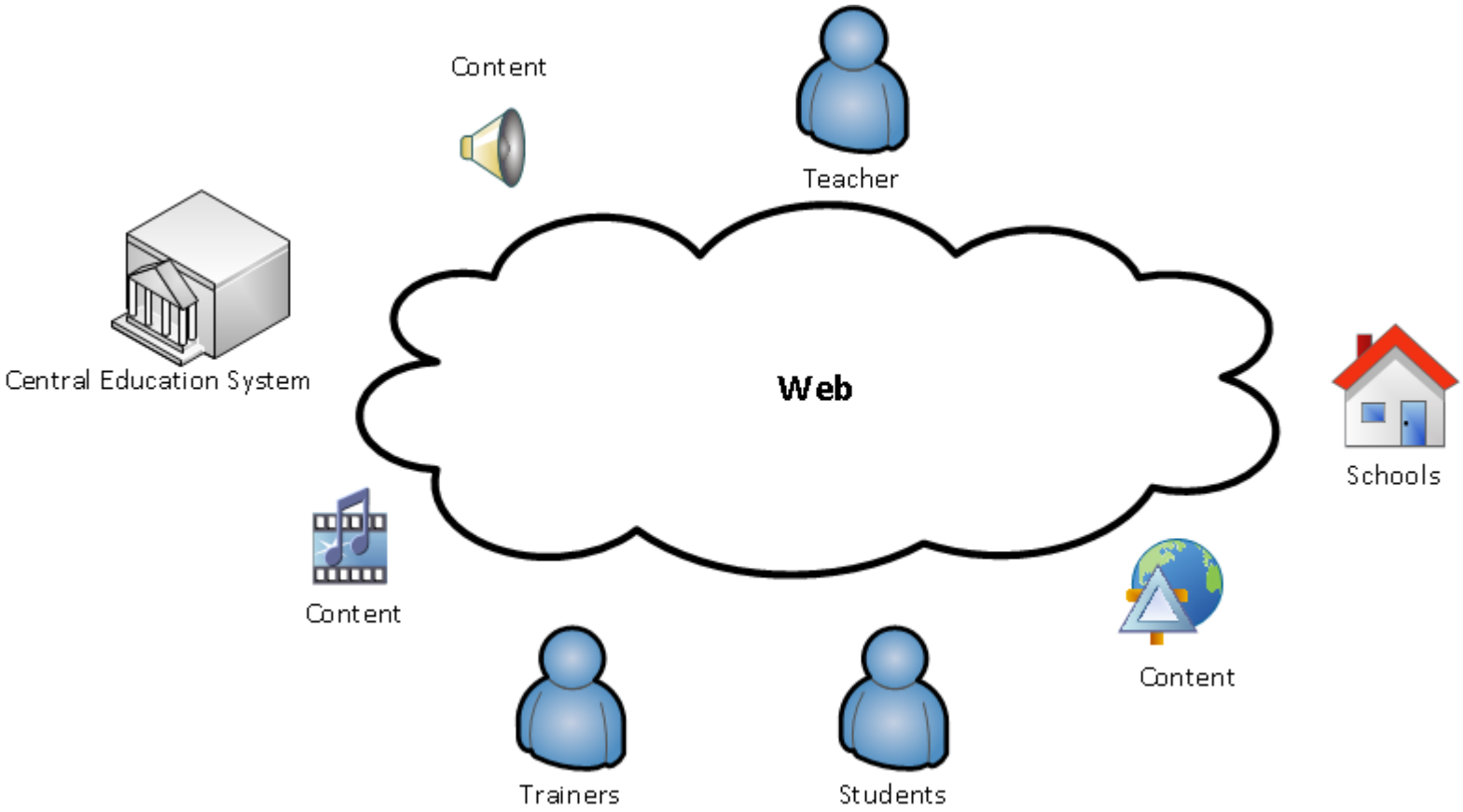
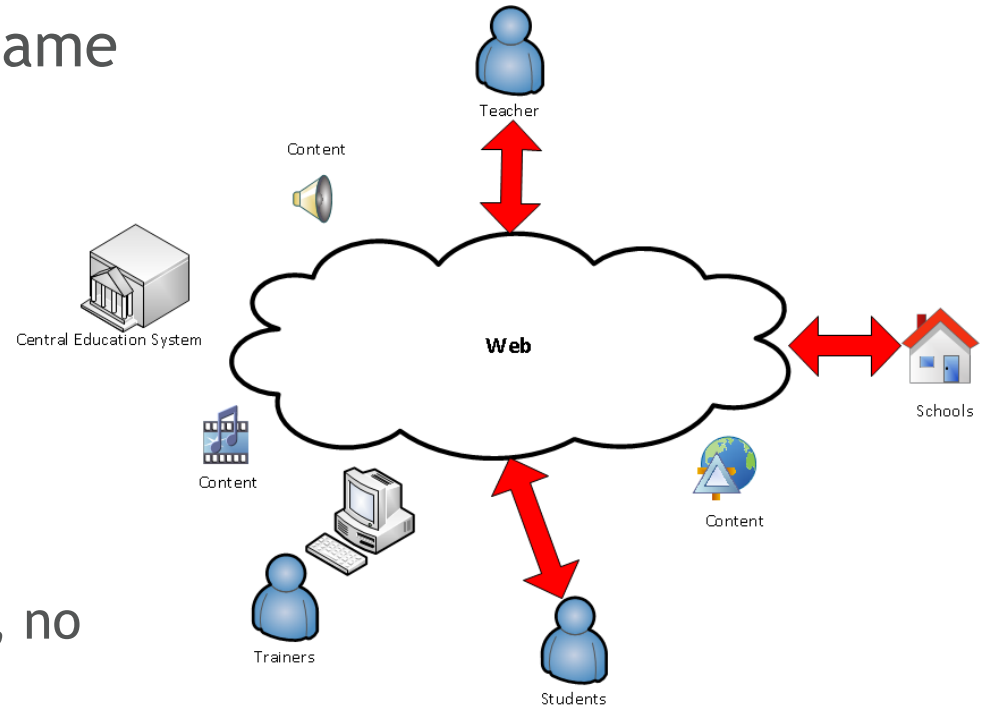
- Overcoming infrastructure challenges
- Providing access to updated content
- Providing trainers and support from all over the World
- Providing tools
- Leveraging communication independently of physical/geographical barriers
- Broader impact than just education:
  - health: access to healthcare, to doctor, to specialists
  - Livelihood: access to market, new agri-technics, etc

The dream



Pre-Mobile Results

- ICT also needs infrastructure and logistics
- ICT infrastructure is at the same stage as other infrastructures
- ICTD experiments:
  - Focused on infrastructure development and deployment
    - Driven by technologists, as technology projects
- Outcome
  - Huge costs, no sustainability, no scalability, no replicability
    - No focus on content, application and impact on development



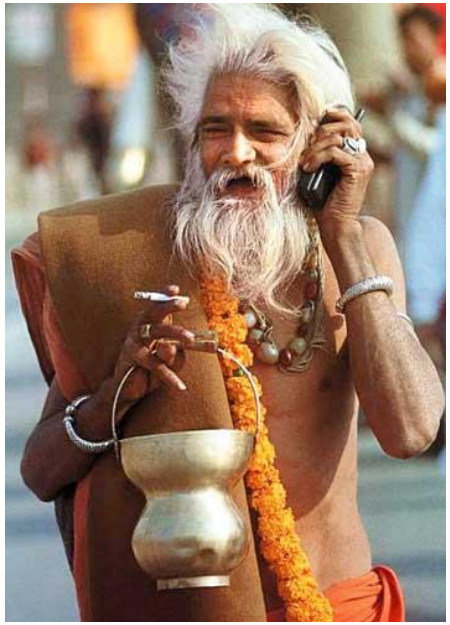
Mobile Revolution

- 90% of the World population covered, 5+Billions subscribers
- First time in history that a minimal ICT appliance is available at that scale
- First time that a bi-directional interactive communication device is available in the hands of the poorest
- Consequences:
  - Projects can now focus on content and applications

Mobile Challenges

Mobile Challenges

- Mobile specific challenges
  - Highly constrained device
  - One device Many technologies
- Technology challenges:
  - How to integrate technology to non-technology-aware users ?
  - How to cope with illiteracy
  - How to support languages and scripts ?
  - Which applications/approach to solve which issues ?
  - Sustainability/Scalability/Replicability



Mobile Technologies

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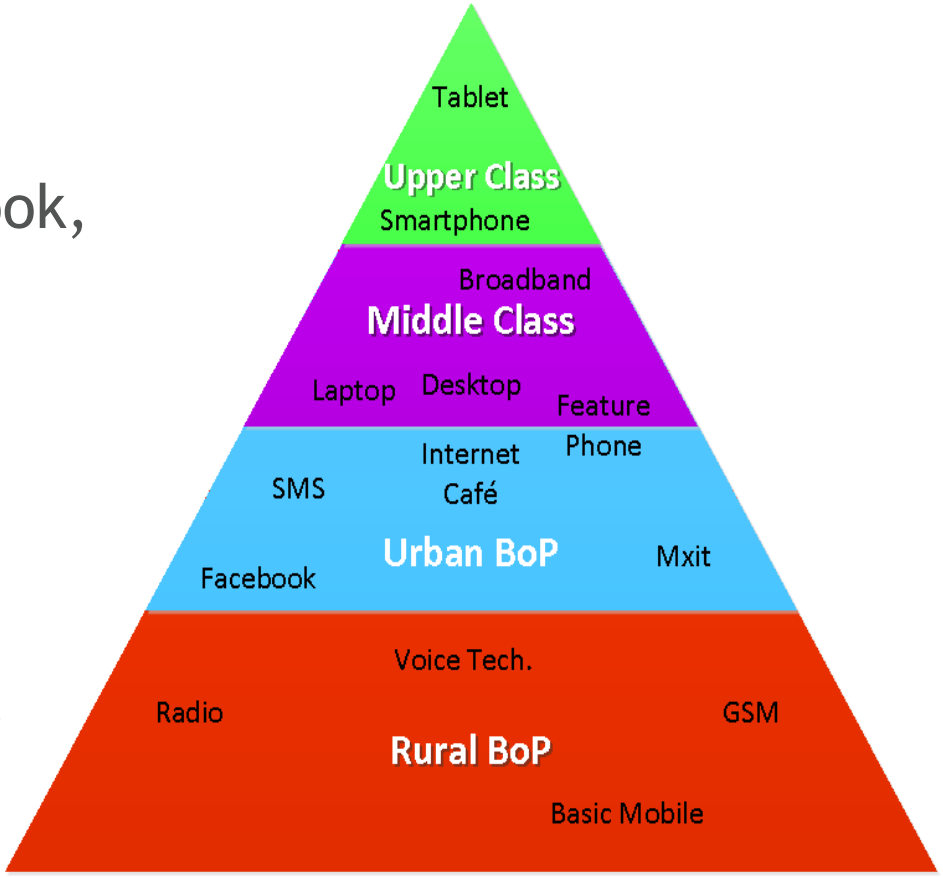
- Basic phones
  - Voice
  - SMS
- Feature phones
  - Native apps
  - small browsers
  - Graphic
  - GPRS
- Smartphones/Tablets:
  - Full browser
  - Video
  - High power - High capacities
  - Offline support
  - Broadband / 3G

Mobile, the only tool ?

- Other tools
  - internet café
  - Application support (Facebook, MXit)
  - radio
  - television
  - …

Aim: Provide services to people through the most powerful and efficient interface for them



Highlight: Radio

- National Radio
  - With computer
  - Internet-connected in most cases
  - Broadcasting all over the country
- Community Radio
  - Primary source of information in rural areas
  - No internet-access, no computer in most cases
  - Mobile-phone enabled
- Opportunities
  - Cheapest ratio cost/number of person reached
  - Accessible by all from everywhere
  - Can be connected through voice technologies

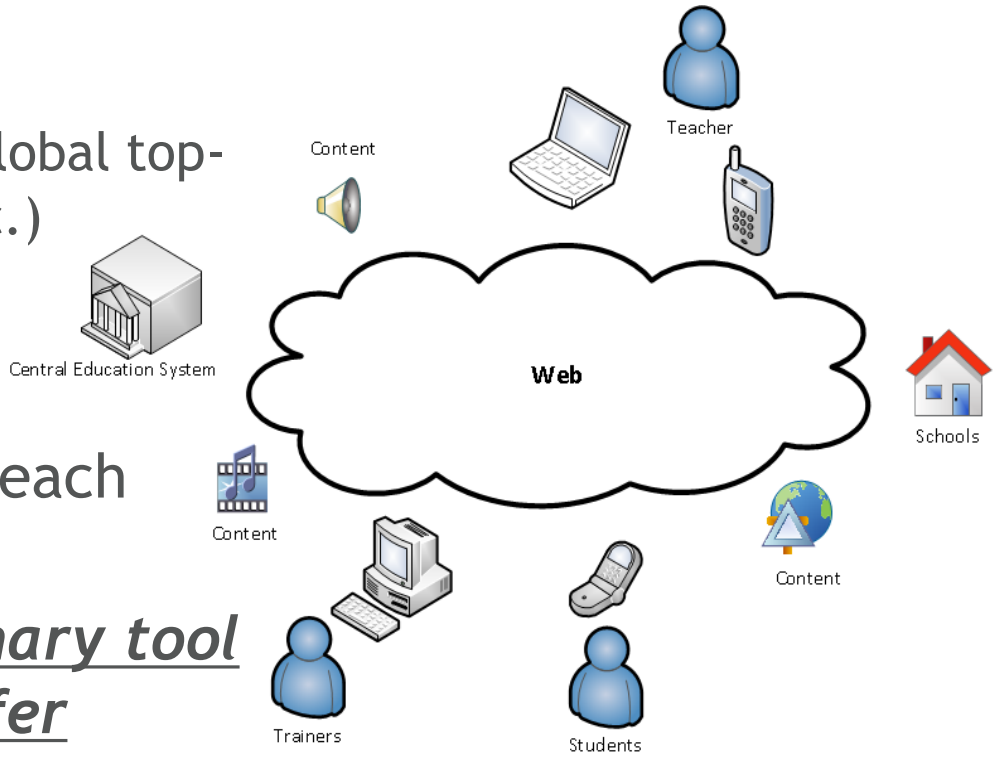
Other Mobile Challenges

- Cost issue
- Exclusion issue
  - owner and not owner
  - sharing within family and limited access
  - gender issue in access
- Content issue
  - content is not independent of the delivery channel
  - Content requirements vs technologies requirements (support of audio, graphic, video, etc.)

Mobile: a revolution or a gadget?

- A revolution in an existing context
- What is impactful is:
  - What is available
    - the future is unknown
    - no example of successful global top-down deployment (OLPC, etc.)
  - What is accessible
  - What is affordable
  - What is most powerful for each actor

Mobile phone a new revolutionary tool that complements previous offer



Sustainability

Sustainability

- **Challenge: Reaching a new long-term stable equilibrium**
- **Financial Sustainability**
  - In business: cost vs. Income
  - In public services: increasing impact per $
    - Different solutions for 50$ investment vs 500$
- **Human Sustainability**
- **Technological Sustainability**
- **Environmental Sustainability**

Human Sustainability

- Content: Transforming actors from passive recipients to proactive contributors
  - Creating a dynamic ecosystem between all actors
- Platform: Ensuring that local entities can maintain and support services for costs & evolution
  - Building capacities on mobile tech.
- Innovation: Creating dialogs between ICT actors and Education actors

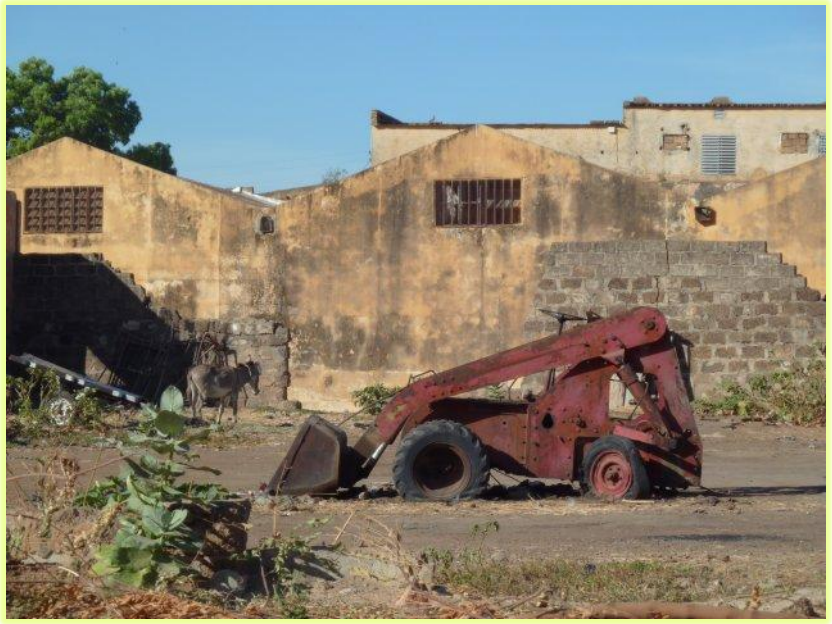
Best & only solution: a local self-sustainable ecosystem for platform and content

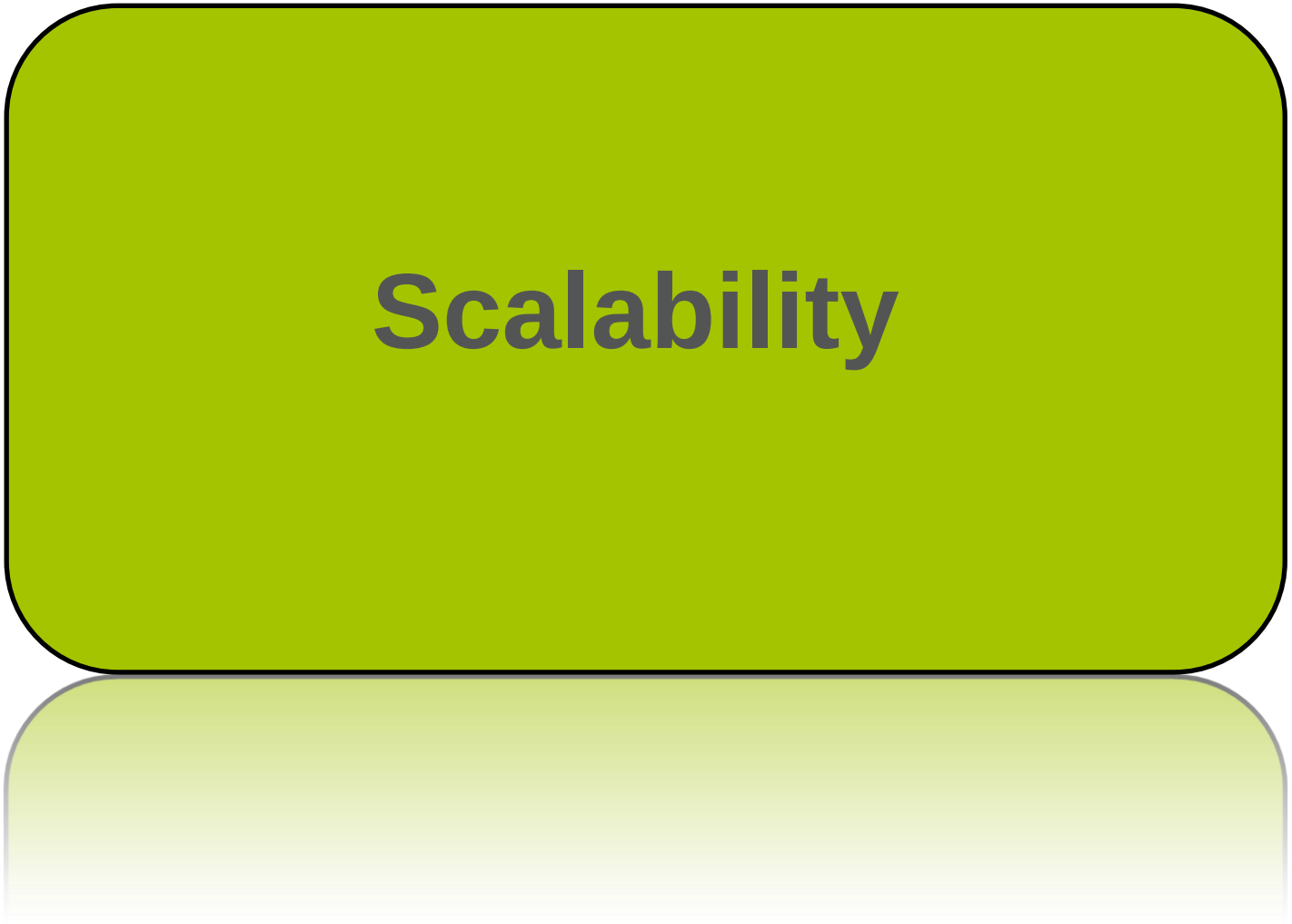
Technological Sustainability

- A long-term solution is a solution that:
  - Can be adapted as technologies and devices evolve
    - Information system with interfaces channels
  - Can be enhanced, adapted and reused
    - Open standards
    - Open source

Environmental Sustainability

- Energy & Carbon footprint
- Natural resources management (e.g. tantalum)
- Pollution
- eWaste
- …




Scalability

Scalability

- **Challenge:** How to have a global Impact?
- **Local Scalability (country-wide)**
  - Scalability in number of users: operator independence
  - Scalability in functionalities:
    - Portal approach vs service-specific approach
    - Community approach, entrepreneurship
- **Global Scalability (region, continent, worldwide)**
  - Small, highly replicable, low-cost solutions
  - Viral expansion vs top-down driven expansion
- **Context Scalability?**
  - Urban/rural, financial, development level,…

Conclusion

Conclusion

- Consider mobile AND other tools
- Highest Rating: LLL
  - Local context
  - Local ownership
  - Local capacities
- Don’t design a system, design an ecosystem
  - Empower all actors: maximize incentive, minimize change
- Consider all dimensions of sustainability and scalability
- Remember: we don’t know what the future will be: smartphone ? Tablet ? …

World Wide Web Foundation

- Swiss public charity founded by Sir Tim Berners-Lee, inventor of the Web in 2008 – http://www.webfoundation.org
- *Not a grant-making organization.*
- *Mission: Extend the benefit of the Web to all people*
- 5 Initiatives:
  - Domain Focus: Web for Agriculture – Education and News/Media soon
  - Open Government Data
  - Mobile Entrepreneurship
  - Voice Browsing
  - Web Index

References

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Annexes

Mobile for Social and Economic Development: SoA

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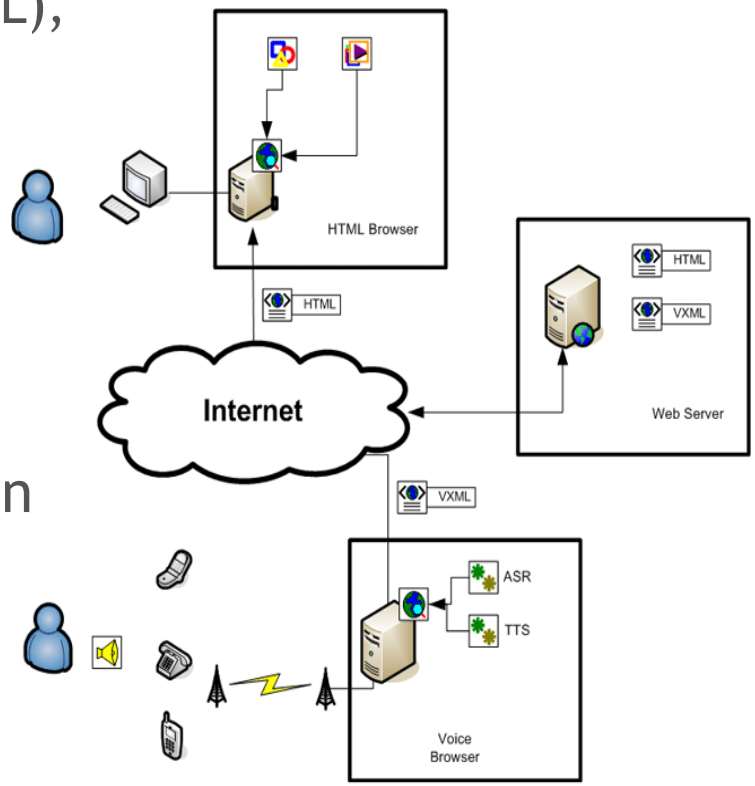
- Proof of concept & Awareness: Mobile is a good ICT platform
- Lots of ongoing initiatives in many different domains: health, education, etc.
- Still
  - Replacement vs. Complement approach
  - Silo approach in technology vs. information system
  - Individual approach vs. information society approach
  - Tools driven vs. needs driven
  - Sustainability and scalability not addressed appropriately
  - Local capacity not addressed
  - Lack of context identification

Highlight: Voice Technologies

- A mature technology
  - VoiceXML is a standard since 2000
  - VoiceXML is a family of languages for speech synthesis (SSML, PLS), call control (CCXML), speech recognition (SRGS, SISR), etc.
- Only technology to deliver content to people with low reading skills
- Only technology to provide Web access without Internet connectivity
- Only advanced interactive technology on basic phones



Content: Is content available ?

- Raw content available
  - OER movement
- Content is not independent of channels
- Content requirements
  - Modalities (text, audio, picture, video)
  - Communication/Interaction
- Next steps
  - Identify delivery platform
    - E.g. mobile+radio platform
  - Work on content design or porting to fit with platforms