

Ideas for development (ID4 Dev)

Health system strengthening:
Health for all revisited
Norwegian Global Health Conference
Oslo, 10-11 April 2018

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UiO : Global Health

GLOBAL
HEALTH
NORWAY



UiO : Centre for Development and the Environment
University of Oslo



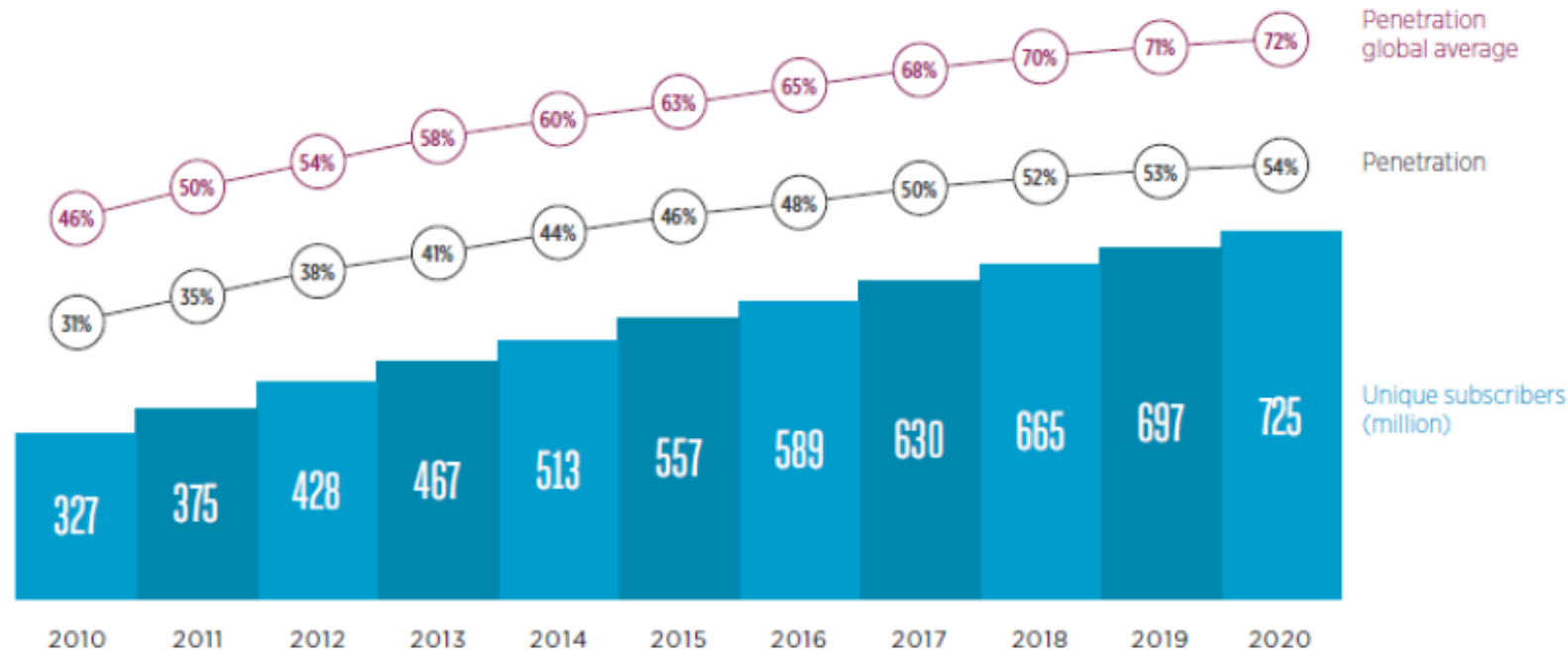
UiO : Department of Informatics
University of Oslo

 NIPH

Norwegian Institute of Public Health



The Boom in mobile phone networks in the late 1990s was a massive game changer!



Source: GSMA, 2016

- The amount of mobile subscriptions has been increasing, while communications and phone prices progressively decrease. In Africa there are more than 660 million unique subscribers and this number is forecast to rise to **725 million** by 2020

Which had accelerated socio-economic growth and had driven innovations in many sectors



Service

Je veux améliorer mes pratiques agricoles

Sénégal

Appelez 37333

25 FCFA par minute

Vous rapprocher de l'essentiel

www.orangemali.com



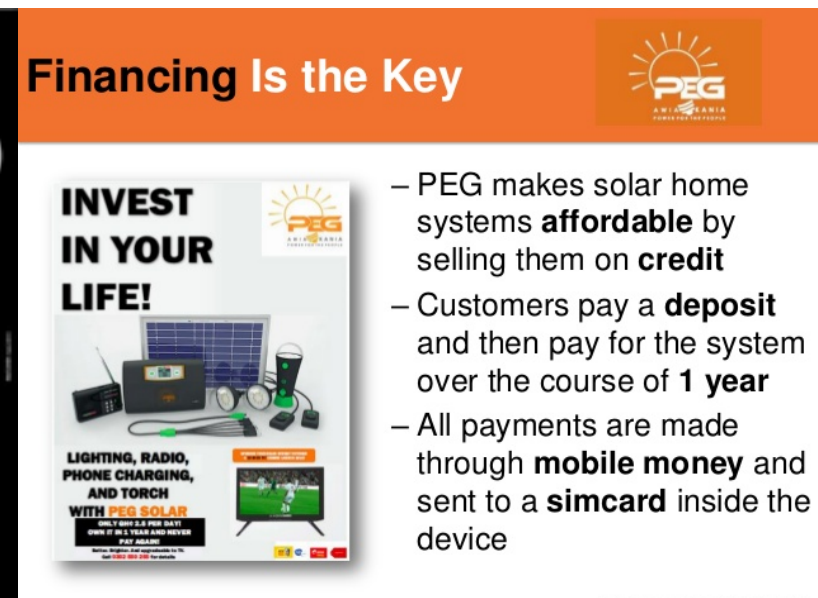
Orange Money

Orange Money Transfer

from now on, send money to **all networks**

dial #150#

today changes with orange™



Financing Is the Key

PEG

INVEST IN YOUR LIFE!

LIGHTING, RADIO, PHONE CHARGING, AND TORCH

WITH PEG SOLAR

ONLY 2.8 PER DAY! FROM 11.5 YEAR AND 100% PAY AHEAD

- PEG makes solar home systems **affordable** by selling them on **credit**
- Customers pay a **deposit** and then pay for the system over the course of **1 year**
- All payments are made through **mobile money** and sent to a **simcard** inside the device

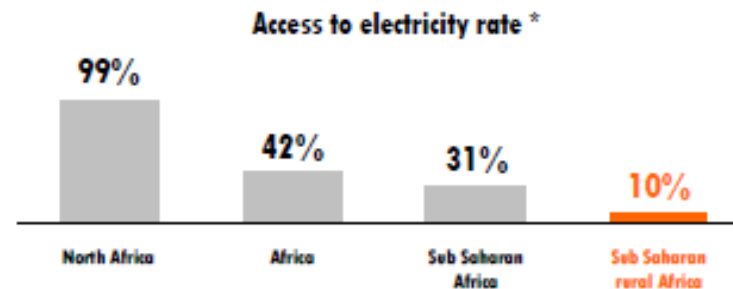
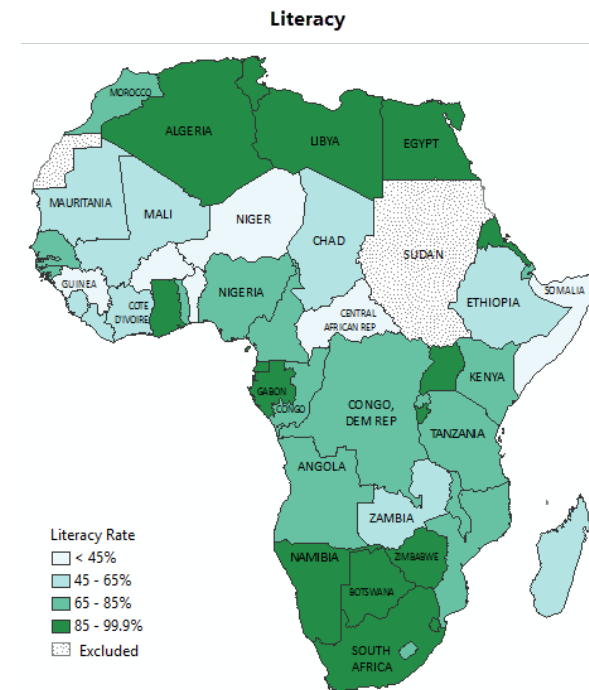
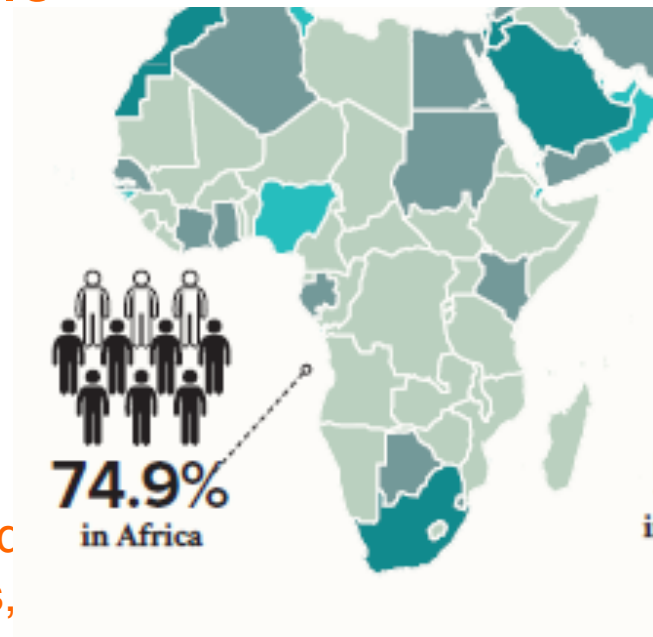
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Winning services are those designed according to the population's profile

- There is still a huge digital divide for **internet** access in Africa (74,9%)
- Sub-Saharan African countries present the highest **illiteracy's** rates
- Only 10% of the population have access to **electricity** in rural areas

➔ Therefore services need to be defined according to socio-demographic profiles, the most widely disseminated technologies and at sustainable costs

➔ In medium/long term, investments are needed to shortage low infrastructure



← Short Term

Long Term →



Some examples on how mobile can contribute to strengthening health sector

- Identify and liaise with specific populations for information and health education, Improve data collection
 - UNAIDS
 - GAVI
- Training for front-line workers
- Improve epidemic response through operator data analysis

UNAIDS to collaborate on new mobile technology platform to improve data collection and advance the response to HIV



- **Mobile technology will be used to improve HIV services to ensure patient retention in care and treatment adherence and to help break down stigma and discrimination.**
- **Data will be collected and analyzed, gaps in services identified and action taken to improve the quality of health care for people living with and affected by HIV.**
- **The information collected will be anonymous and full confidentiality will be maintained.**



Orange, Gavi and Côte d'Ivoire Ministry of Health join forces to boost child immunisation

- The "M-Vaccin Côte d'Ivoire" project uses Orange mobile technology:



- To inform parents about the importance of vaccination by sending **text and voice** messages in the **local language**.
- To provide health workers with a M-Vaccin mobile app. It will enable them to accurately capture data from the communities and populations they are in contact with.
- Targeted messages will also help ensure parents don't miss immunisation sessions by reminding them of their children's schedule and dates.

Applying successful scheme tested for primary teachers to frontline health workers

- Audio Resources Support

- Teacher Training Support


- Secure Payment

→ Mobile phones with integrated MP3 players and solar chargers distributed to all teachers



→ Free calls between teachers and tutors



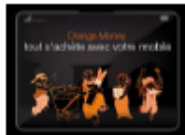
→ Voice server 

→ Gateway for the delivery of MCQ and information by SMS (text message)



→ A single Web interface serving IFADEM

→ Orange Money



Improve targeting and response through operator data analysis (Call Detail Records)

Metadata

- call_type
- user_id
- timestamp
- basic_service
- location of celltower
- id of call partner
- call_duration – or 1 for SMS
- ...

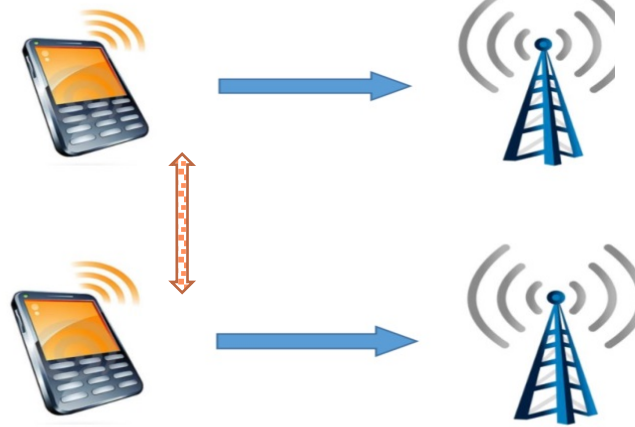


Figure 1. Map of Orange Côte d'Ivoire mobile antennae

call type	user id	timestamp	event	tower_id	partner_id	duration
in	RBR45T60	2013/10/14 15:17:06	voice	534	QLM834N	458
out	FLM834N	2013/10/14 15:17:06	text	6789	RWN34T	67

For Epidemics like Ebola, H1N1, Zika

Spatial propagation is largely dependent on human mobility

Where pathogens will spread?

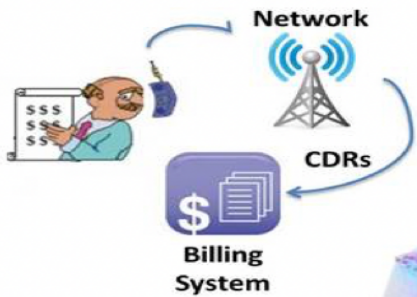
Where is the higher risk of contamination?

Where to place resources for prevention and mitigation?



Call Detail Records allows epidemic modelling

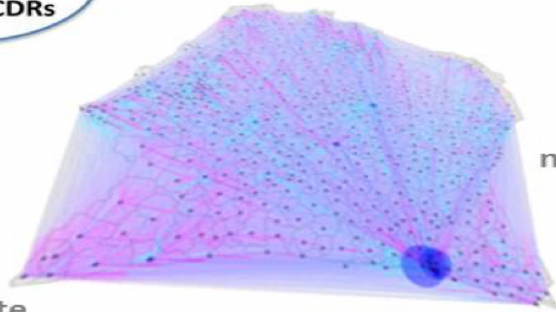
Orange Telecom networks record calls information in the form of CDRs



CDRs contain geographic localization of the cellular tower handling the calls

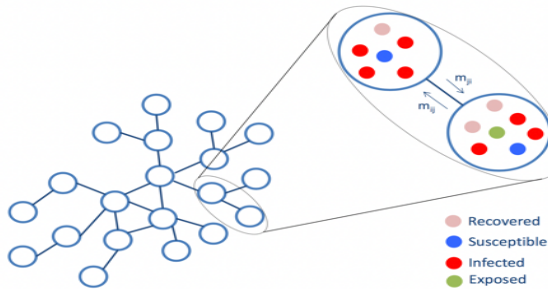


Estimate mobility patterns



✓ Determine subpopulations of individuals with the highest risk of infection

Incorporate mobility into epidemiology

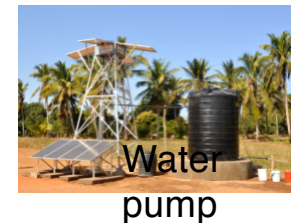




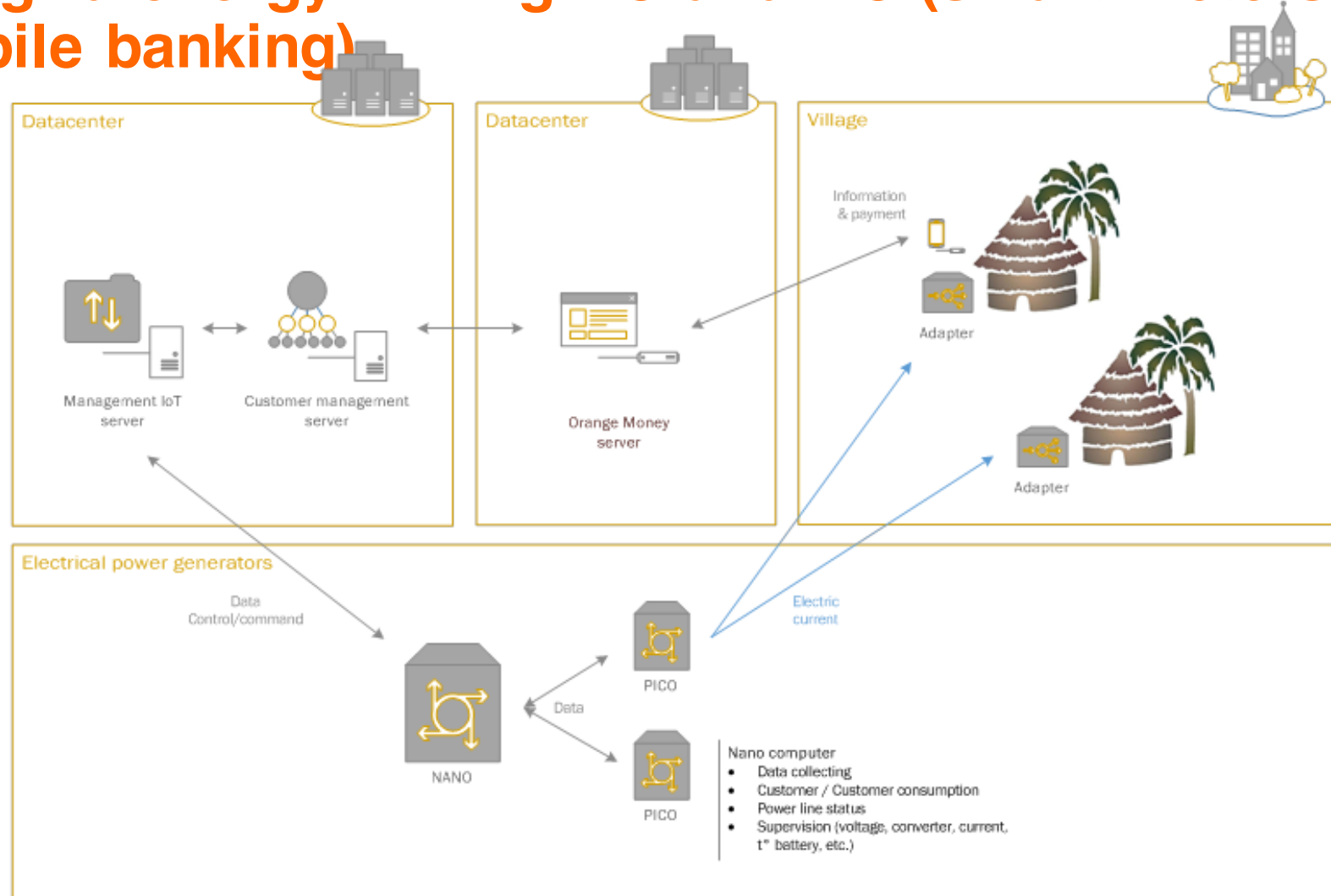
Orange Restricted

Investing in energy and telecom infrastructure in rural areas

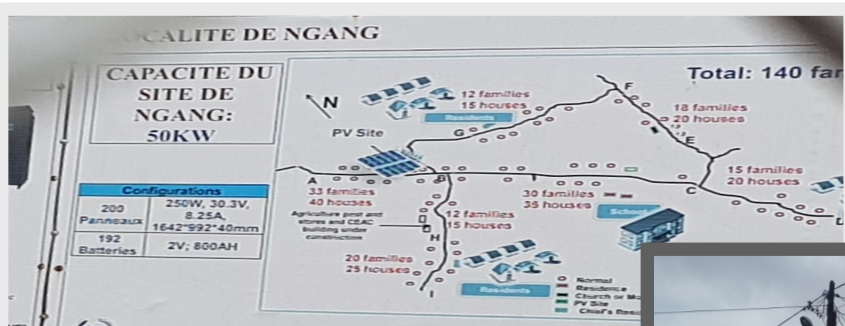
- In rural areas connectivity (2G) and mainly internet remains a challenge due to low population density, low purchase power, lack of energy. **Telcos hesitate to invest**
- And more broadly this lack has a negative impacts on socio-economic development:
 - Kanagawa in 2006 formalize the effects of increased access to energy by highlighting four main areas benefiting: **health**, education, income and the environment.
 - Pablo del Río (2006) shows a substantial contribution to achieving the millennium goals.



Off-grid energy mixing AC and DC (smart meters and Mobile banking)

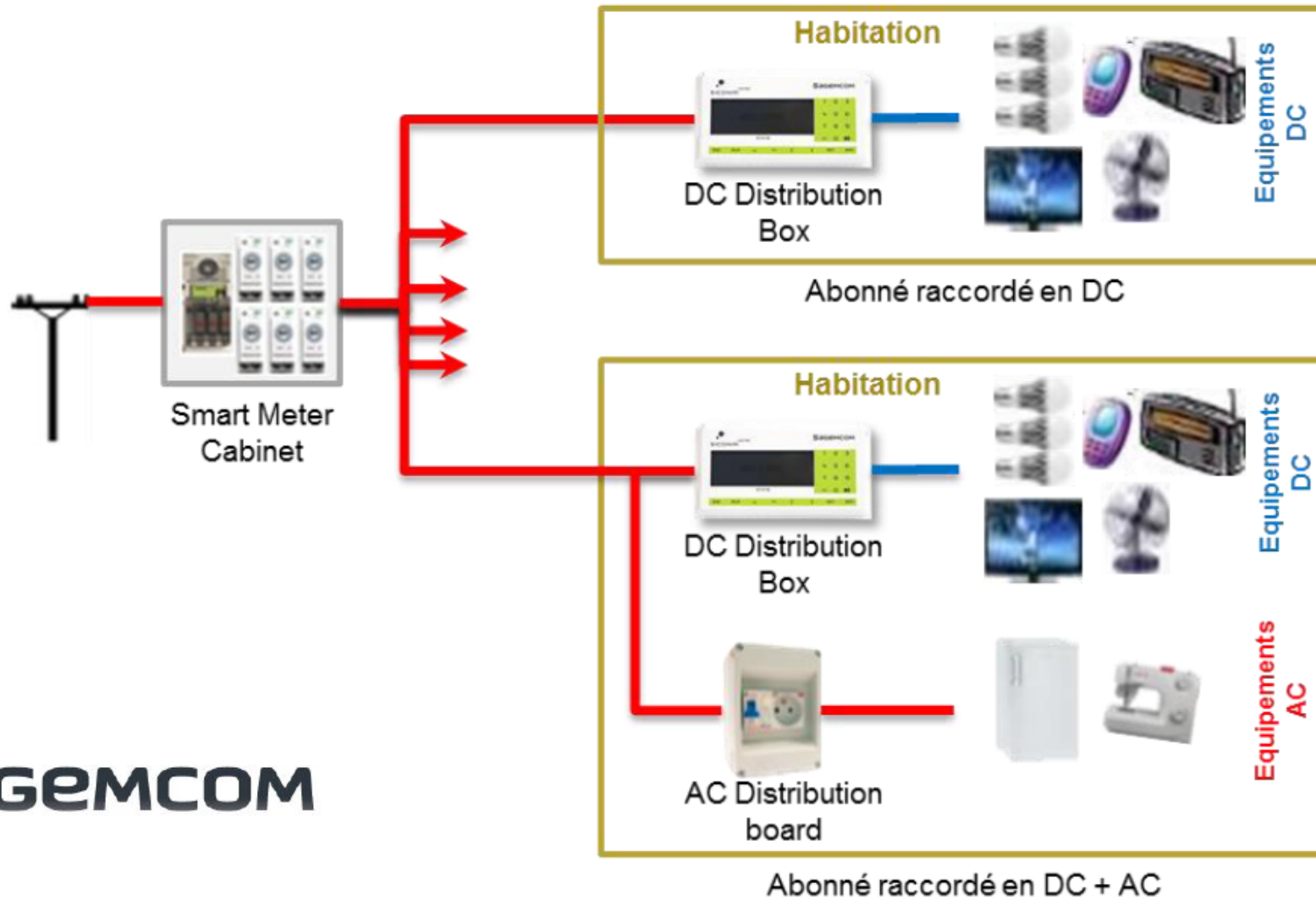


Potentiels of MiniGrid vs SHS



- Mutualized solution, scalable in power and in energy, life time > 10 years
- Networks supervised and operated locally and remotely, maintainable locally, secure, robust and deployable on a large scale by local teams.
- Counting and payment system by line. The counting and payment of electrical energy could evolve towards those of water for example
- Power supply systems such as medical equipment, pumps, water treatment systems, ice machines, etc.

Example of a solution developed by SagemCom



SAGEMCOM

A clear need of PPP

- PPP with
 - International donors and local governments to fund and support a dedicated part of the capital expenditure investment;
 - Operators/Companies;
 - Self-entrepreneurs who are trained by the operator to support the recurrent costs of operation, that is to say, hosting and maintenance of the solution on the one hand and business management and customer service on the other hand;
 - these would receive initial funding from a micro finance organism (via Mobile Banking) to train and launch their business.



e-health

More efficient health systems through systematic health/epidemiological data collection, telemedicine, and digital health insurance



access to energy

Facilitating access to energy through smart metering and pre-payment solutions using Orange Money



connectivity

Affordable mobile and Internet services for all, including in rural areas



innovation for development

Developing new tailor-made ICT solutions for developing countries through open innovation and public-private partnerships

Wrap-up & Merci !

