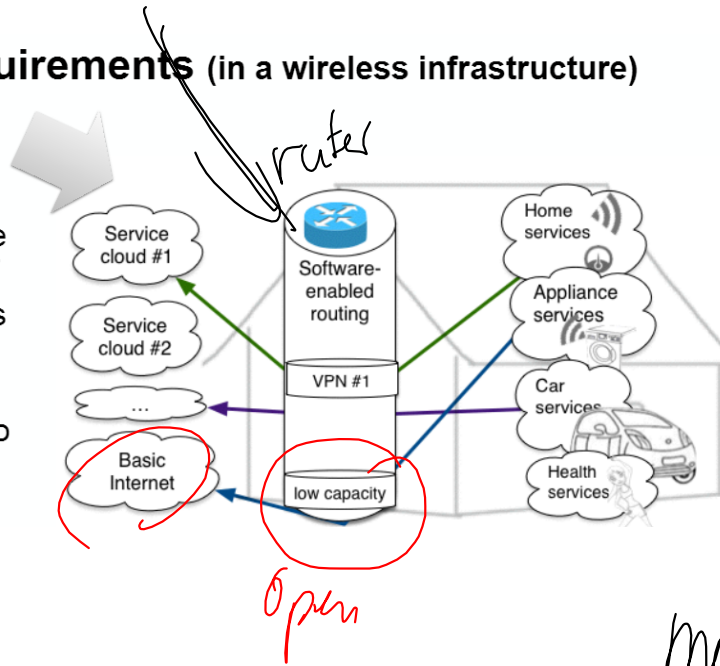


### Future Service Requirements (in a wireless infrastructure)

- "we have no control of what is going on in Wifi"
- "only 25% of broadband customers experience the speed they got promised"
- more than 75% of all calls to ISPs is related to wireless
- over 90% of boxes sent to ISP are fully functional



Eye SaaS

.xmpp

ISO95?

mesh  
5.x

— handover  
— "insight"  
— load balancing

**Complementary approach for digital inclusion**

<b>Telecom</b>	<b>InfoInternet</b>
revenue-driven	non-profit
targeting leveraged creation	targeting no- and limited use
voice & mobile broadband	compressed text & pictures
subscription based (SIM)	free access & voucher
mobile network: coverage & capacity	Wifi-spots: health-/community centres, schools
operator cost model	target: 0.5 US\$/month
operator roll-out	NGO & community roll-out

# InfoInternet - the infrastructure for Digital Access

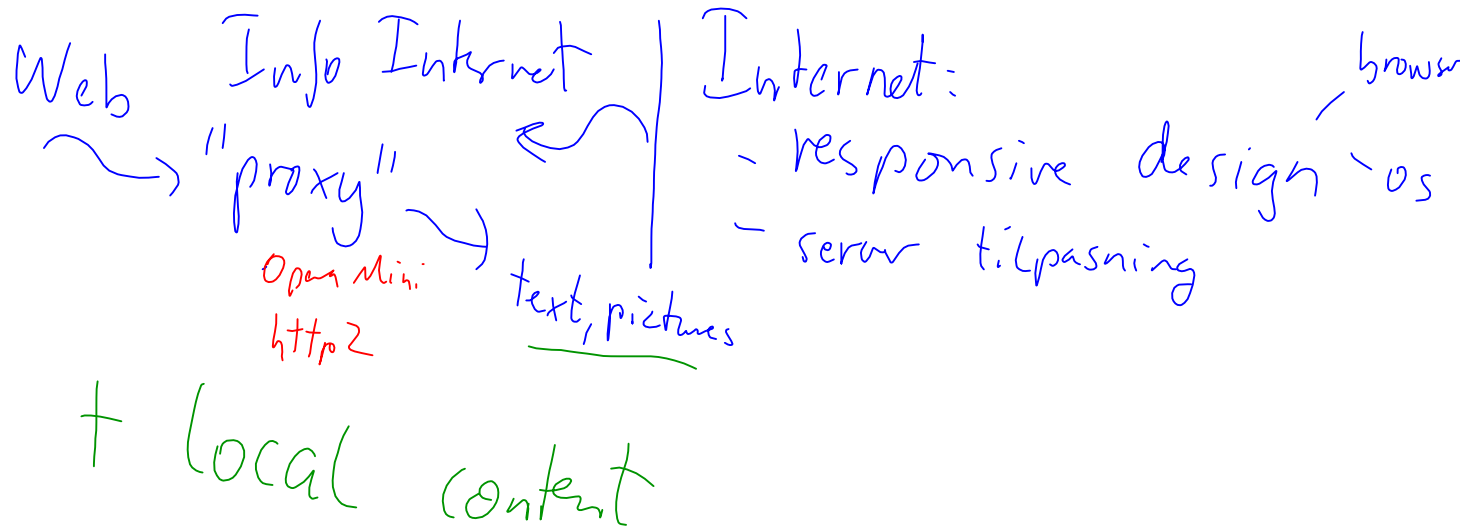
## Road Infrastructure

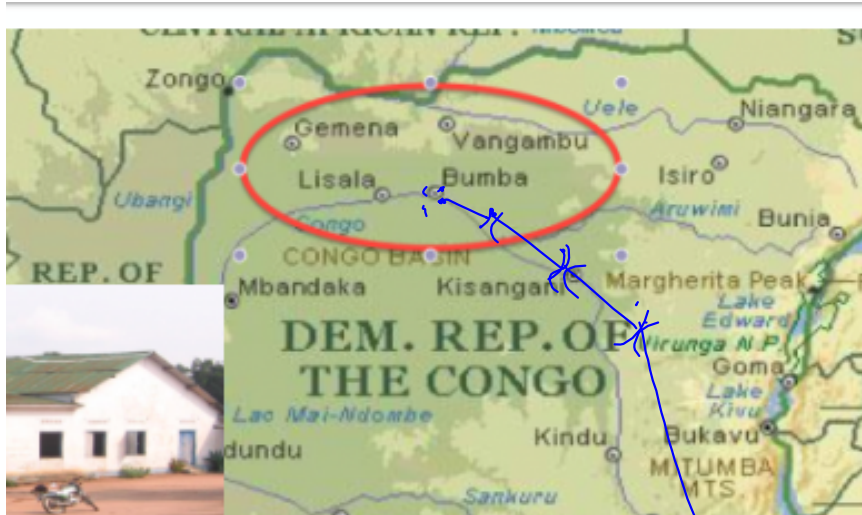
- Basic infrastructure
  - free usage for pedestrians & cyclists
  - authentication for cars
- Highways & toll roads
  - speed & comfort
  - often privately managed
- Successful complementarity



## InfoInternet Infrastructure

- Basic Access
  - free access of information
  - walk to Internet
- Broadband and Mobile services
  - Voice, video & games
  - speed & comfort
  - privately managed
- Complementarity



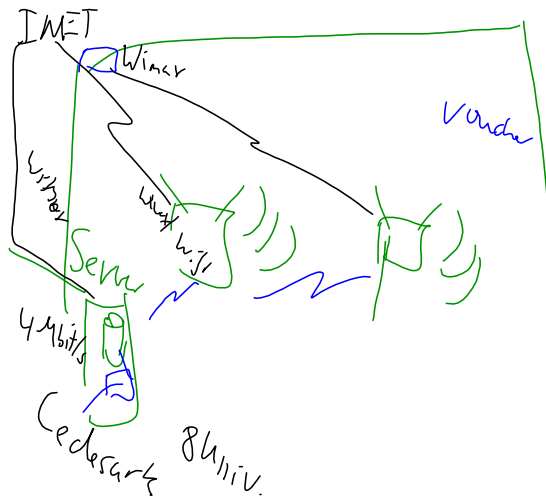
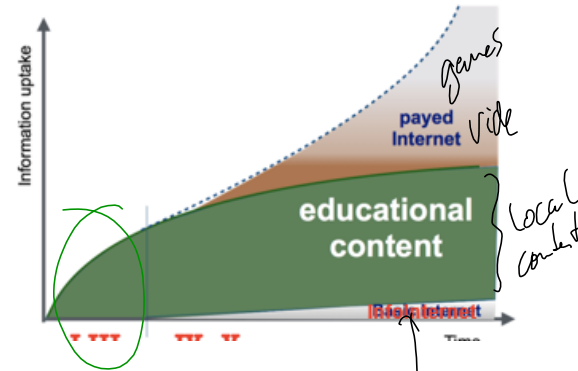


450 MHz  
 Coverage Facebook  
 "0-rated" Free Basics  
 + 2h talk  
 hot-spot Internet

IPX erkerso 30m mesh  
 radio link  
 Orange ← sat. GSM Congo  
~~Satelit 2000 up/down~~  
 Facebook 1 Mbit/s  
 Aros6  
 Wifi Express 200 up/down

- › Pilot - Kinshasa (DRC)
  - ▣ Information focus (text & pictures)
  - ▣ low-ba
  - ▣ Focus on compressed text and pictures
- › **Affordability** (costs of data)
- › industrial perspective (Ind4.0)

[Source: GSMA, Nov2015]



↳ USB mlu  
 T35tu  
 ↳ 4 syklus Allevail  
 46/36 dangle Risk  
 Ufi Baaran  
 Drammen  
 (A-hus)

< 2.5%

## Topics for Master Thesis

Open Master Thesis related to Basic Internet"

- Analysis and Standards for the Information-Internet (Supervisor(s): Josef Noll, Iñaki Garitano)
- Analysis of Proxy services for an Information-Internet (Supervisor(s): Josef Noll, Iñaki Garitano, Jan Standal)
- Elaborating and implementing http2 standards for server-side compression (Supervisor(s): Josef Noll, Iñaki Garitano)

Do you have an idea for a topic? Add, or talk to anyone from The BasicInternet Team.

Add a topic for a Master Thesis

supply keyword: Basic Internet

## Topics for Master Thesis

Open Master Thesis related to IoTSec

- Multi Metrics Based Framework (Supervisor(s): Josef Noll, Seraj Fayyad)
- Evaluation of the Component's Interconnection Impact on the System Security (Supervisor(s): Josef Noll, Seraj Fayyad)
- Privacy labels for IoT consumer products (Supervisor(s): Josef Noll, Hanne Brostrøm)
- Building an Attack Simulator on the Electric Grid Infrastructure (Supervisor(s): György Kálmán, Josef Noll)
- Security challenges of open low-capacity wifi access (Supervisor(s): Josef Noll) ← *next slide*
- Semantic Modeling of a Smart Home Infrastructure (Supervisor(s): Josef Noll, Christian Johansen)
- Risk Assessment tool analysis for Industrial Automation and Control Systems (Supervisor(s): Mohammad Mushfiqur Rahman Chowdhury, Judith Rossebø, Josef Noll)
- Prosumers for the future smart electricity grid (Supervisor(s): Josef Noll)
- Measurable Security for Sensor Communication in the Internet of Things (Supervisor(s): Josef Noll, Mohammad Mushfiqur Rahman Chowdhury)

More details are available at OpenThesis

Do you have an idea for a topic?

Add a topic for a Master Thesis

Ongoing Master Thesis related to IoTSec

- Smart Meter Security Analysis (Editor: Mehdi Noroozi)
- The human aspect in Smart grids (from Security and Privacy point of view) (Editor: Linn Eirin Paulsen)
- Pervasive computing in smart electricity grid (Editor: Kaniz Fatema Tuly)

1.1 Topics for Master

1.1.1 Some idea

2 Contact

## Addressing the challenges of IoT connectivity

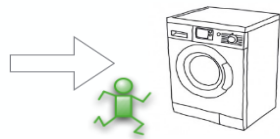
### Device ownership

- who owns the device
- which data are going to whom
- maintenance



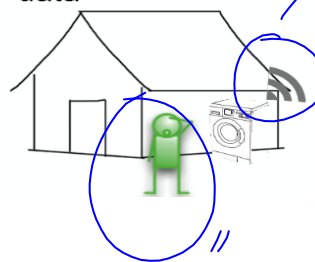
### Easyness Setup

- 1. step ownership
- take control



### Scalability

- business model for SIM/device not scalable
- free wireless for IoT data



Security challenges

Essay → Scenario/Use case

- Sec. challenges open wifi

- "announcement" { Iih - miter  
bonjour

- https announcement  
AV / chromecast

"transfer of wifi" / "Certificate" / Code (4779)  
- replay attack  
MITM

Info Internet → My WLAN

Scenario / IOT (Industry) SME

# TOC [edit]

Title page, abstract, ...

- 1. Introduction, containing: short intro into the area, what is happening
  - 1.1 Motivation, containing: what triggered me to write about what I'm writing about
  - 1.2 Methods, containing: which methods are you using, how do you apply them
- 2. Scenario, optional chapter for explaining some use cases
  - 2.1 user scenario, (bad name, needs something better)
  - 2.2 Requirements/Technological challenges 1. 2. 3.
- 3. State-of-the art/Analysis of technology, structure your content after hardware/SW (or other domains). Describe the challenges, and how they can answer the challenges
  - 3.1 technology A
  - 3.2 technology B
- 4. Implementation
  - 4.1 Architecture, functionality
  - 4.2
- 5. Evaluation
- 6. Conclusions
- References

ESS

how & (IoT SME)

security  
connectivity

Security assessment

? Measurable Security  
Security assessment  
Implementation

http  
https  
jiri, bozjow, ...



