



Digi Hackathon, 27Feb2020, MUHAS, Dar es Salaam

The Basic Internet Infrastructure

Josef Noll

University of Oslo & Basic Internet Foundation

Kjeller, Norway

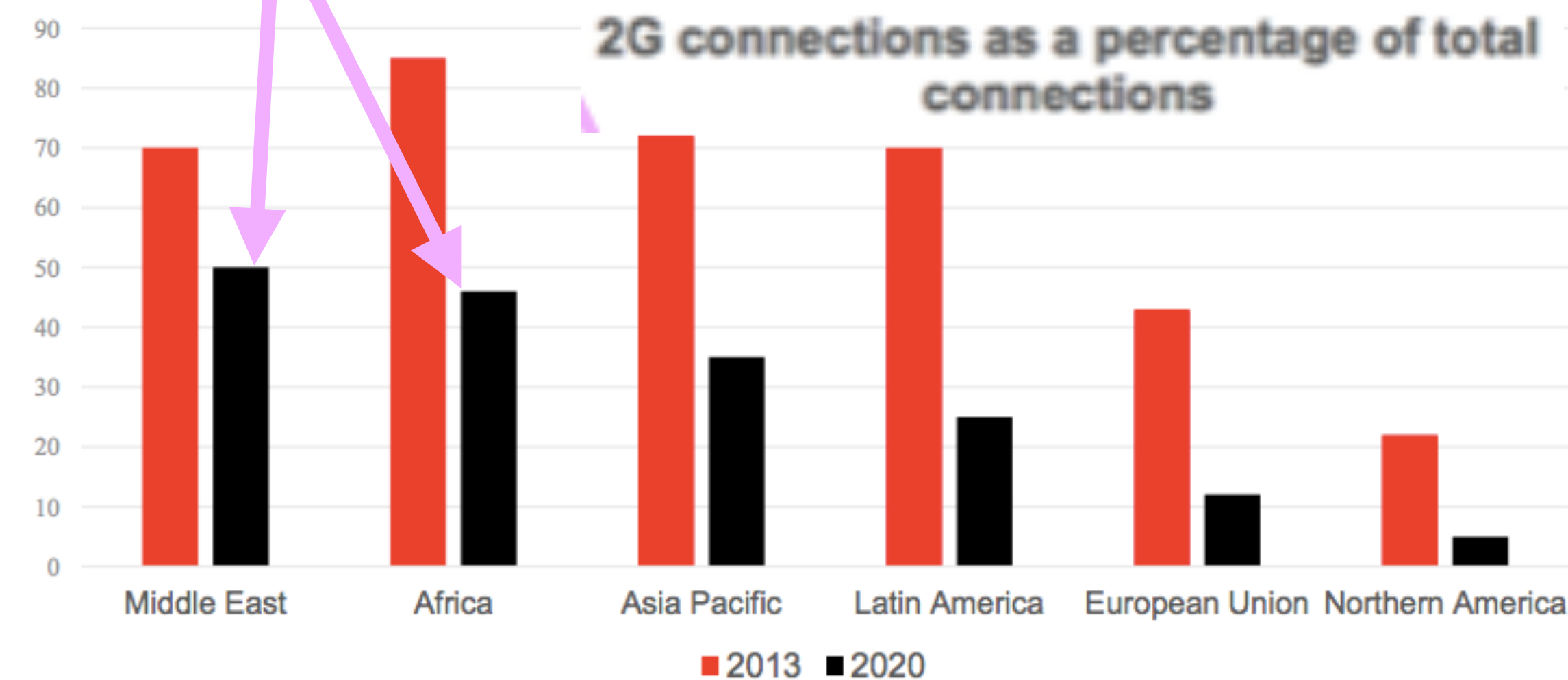
josef@jnoll.net, m: 9083 8066

The challenge of area coverage

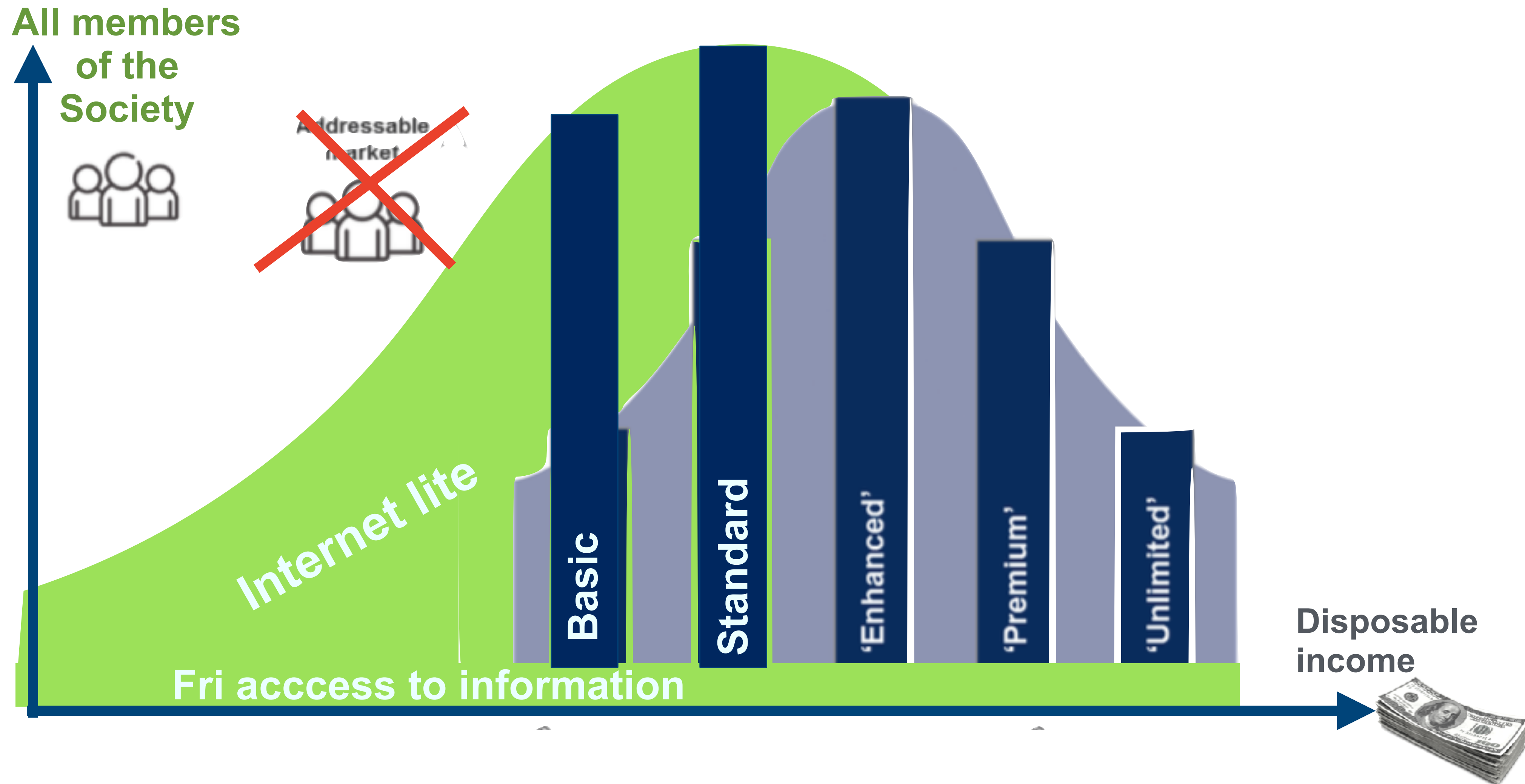
- Land area Norway, 385.178 km²
7500 baseestasjons
 - <http://www.mynewsdesk.com/no/telenor/pressreleases/sjekk-naar-du-faar-4g-der-du-bor-1399662>
- Tanzania 947.303 km² = **3 x** Norway
15.000 basestations
- Mali 1.240.000 km² = **4 x** Norway
- DR Congo 2.345.000 km² = **8 x** Norway
- Economy in building Wireless Broadband

#5GforAll

~50% 2G in 2020



6G (#5GforAll) for digital inclusion



[Adapted from: Service Innovation through Smart Networks, Ericsson, 2018]

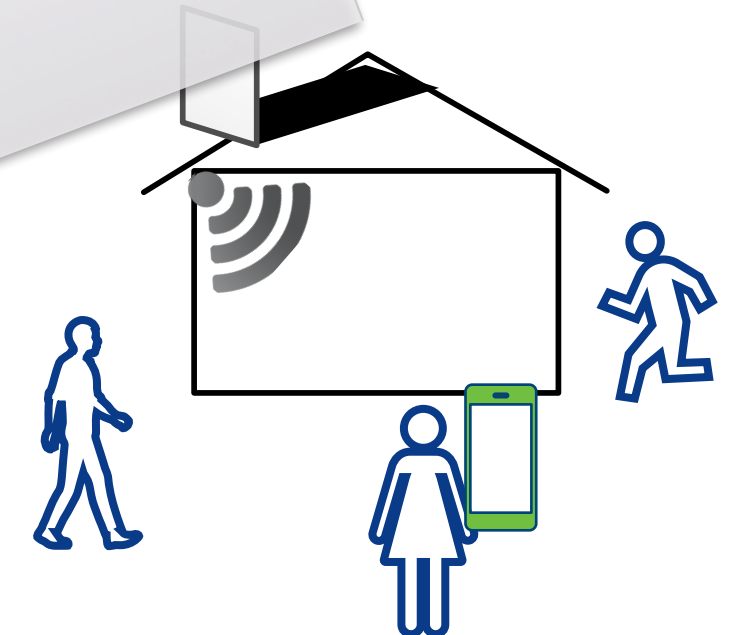
Main Message



- “Internet Lite for All” is the catalyst for the SDGs
 - ➔ free access to information for everyone
 - “walking and cycling on the Internet”
 - ➔ Digital Inclusion and Empowerment
- Freemium model for access
 - ➔ free access to information for all
 - ➔ premium access to broadband
 - ➔ sustainable solution

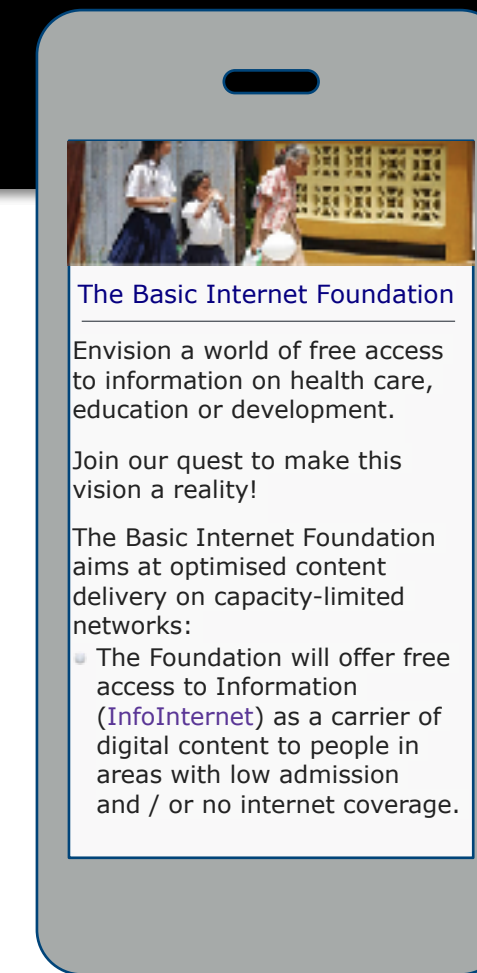
“Providing Internet to the basic of the pyramid isn't a question of affordability, but rather a question of sustainability”
Internet Governance Forum, Panel, WIN

At least
one Information Spot
per village

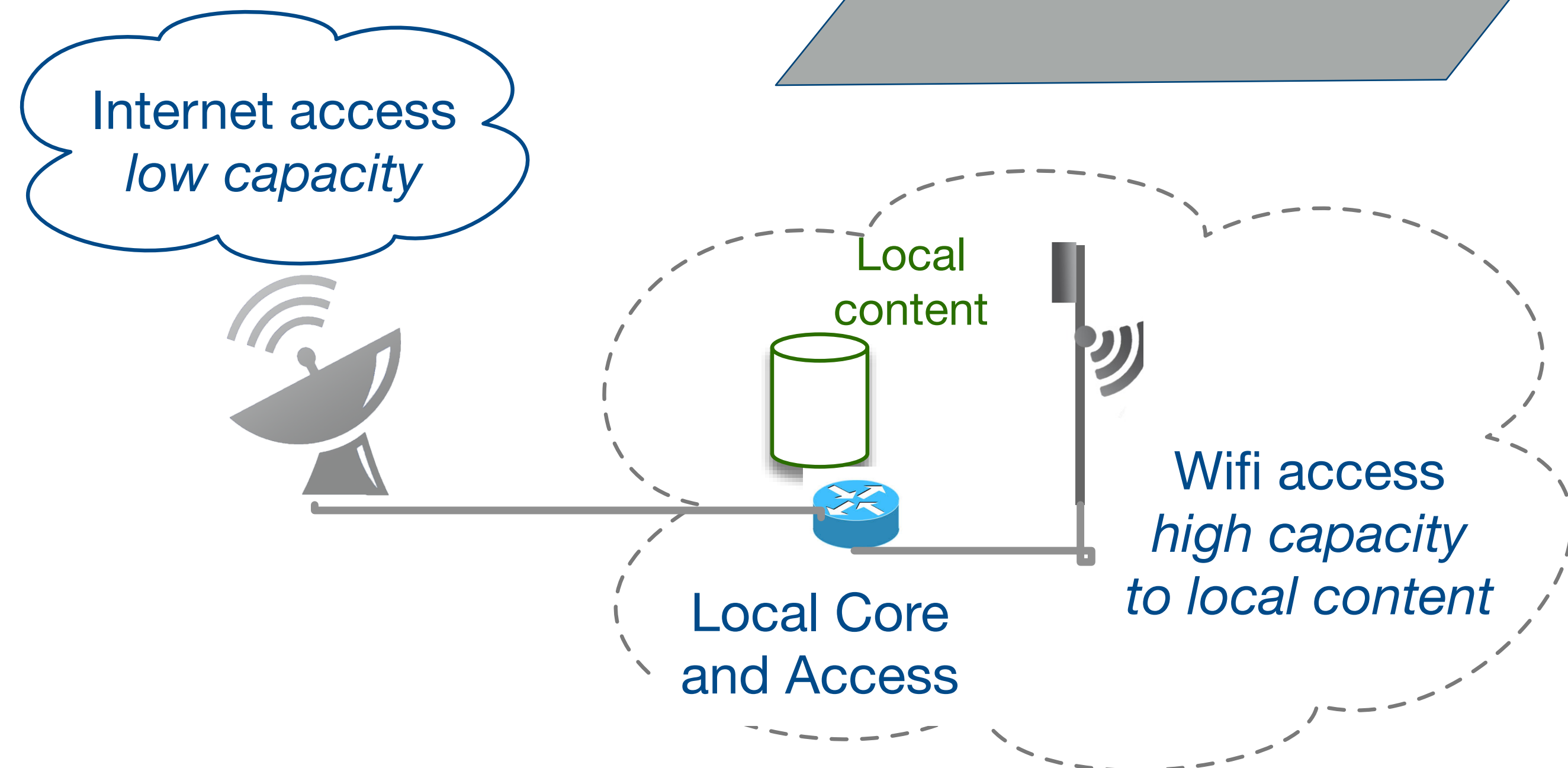


The Network Responsive Web

- Network responsive Web
 - ➔ through InfoInternet Standard
 - ➔ Adapt to network capabilities
 - Car queue in remote areas
 - Mobile tethering (Wifi)
 - ➔ Server-side adaption of content
- Examples
 - ➔ Opera Mini (proxy)
 - ➔ Chrome (compression)



Responsive design



Lightweight Protocols, e.g. AMP

BasicInternet.org/Mission



Unconnected Areas

Despite some sort of connectivity, the privilege of access in some areas is that the access is not being used. This is the challenge that includes that access is not enough.



Women in Rural Areas

According to the report of the Alliance for Affordable Internet (Feb, 2017), the digital gender gap has increased globally from 11 % in 2013 to 12% in 2016. The gender gaps are more prominent in developing countries in comparison to developed countries.

BasicInternet.org/Mission/?amp

Unconnected Areas

Despite some sort of connectivity, the privilege of access in some areas is that the access is not being used. This is the challenge that includes that access is not enough.



Women in Rural Areas

According to the report of the Alliance for Affordable Internet (Feb, 2017), the digital gender gap has increased globally from 11 % in 2013 to 12% in 2016. The gender gaps are more prominent in

Lightweight Protocols, e.g. AMP

<https://basicinternet.org/internet-lite-to-the-migoli-high-school/> <https://basicinternet.org/internet-lite-to-the-migoli-high-school/?amp>



MISSION PROJECTS ABOUT PARTNERS MEDIA

INTERNET LITE TO THE MIGOLI HIGH SCHOOL

By josef | 4 May 2019 | Uncategorized

The Migoli High School has 1271 pupils (Apr2019) and 35 full-time teachers. The high school is located about 3 km outside of Migoli in the Iringa district in Tanzania.



Internet Lite to the Migoli High School

 josef

8 months ago

The Migoli High School has 1271 pupils (Apr2019) and 35 full-time teachers. The high school is located about 3 km outside of Migoli in the Iringa district in Tanzania.



Migoli (Nyerere High School)

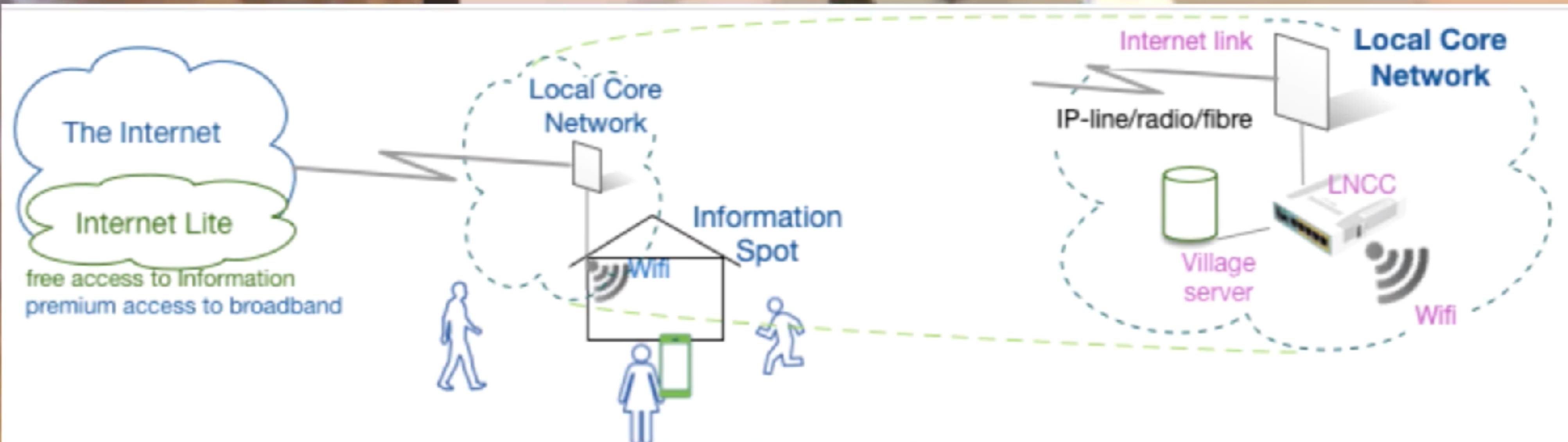
1271 pupils, 34 full-time teachers

BasicInternet Infrastructure

<https://vimeo.com/354375901>



Wisam Mansour, Basic Internet Foundation explains how to connect the equipment for a local Information Spot. See: BasicInternet.no/Solutions



BasicInternet Infrastructure

<https://vimeo.com/354375901>



Access for Digital Inclusion

LNCC provides Wifi and connectivity to Village server



The diagram illustrates the Basic Internet Infrastructure. It shows a "Local Core Network" connected to the "Internet link" via an "IP-line/radio/fibre". This network is connected to a "Village server" and a "LNCC" (Local Network Control Centre). The LNCC is shown with a "Wifi" signal, indicating it provides wireless connectivity to the village server. A red arrow points from the LNCC in the diagram to the physical device being held by the woman in the video.

Local network control centre (LNCC)
see: BasicInternet.no/Solutions

Freemium: Free & Premium access

https://its-wiki.no/wiki/BasicInternet:Voucher_Platform



FREE INTERNET ACCESS!

Voucher access for Internet

login

password

Login

**BasicInternet.org**

Voucher Platform for Basic Internet [\[edit\]](#)

Our team at Mondragon University have created the Voucher Platform for Basic Internet. The Voucher platform is available as <https://voucher.basicinternet.org>

Create Vouchers [\[edit\]](#)

To start, select the Zone (Region) for which the vouchers shall be valid.

In every region/zone we have a voucher administrator who can log-in on the voucher platform. This person is a *Zone Administrator* and has the authority to create vouchers for his region, e.g.

- Catherine for TZ African Child
- Rashid for TZ BOACSE
- Barrack for Aheri

Create a voucher batch

Select Zone Mikrotik Username Password

- ✓ KY-AHERI
- TZ-AfricanChild
- TZ-BOACSE**
- TZ-Digl
- ET-School
- NO-BasicInternet
- MY-School

Click on the *Create Voucher* to start voucher creation

Then create the Voucher limits, any combination of time (1h, 1day, 1 week, 1 month), amount (100 MB, 1 GB).

Please ensure to set **voucher limitation =1,3,6 months** to ensure that vouchers expire. Otherwise they will overload the platform. And please identify the set of vouchers (voucher badge) by a name representing what you created.

Create a voucher batch

Select Zone Mikrotik Username Password

Name TZ-AfricanChild_Feb2020_1h **take a name which identifies for you the voucher limits, e.g. 1 h**

Quantity 10 **number of Vouchers to be created**

☐ (Enable/Disable) Data transfer limits: **if needed, add amount limit, e.g. 1 GB, 100 MB**

☐ Upload transfer rate limit (yes/no): Upload rate limit

Name	Quantity	Upload / Download	Daily
NO-Jan2020-1h	10	--	1 Hour(s)
NO-Jan2020-4h	10	--	4 Hour(s)
KE-Feb2020-1h	10	--	1 Hour(s)
Feb2020-test-10	10	--	0.16666666666667 Hour(s)
AHERI_Omuga	10	--	0 Hour(s)

Create vouchers
+Create new voucher batch

[\[hide\]](#)

1 Voucher Platform for Basic Internet

1.1 Create Vouchers

1.2 Role administration

1.3 Technical details



Whitelist filtering

Example: hapAC Kenya

Whitelist per country

Name
 RB950Gravid2Whitelist.txt
 hapACUgandaWhitelist.txt
 hapAC-Myanmar.txt
 hapAC-Ethiopia.txt
 hapACTZWhitelist.txt
 hapACKenyaWhitelist.txt
 00Readme.txt
 hapAC-TZ-Patandi.txt
 hapAC-Mali.txt
 hapAC2IN2Whitelist.txt
 RB960DEWhitelist.txt
 hapAC2INWhitelist.txt
 RB950KjellerVillage.txt
 RB950Gravid5Whitelist.txt
 RB950TrygtSvangerskap.txt

Dev

ownCloud/Device/hapACKenyaWhitelist.txt

```

*porn*,deny
*standardmedia.co.ke,allow
*tuko.co.ke,allow
*TrygtSvangerskap.no,allow
*google.com,allow
*yeboo.com,allow
*.int,allow
*unicef.org,allow
*accuweather.com,allow
*the-star.co.ke,allow
*.go.tz,allow
*cnn.com,allow
*helsenorge.no,allow
*helsedirektoratet.no,allow
*matportalen.no,allow
*oslomet.no,allow
*uio.no,allow
*bbc.com,allow
*opera-mini.net,allow
*norad.no,allow
*digi.futurecompetence.net,allow
*basicinternet.no,allow
*basicinternet.org,allow

```

```

*un.org,allow
*whatsapp.net,allow
*apple.com,deny
*gstatic.com,deny
*googleusercontent.com,allow
*gvt1.com,allow
*bing.com,allow
*who.int,allow
*googleweblight.com,allow
*basicinternet.info,allow
*google.co.ke,allow

*ghafila.com,allow
*jumia.co.ke,allow
*ntsa.go.ke,allow
*kenyans.co.ke,allow
*ecitizen.go.ke,allow
*nation.co.ke,allow
*gmail.com,allow

```

Needs CR-LF (Windows format!)

How to - step by step

- **Information** on Internet Lite
 - its-wiki.no/wiki/Digl:Internet_Lite_for_All
- Prior to establishing an Info Spot, **field work**
 - its-wiki.no/wiki/Digl:Establish_InfoSpot
- **Agreements (MoU)**, purchase and further steps
 - get in touch with the Basic Internet Foundation: info@basicinternet.org
- **Preparation** of roll-out
 - Note: **perform** these installations in an area with **good 3G/4G coverage** to ensure operability in the remote area vimeo.com/354375901
 - **Errors** and **validations**: problems.BasicInternet.no
- **Roll-out in the field** - best praxis from community members
 - see: BestPraxis.BasicInternet.no
- Establish **Vouchers** for premium services, see: voucher.BasicInternet.no
- Still **questions**? Search on our Wiki: BasicInternet.no