

The Future is Local

Steve Song (NSRC)

The Next Three Billion:

Initiatives to Bring the Whole World Online

9 Feb 2017



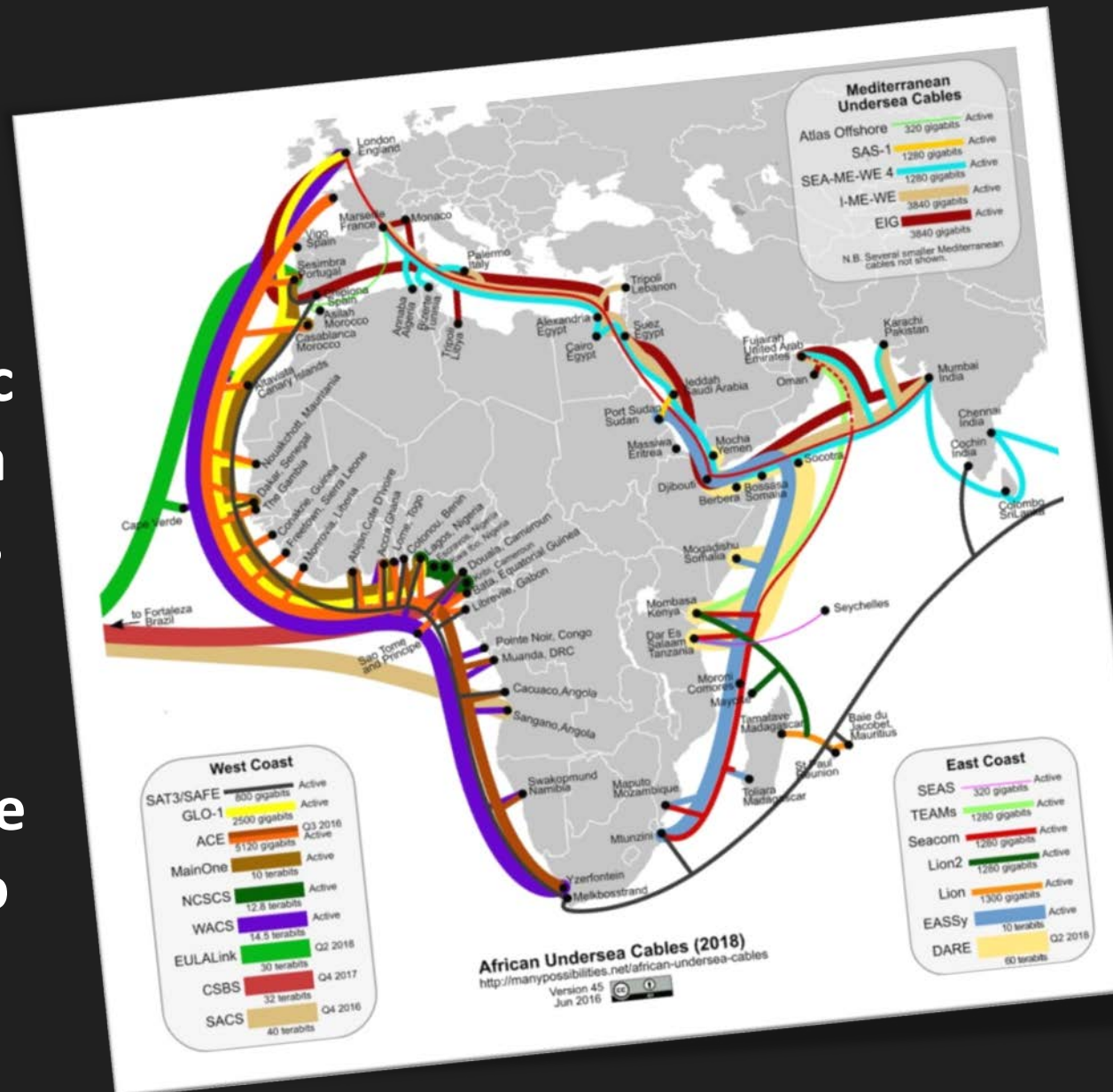
UNIVERSITY OF OREGON

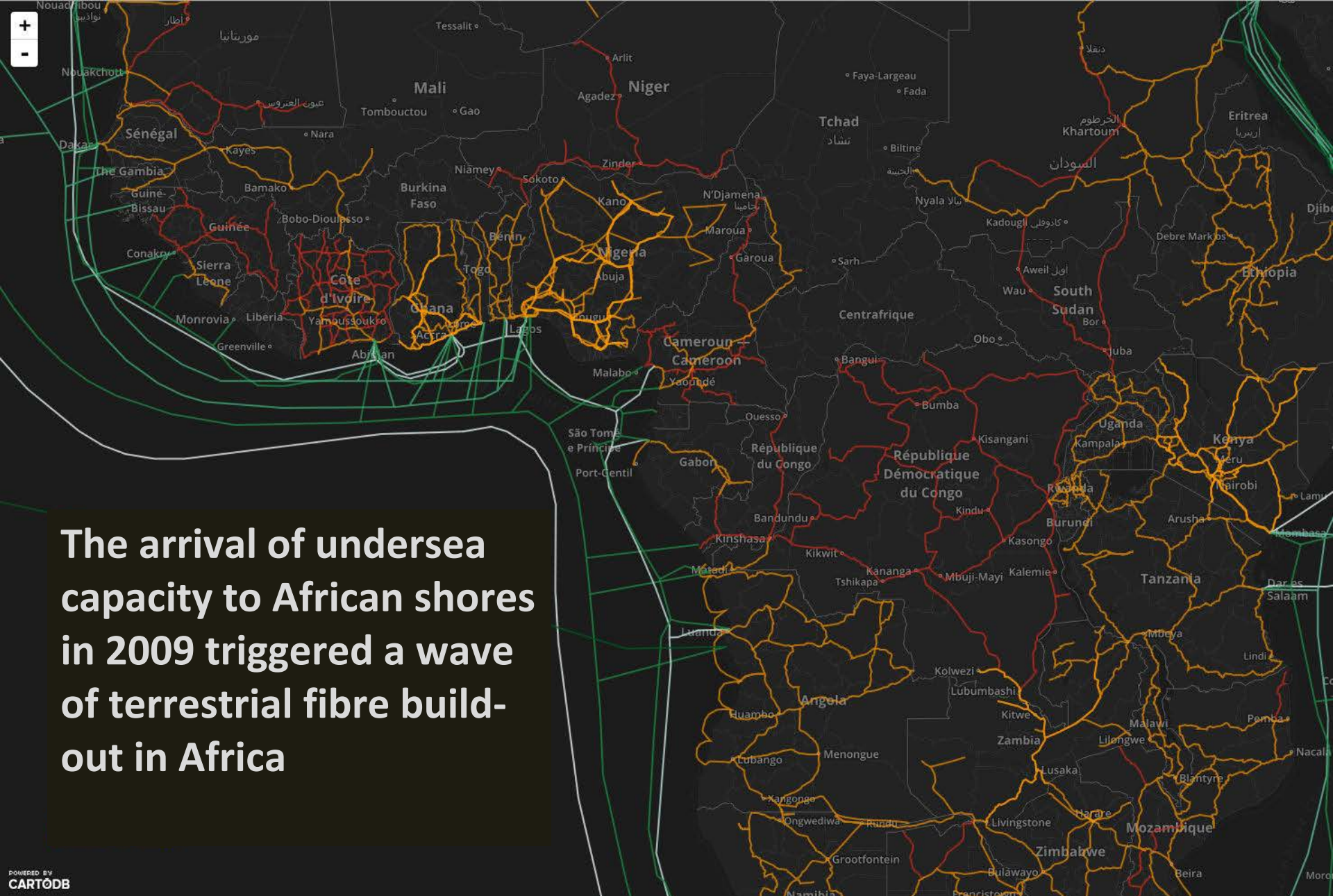


Undersea Fibre

The growth of undersea fibre optic capacity has been a catalyst for change.

The impact of technological change often takes years to manifest





The arrival of undersea capacity to African shores in 2009 triggered a wave of terrestrial fibre build-out in Africa

<https://afterfibre.nsrc.org>



Increased
pressure on
regulators to
make more
wireless
spectrum
available



Spectrum Auction Burden

live
mint

17 October 2016 | E-Paper

Sections

Last Modified: Fri, Oct 14 2016, 04:11 PM IST

Home » Industry

Was the spectrum auction a success or a failure?

Given Reliance Jio's battles with incumbents, it was unlikely telcos would collude, and so it is surprising that the government went with high reserve prices

Share Tweet In Share 8* Share Reddit

Enter your email to subscribe to this story

119

Karthik Shashidhar



While the spectrum auction mechanism was extremely sound and well designed, it was largely rendered moot by the absolute lack of buyer interest in the auction process. Mint

THE ECONOMIC TIMES

Corporate Trends

Home News Defence Company Industry Economy Politics and Nation International India Unlimited Sports More

You are here: ET Home » News » Company » Corporate Trends

MARKET STATS 04:05 PM | 14 OCT SENSEX 27,673 30.49 NIFTY 50 8,583 10.05 GOLD (MCX) (Rs/10g) 29,638.0 -71.0 USD/INR 66.71 -0.22

Spectrum auction wins may push Airtel's debt to \$2 bn: Moody's

By ET Bureau | Updated: Oct 13, 2016, 08:16 AM IST

READ MORE ON Telecom | Speed | New Delhi | Moody | cash flow | Bharti Airtel

NEW DELHI: Bharti Airtel's debt levels will rise by around \$2 billion, or approx ₹13,400 crore, due to its spectrum wins in the recent auctions, ratings firm Moody's said on Wednesday.

Moody's, however, retained its Baa3 issuer rating with a 'stable' outlook for Airtel, saying the higher debt can be "can be accommodated in the rating for a short time, as cash flow from operations and proceeds from monetisation activities are expected to reduce debt levels considerably within the next 6-12 months".

"We estimate Bharti's adjusted leverage, as measured by adjusted debt/EBITDA, will rise into the 3.3x-3.4x range at March 2017 and above our downward trigger level of 3.0x-

SPOTLIGHT

Jobs



The telco is expected to use cash from operations and monetisation opportunities, including investments in units, to speed up deleveraging towards 3.0 x within the next 6-12 months.

RELATED COMPANIES

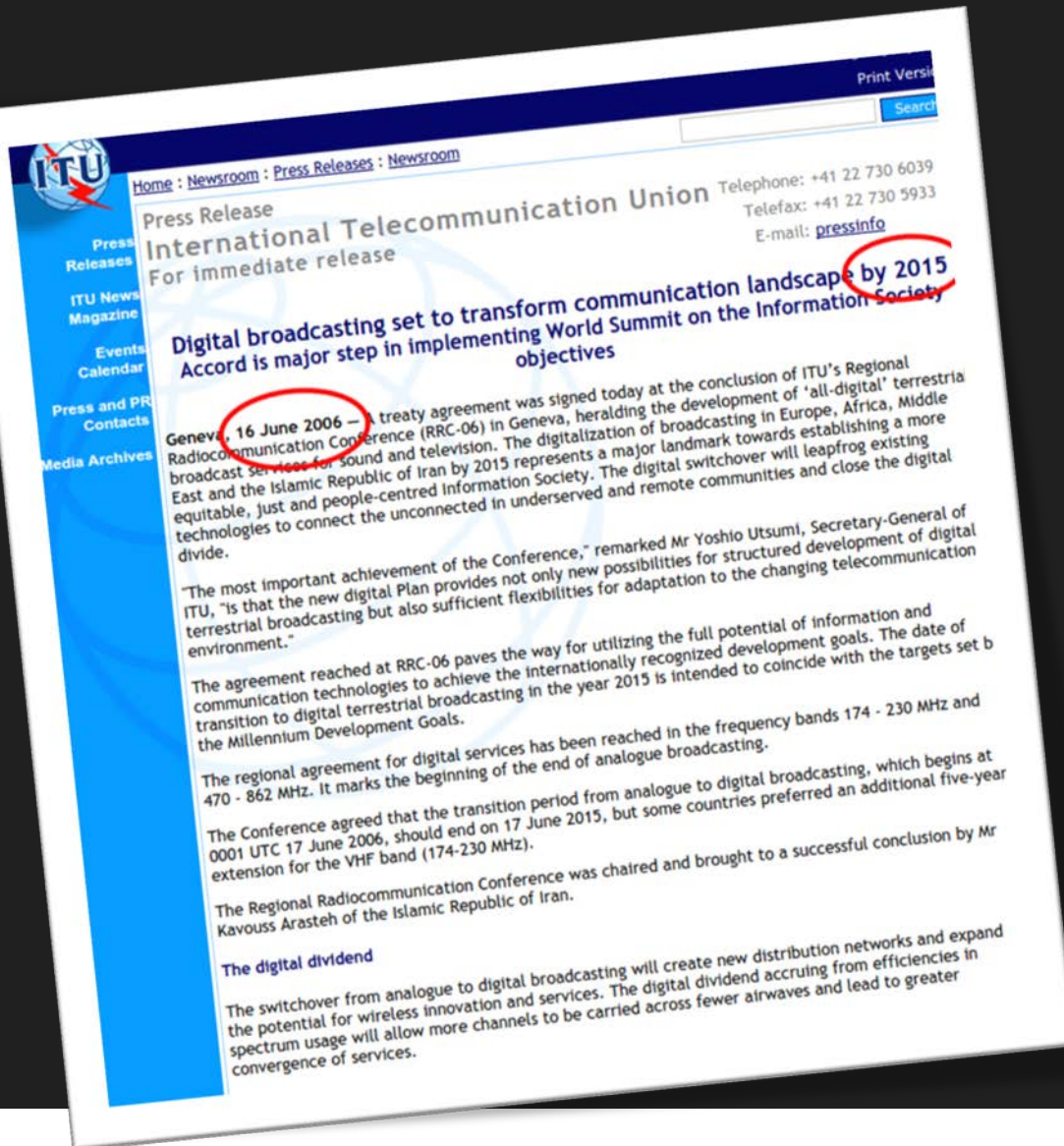
Bharti Airtel -0.70 (-0.23%) SLIDE SHOW
Airtel -0.70 (-0.23%) SLIDE SHOW



UNIVERSITY OF OREGON

NSRC
Network Startup Resource Center

2006 Digital Switchover Decision



Regulation Struggles to Keep Pace

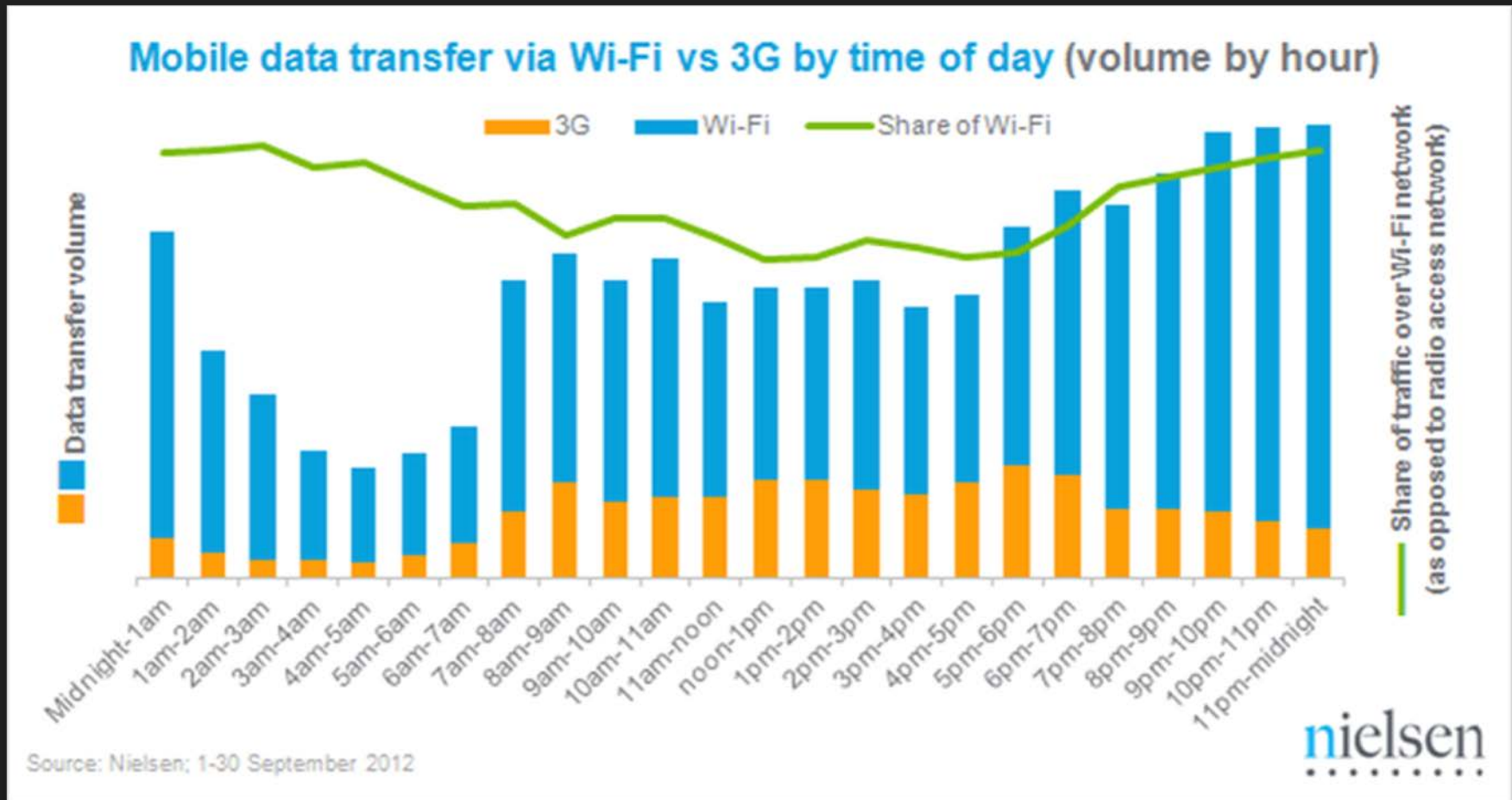


With wireless in particular there is a need for more diverse strategies

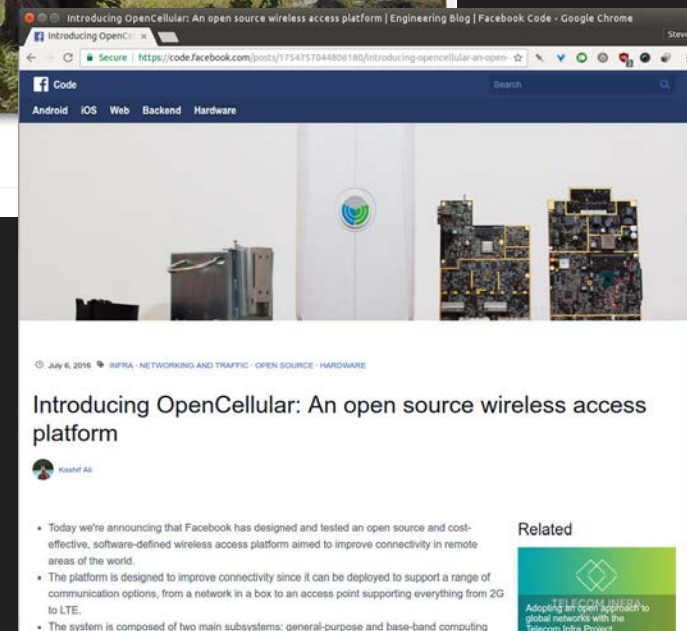
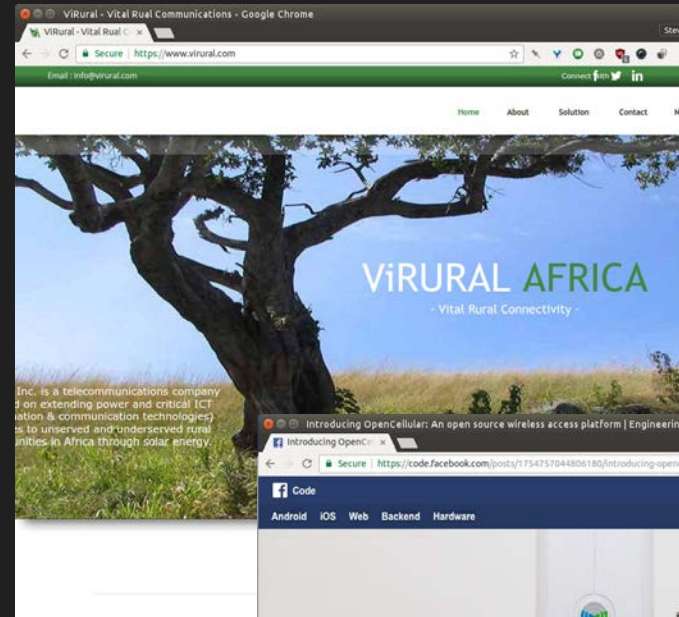
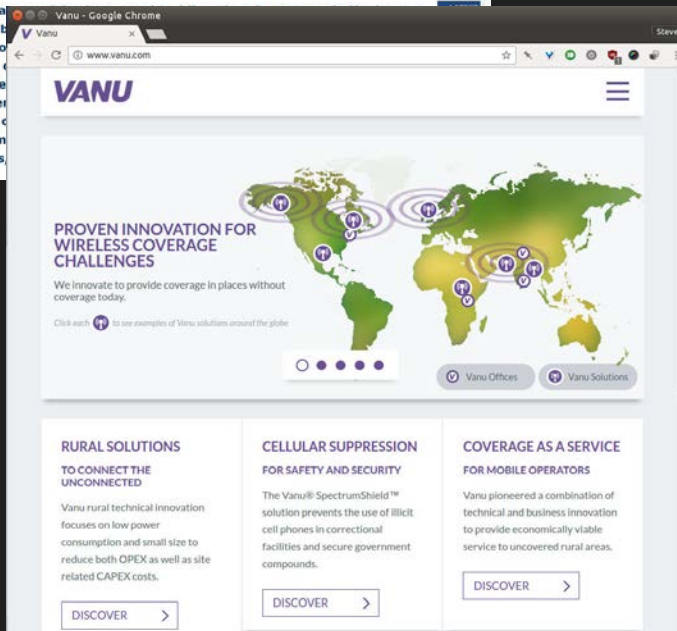
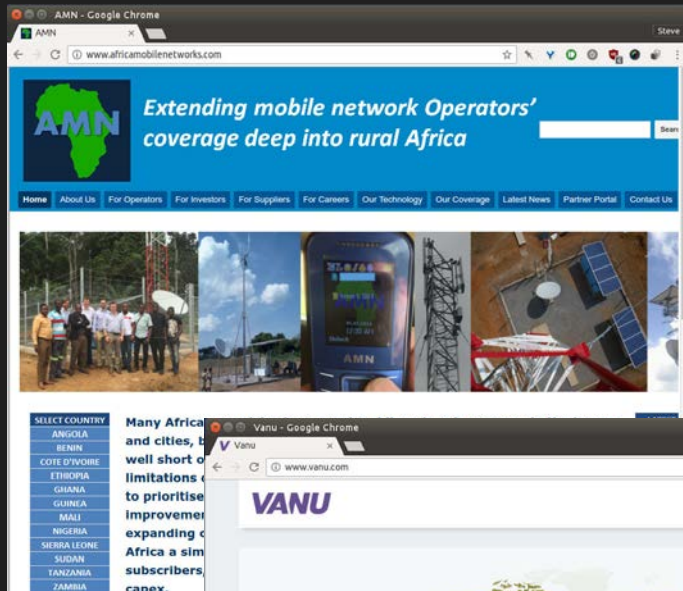
- ✓ Unlicensed
- ✓ Dynamic
- ✓ Set-asides



Growth of Unlicensed Spectrum Use



New Generation of Rural GSM



Community Cellular in Mexico



Regulator has set aside small amounts of GSM spectrum for rural underserved areas.

The Internet is made of and made by people

NSRC has been
building the
capacity of
Internet
engineers in
more than **120**
countries since
1992



UNIVERSITY OF OREGON



Thank you

Steve Song

@stevesong

<https://nsrc.org>

