POWER FOR ALL RESEARCH SUMMARY

Powering Last Mile Connectivity

POWER FOR ALL

4 billion

PEOPLE NOT CONNECTED TO THE INTERNET GLOBALLY

10%

INCREASE IN GLOBAL RIA USE LEADS TO OVER 0.3% INCREASE IN GDP PER CAPITA

$3.8 billion

GLOBAL ANNUAL EXPENDITURE BY MNOS AND CELLULAR TOWERS FOR DIESEL FUEL FOR THEIR GENERATORS

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Bloomberg New Energy Finance in conjunction with Facebook, released the *Powering Last Mile Connectivity*[1] report earlier this year. This report explores the opportunity for socioeconomic development and business by bridging the digital divide through affordable and reliable access to electricity. The report indicates that electricity is essential in powering and expanding all stages of providing internet access, from backhaul and base stations to charging consumer devices.

Energy access is important for internet connectivity, which can drive economic development.

» Closing the digital divide can create huge development and business opportunities. (3)
» Access to internet connected smartphones enables economic opportunities like social media marketing platforms of business ventures[2] as well as non-economic benefits like increase in social capital[3] by increasing access to Rich Interaction Apps (RIA). (3)
» For every 10% increase in global RIA use, GDP per capita increases by over 0.3% (3)
» Household electricity access can have a strong causal effect on connectivity. (5)
» In Kenya, each new grid connection resulted in one additional smartphone regularly connected to Facebook and 0.52 new users actively engaging on the platform within the first 12 months. (5)

There are many challenges to getting connected for customers, especially in rural areas.

» Off-grid consumers travel up to 15 kilometers per week to charge their phones at small kiosks, often paying around US$0.10-$0.30 per battery charge (4) quite an expense considering that 72% of Africans live on less than US$2 per day.[4]
» Over 60% of adult Facebook users in Nigeria reported not being able to charge their devices regularly due to lack of electricity.(4)
» Staying connected is more expensive in rural areas. This is because rural areas often have poor signal strength. Reports have shown that poor signal strength leads to much quicker battery drain hence the need for charging is increased.[5]

There are many challenges to getting connected for customers, especially in rural areas.

» Globally, mobile network operators (MNOs) and cellular tower operators spend $3.8 billion for diesel fuel annually. (3)
» More than a million cellular towers in developing countries are off-grid or have at best extremely unreliable grid supply. (8)

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By the Numbers:

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» The generators used and fuel they consume make up to 40-50% of the total operating cost of the tower. (8)
» Many tower operators prefer to rely on established technologies or shy away from the far higher capital expenditure for solar. (8)
Hybrid power networks, composed of a mix of solar, diesel generators and batteries, can save Mobile Network Operators up to 54% of the energy cost for an off grid tower that a conventional diesel generator
» would incur. (8)
This therefore opens opportunity for specialized distributed renewable energy providers that can operate and finance solar energy for towers and help telecoms reduce the cost of serving remote areas. (8)

BNEF and Facebook offer key recommendations for increasing connectivity through energy access: collaborate, innovate and finance.

» MNOs need more sustainable and cost effective power at the last mile, while local energy providers, especially micro-grid operators require more stable sources of revenue. Deployment partnerships present an opportunity, with both sides improving financial and operational performance. (10)
» MNOs can support distribution of DREs through their already established distribution and logistics network. (9) Pay as you go solar companies can collect large numbers of small payments through mobile carriers, boosting MNO revenue. (10)
» Also, MNOs and pay as you go solar companies can benefit from sharing consumer data thus understanding consumer requirements. (10)
Innovative products reduce soft costs across payments, supply chain and customer service. MNO's can support these efforts through, small research grants, start up accelerators, seed and early stage capital and through sharing expertise which help support and scale deployment of DRE. (11)

Closing the digital divide can create huge development and business activities through connectivity. Join Power for All and share the following message:

» Getting and staying connected is a costly process for rural customers. Hybrid networks can save MNOs up to 54% of the energy cost for an off grid tower.
» Collaboration, innovation and private finance ventures between MNOs and DREs will lead to improvement in internet and power connectivity.

Sources:
1. Bloomberg New Energy Finance, Facebook (2018). Powering Last-Mile Connectivity. All numbers in parentheses are page references from this source.
2. AM Kaplan, M Haenlein (2010). Business Horizons
3. Nicole B.Ellison, et al. (2007). "The Benefits of Facebook "Friends:" Social Capital and College Students' Use of Online Social Network Sites".
4. Global-Growing.org
5. Ning Ding et al (2013). "Characterizing and Modeling the Impact of Wireless Signal Strength on Smartphone Battery Drain". SIGMETRICS Perform. Eval. Rev., Vol 41, No 1