Capacity Building

Mobile for Socio-Economic Development

Workshop on Mobile
Regulation for Socio-Economic Development
Ministry of Transport and Communications
Naypyidaw, Myanmar

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20-21 July 2016

Recap of Day 1

Mobile as a driver of economic growth

Case Studies

Enhancing affordability through best-practice taxation

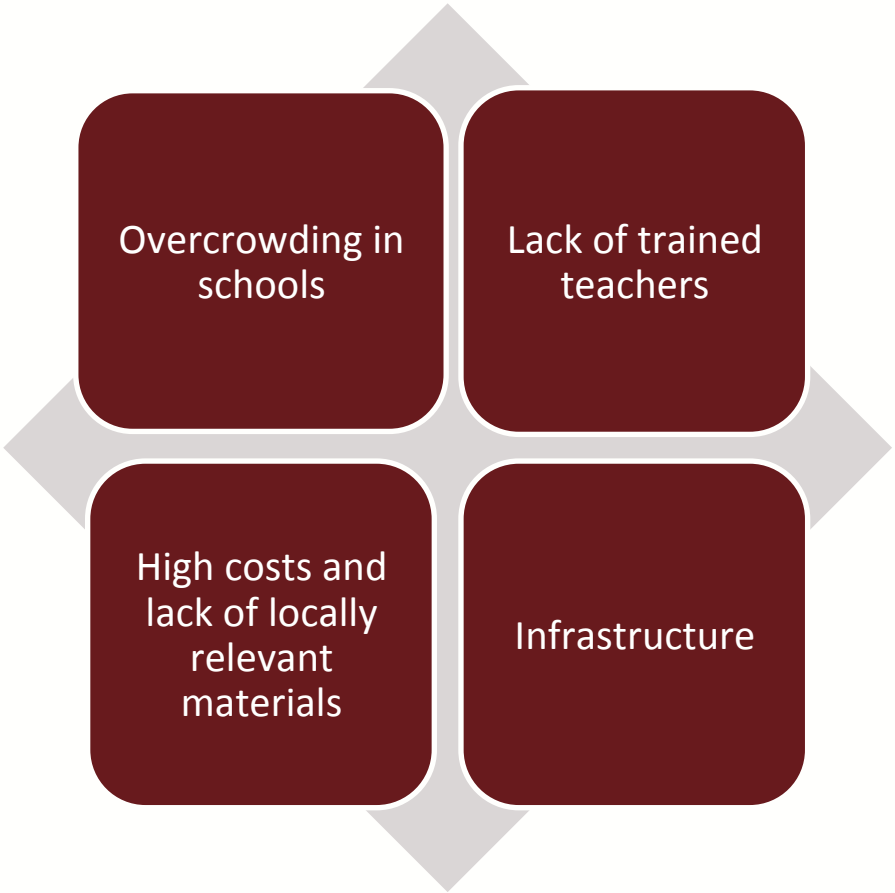
Regulatory models for widening broadband access

Session 7: Mobile Learning and Health

Mobile Learning

Challenges of education today

Education is in crisis and currently grappling with many issues, including:



Role of Mobile in Learning

Mobile is revolutionising the world of learning and providing a vast array of benefits for lifelong learning:

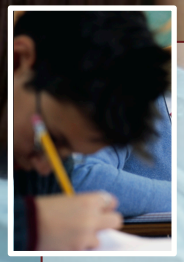
- Personalisation
- Flexibility
- Efficiency
- Localisation
- Inclusion
- Cost savings
- Reach
- Immediacy

Potential of mLearning

Programmes focused on mLearning have the potential to:

Supplement or directly facilitate teacher training, making more teachers available to alleviate overcrowded classrooms

Provide learning anytime, anywhere and on any device



Promote efficiency across education delivery processes

Why mLearning policies matter

Mobile technology is playing a key role in improving the quality and access to education in many countries in the Asia Pacific region.

Along with education, youth unemployment has become a growing concern for many economies in Asia Pacific.

The region has more than 700 million young people, of which only about half have jobs. According to the World Bank, youth unemployment rates range from just over 10% in India to nearly 20% in Indonesia.

Many of the 300 million that are employed are forced to accept jobs in the informal sector, which often offer poor pay, unsuitable working conditions and weak future prospects.

Mobile education and employment solutions are playing a vital role in bridging this gap by providing access to better job opportunities, skills training and mobile certifications.

Source: GSMA, Mobile Economy Asia Pacific (2014)

Policy guidelines

When considering developing an mLearning policy, it is important to:

- Review and update existing policies
- Conduct proper planning and ensure sustainability
- Promote intersectoral and multi-stakeholder partnerships
- Leverage existing resources

Reviewing and updating existing policies

What the current regulatory environment looks like:

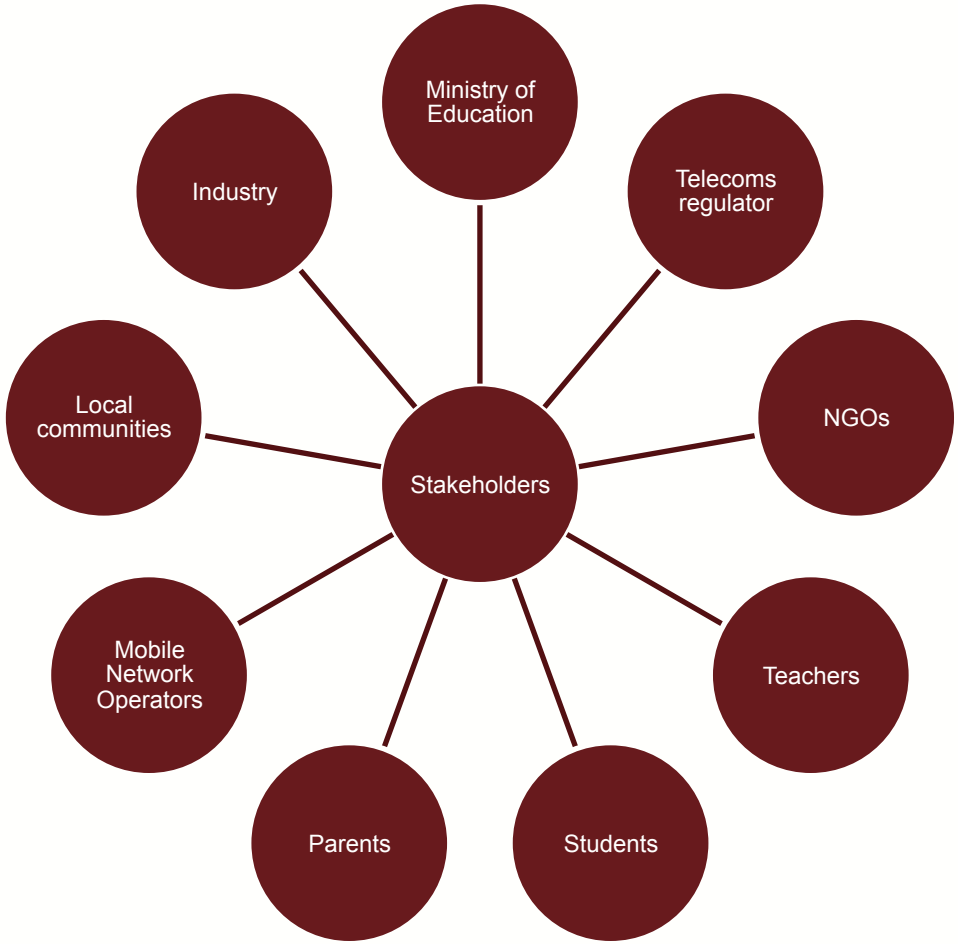
- The education sector lags behind other industries when it comes to embracing the use of ICT tools
- Teachers are bound to act under the directives of their principals, who may not know the potential of mLearning
- There are rules and regulations that hinder, or even prohibit, the use of mobile phones in school environments
- There are limited policies in place to protect children on the internet, or promote safe use of the web
- Flexible regulations around the use of proprietary and open source technologies

Conducting planning and ensuring sustainability

mLearning initiatives in formal education systems need to be ‘top down’, rather than ‘bottom up’.

Creating a clear roadmap can assist in the process of moving from policy to implementation and help policymakers monitor progress towards realising their policy aims. Areas of focus include:

Promotion of intersectoral cooperation and multi-stakeholder partnerships



If mLearning policies are to be successful they need buy-in from a number of stakeholders, ranging from government bodies to students and parents

Leverage existing resources

In developing nations and emerging markets, mLearning allows governments to leverage existing resources, as more people have access to mobile devices than traditional PCs.

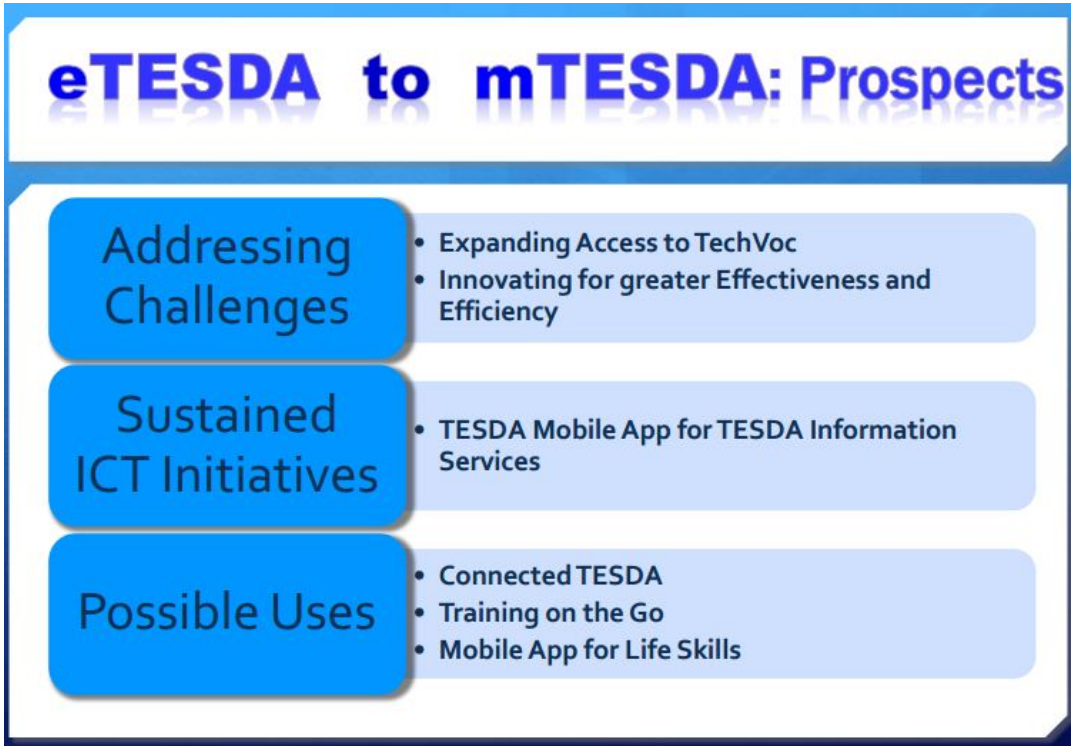
- Access to the internet via fixed lines in many countries in the region is low, which highlights the importance of mobile solutions
- Device penetration for PCs is much lower than ownership of mobile devices
- Mobile device literacy is higher than PC literacy
- Many countries have implemented national eLearning strategies including eLearning content development programmes that can be adapted for delivery on mobile screens
- Ongoing access to a mobile device can facilitate ongoing access to training

Reflections on mLearning in Myanmar

1. What is the importance of a national strategy covering the use of technology in education in today's global economy?
2. How can new or existing legislation covering ICT in education be effectively communicated to teachers and school leaders so that change happens 'on the ground'?
3. What is the end users' constitutional right to privacy and data protection if learning and administration is carried out via mobile devices?
4. What legislation is needed to ensure that access to mobile broadband can be leveraged to extend the reach of mLearning to rural areas, where people have traditionally been excluded from digital advances in education?
5. How might public consultations be used to inform policies governing the blocking of access to inappropriate content in a school environment and the safeguarding of students online?
6. Why might the Ministries/Departments of ICTs and Education need to work together to realise new or strong mobile learning policies and regulation?

Abot Alam, Philippines

The initiative was launched with the backing of multiple government agencies in 2013 to support out-of-school youth.
A **Policy for mLearning** was integrated into the plan of each agency responsible for its implementation.
By the end of 2014, more than 400,000 out of school youth had been enrolled in various education programmes.



Source: TESDA, GSMA

Mobile Health

The role of mobile in healthcare service delivery

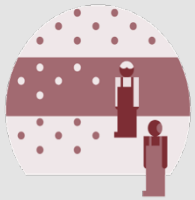
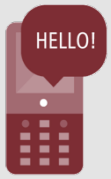
Worldwide, healthcare providers are being asked to deliver more for less.

The pressures on healthcare systems worldwide have never been greater due to increasing demand for quality services at more affordable prices

There is growing international evidence that mobile solutions can improve the quality, delivery efficiency and affordability of care

Significant policy and regulatory barriers must be overcome before these solutions can be fully integrated into the health system

Potential of mHealth solutions

Service area	HEALTH CONTENT	REGISTRATION	HEALTH WORKERS	SUPPLY CHAIN	ADHERENCE, MONITORING
					
Outcome	Increases knowledge and behaviour change Supports demand for services	Create SIM based health registration (health identity)	Improves quality and efficiency Extended hospital services	Improves supply chain and logistics	Increases drug adherence Innovative and cost-effective diagnostics
Example	Health tips/ content Health value added services Health incentives	Pregnancy registration Patient records	Job aids Household surveys Data collection	Stock outs Facility management Drug authentication	Treatment reminders HIV diagnostic Referrals
Commerce					
Data					
Connectivity					
Billing					

Regulation needs to respond to regional challenges

The wide disparity in spend means that challenges faced by healthcare systems are somewhat different in the developing and developed world.

Despite the considerable growth in the number of mHealth services around the world, the understanding of how to create value for both health provider and mHealth supplier in a scalable and sustainable way is still poor.

An enabling regulatory environment is required to formally promote the integration of mobile into healthcare systems.

Current regulatory environment

Without a clearly defined, enabling regulatory environment that is supported by strong proof points, health buyers (governments and third party providers) are unable to incorporate mHealth services into their budgets.

Healthcare lags significantly behind other industries when it comes to embracing the use of electronic information

Healthcare workers are bound by their regulatory bodies who are slow to adopt new technologies

Sharing information across care geographies is the exception rather than the rule, and this affects continuity of care

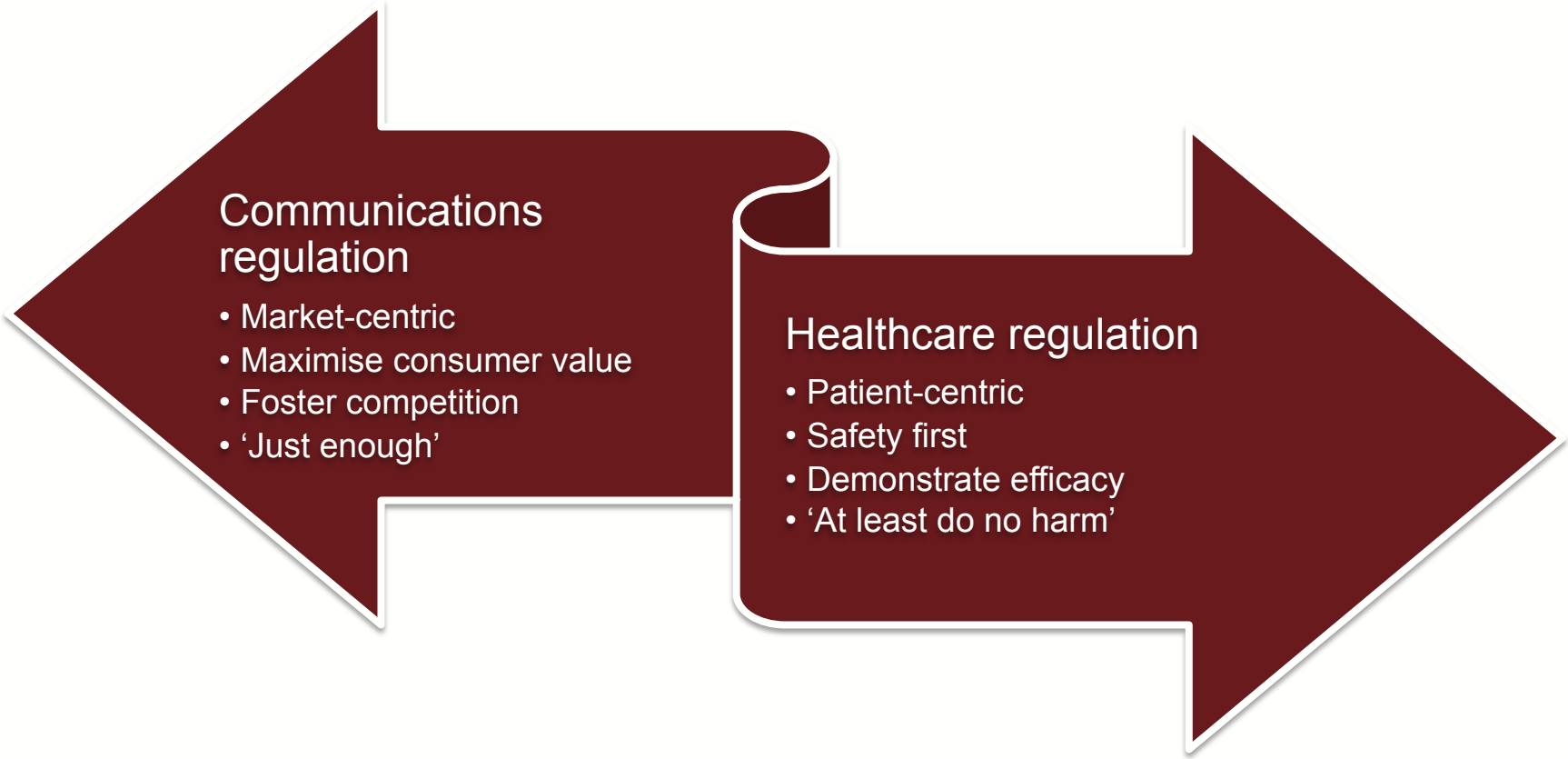
There are laws that hinder, or even prohibit, the use of electronic communications for healthcare

Rules regarding privacy and security are unclear, unevenly applied or unduly burdensome

Common technological standards and interoperable approaches are needed to support an open and patient-centred system

Harmonising two cultures

Regulatory issues arise in mHealth largely due to different regulatory motivations. To support innovation, drive adoption and achieve commercially sustainable economies of scale, mHealth policy needs to combine both approaches.



Boundary issues

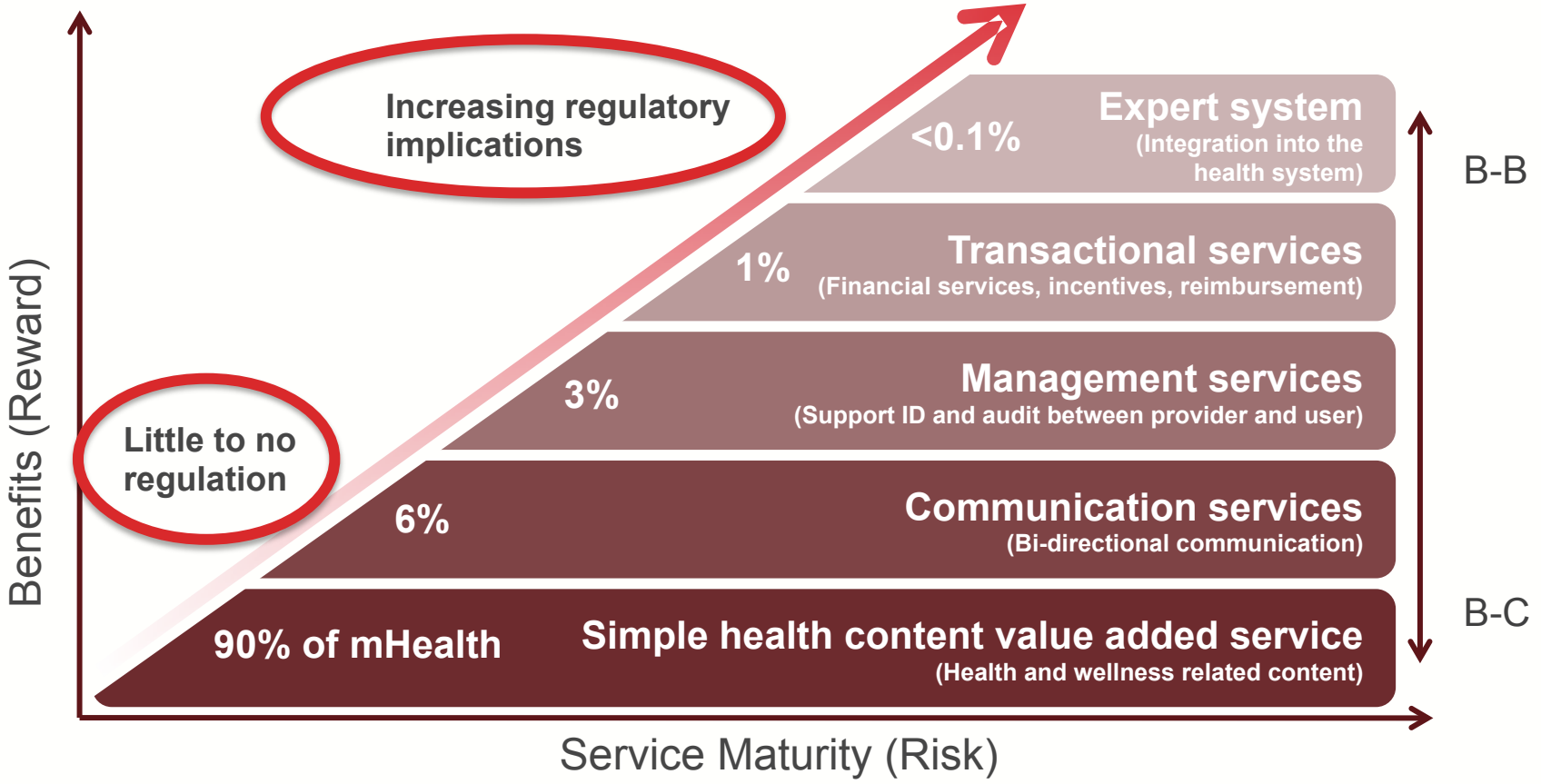
Regulators are currently grappling with boundary issues.

- Prevention (content Value Added Services) requires little/no regulation, but what are the boundaries when suppliers start offering diagnostic services?
- Does a patient need to be seen face-to-face to be diagnosed?
- What medico-legal risk does the mobile operator assume?
- Is the network that supports the handset a medical device?
- Should mHealth mobile apps be classed as medical devices?

Ultimately, the safety of an mHealth device or service can only be fully understood by taking into account the end-to-end system of which the device or service is a component.

Regulation increases with risk

As we climb higher in the value chain, the medico-legal risk increases and therefore the need for regulatory intervention also increases.



Reflections on mHealth in Myanmar

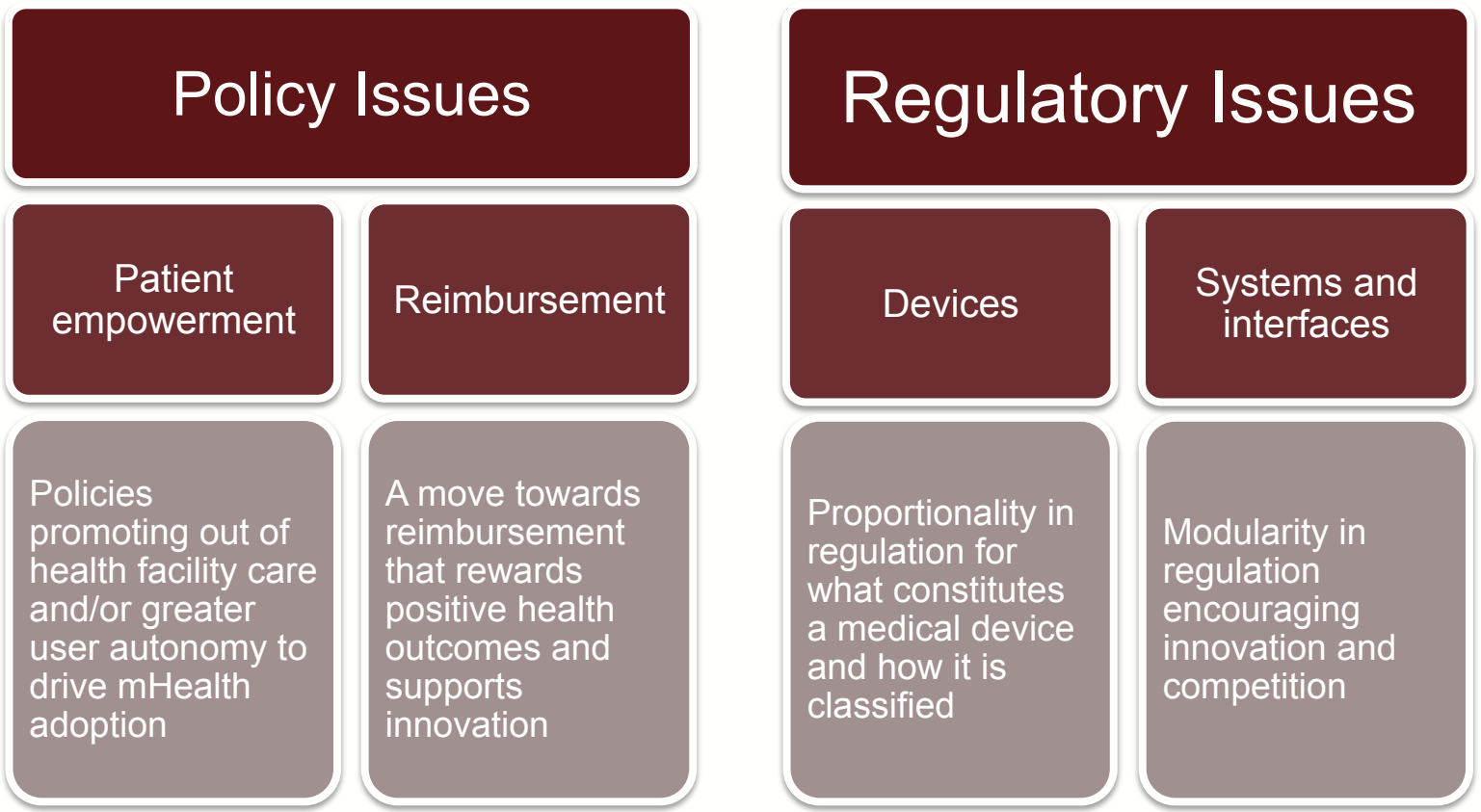
1. Does the country have a national electronic strategy? Is the national electronic strategy standalone or embedded into broader healthcare legislation?

2. What is the role of the government in the traditional medical device and pharmaceutical sector — fully regulated, guided market, free market or combination of these approaches?

3. How , if at all, is government actively supporting growth of the mobile health sector?

4. What mobile health initiatives might be relevant to implement in Myanmar? Why?

Ideal policy and regulatory landscape for mHealth to thrive



Proof points enable decision making

Stakeholder	Evidence Required	Key Decision
Regulators	Risk Safety	Market authorisation and endorsement
Medical professional	Cost comparison Clinical evidence Ease of use	Cost assessment Development of clinical guidelines
Payer	Value for money Health system benefits	Reimbursement Eligibility for treatment
Healthcare provider	Clinical outcome Cost effectiveness	Adoption of new interventions
User	Usability Preference	Utilisation of mHealth

Aponjon, Bangladesh

- Aponjon is an mHealth service that offers advice and support to new and expectant mothers in Bangladesh
- Following a 12 month pilot, it was launched nationally in December 2012 by Bangladeshi social enterprise, Dnet, in partnership with the Bangladeshi Ministry of Health and Family Welfare
- Since launching, it has grown to serve more than 500,000 mothers and families and trained over 3,000 community agents and brand promoters who raise awareness of the service and assist subscribers in signing up
- Information is delivered twice weekly in one of two forms: SMS or 60-second voice messages
- The service costs two taka ($0.02) per message, but aims to provide the messages free to at least 20 percent of the poorest subscribers
- It is also exploring the development of higher-end apps (for better off users) that could help cross-subsidise the basic service.

Source: http://www.mobilemamaalliance.org/mama-bangladesh

m4Change, Nigeria

- Includes a mobile conditional cash transfer to incentivise pregnant women to attend antenatal care
- m4change is implemented in over 20 health facilities, serving approximately 15,000 pregnant women and new mothers
- There are an increasing number of mHealth services that include a mobile money component
- Payments are typically made for transport to health facilities, micro-insurance, or to create incentives around taking medications, attending clinic visits and completing immunisation schedules
- Strong leadership from the Nigerian Ministry of Health to drive interoperability with the banking and mobile sector

Source: IDF.org, pathfinder.org

Session 7: Mobile Broadband Network Regulation

- Traffic management in mobile networks
- Mobile backhaul connectivity

Mobile networks are complex

Mobile phone use has grown hugely because mobile technology is simple and convenient to use.

However, the networks that underpin mobile services are complex to plan, build and operate.

How mobile networks work: Cells

Mobile phone networks are built on a cellular design.

The mobile network is split up into many thousands of overlapping areas or cells.

- These can be visualised as a series of hexagonal cells with a base station located at their centre. In reality, each cell overlaps slightly at the edges to ensure users don't experience dropped calls as they move from one cell to another.

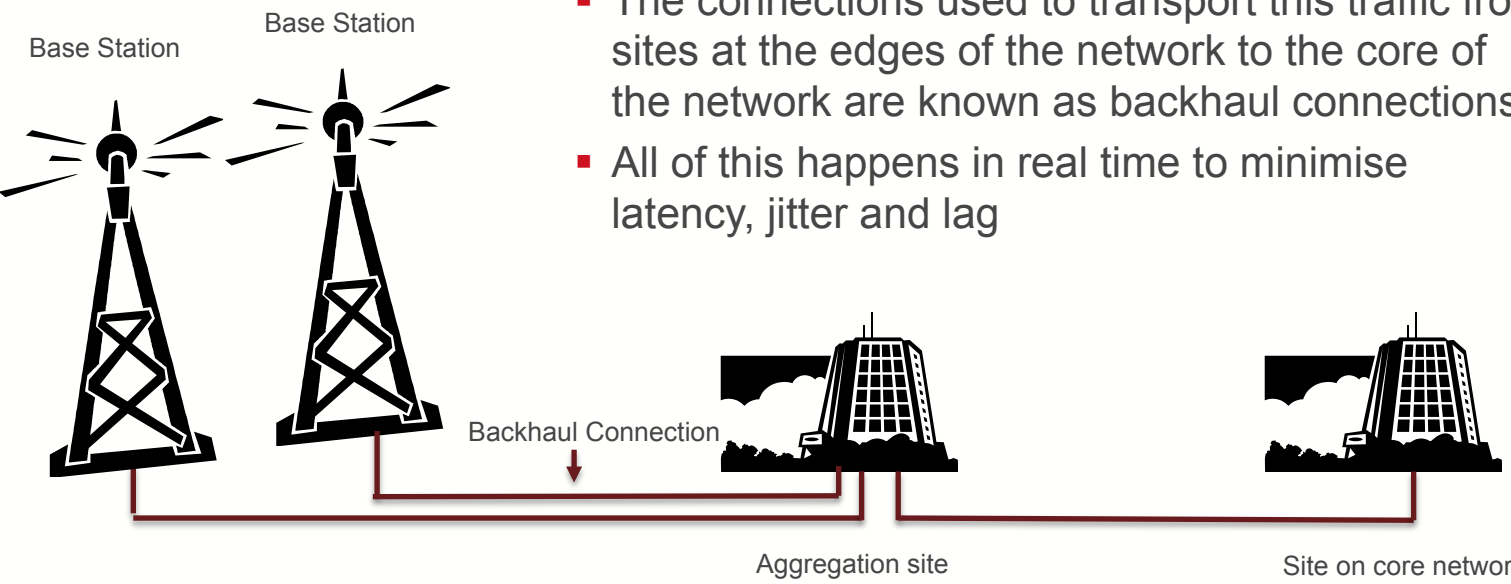
- Cells vary in size depending on the number of users they need to serve and the capacity they need to support. Cells in urban areas tend to be geographically small, while ones in rural areas are much larger.

Base stations

- Base stations connect mobile devices to the network and each one acts as the hub for the cell
- They are also connected to various switching centres that track calls as they move from one base station to another, so users are kept connected
- Base stations are connected into the core network too, allowing calls to be routed between mobile and landline numbers and between mobile operators
- They also provide a link to the internet, so data can be routed to and from mobile handsets

Backhaul links

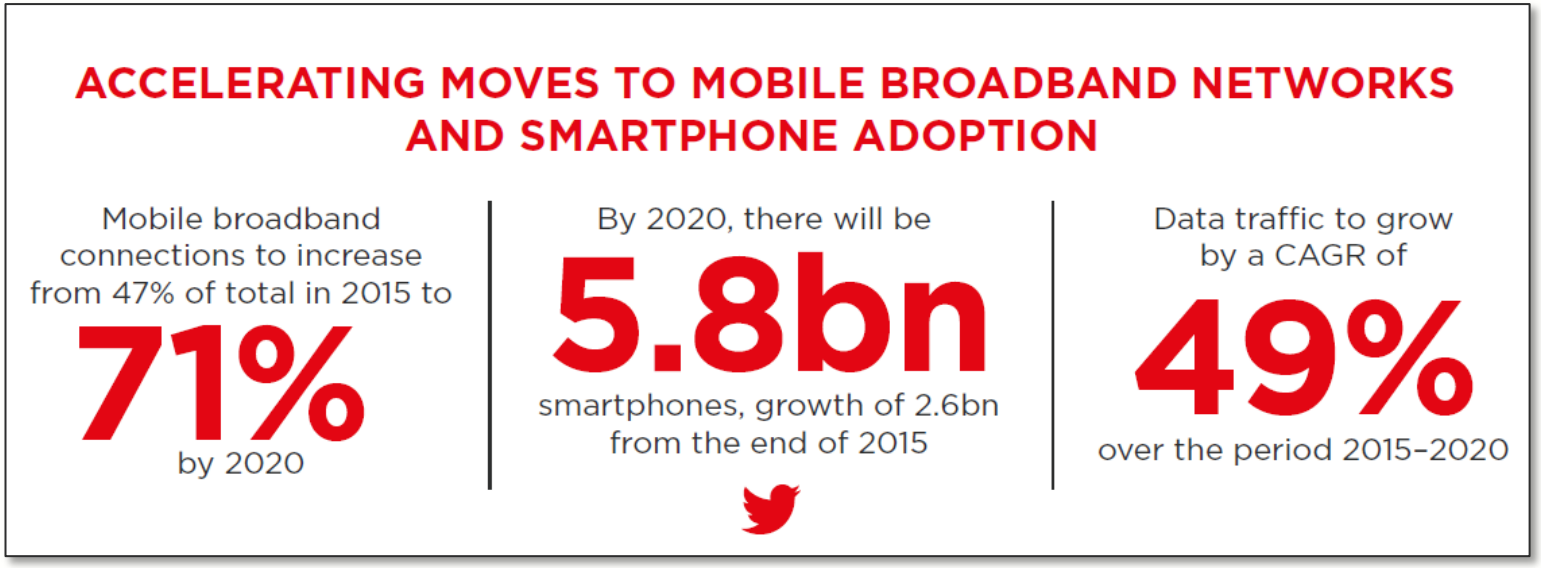
- As calls, text messages and internet traffic are all transferred as digital information, the base stations are linked together via high speed digital connections
- The traffic from multiple base stations gets combined together at an aggregation site and then transmitted back to the core, or backbone, of the network



- The connections used to transport this traffic from sites at the edges of the network to the core of the network are known as backhaul connections
- All of this happens in real time to minimise latency, jitter and lag

Mobile networks are under strain

Traffic levels on mobile networks are increasing, in part fuelled by the rise in popularity of mobile broadband.

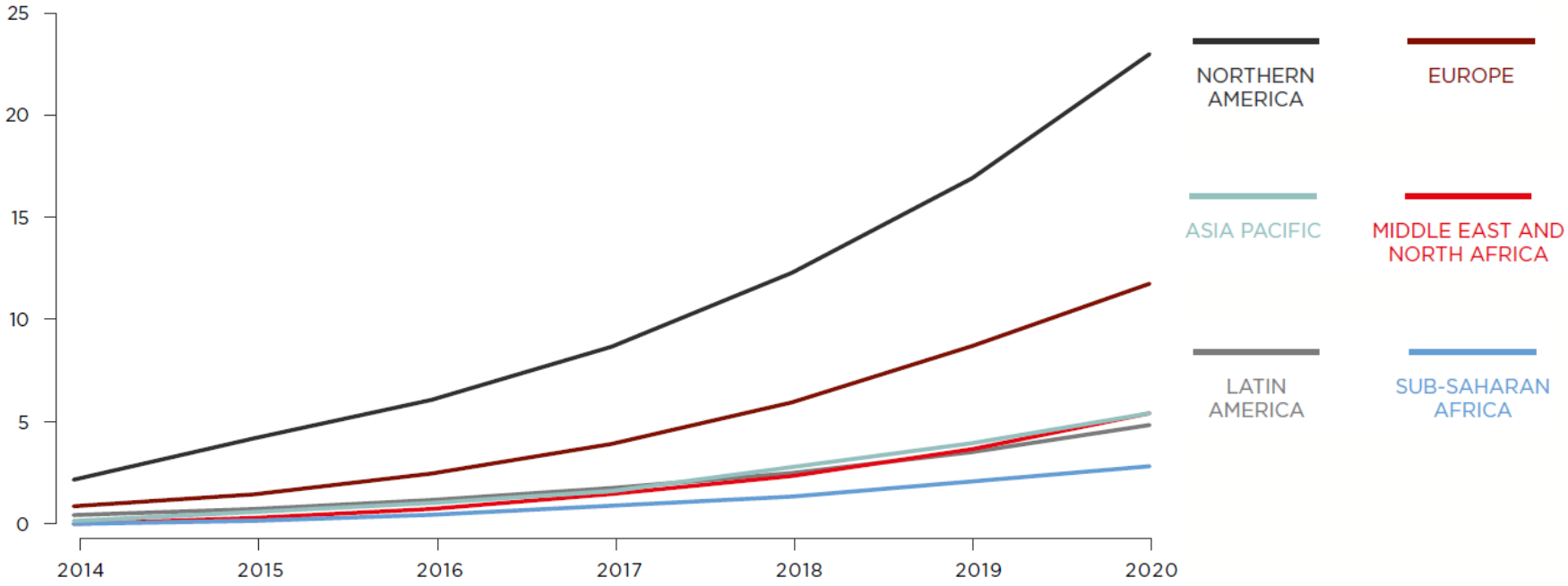


Source: GSMA, Mobile Economy (2016)

The boom in smartphones is also driving traffic volumes

As increasing numbers of people upgrade to smartphones and start using more data intensive applications, traffic levels will rise even higher.

- **Data traffic per subscriber per month (GB)**



Source: GSMA, Mobile Economy (2016)

Mobile networks have traffic limits

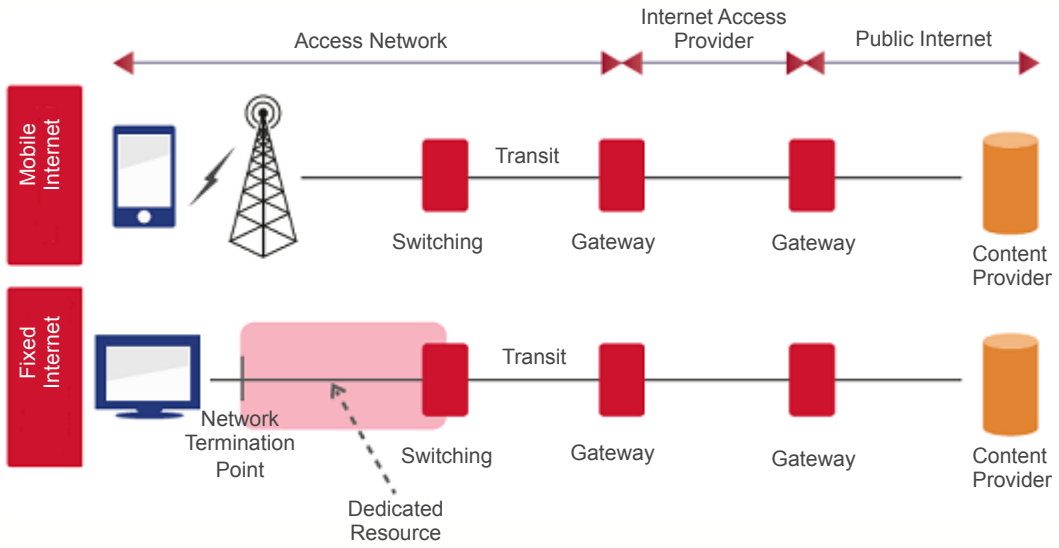
There are limits on the number of calls and the volume of data that cells can cope with at any one time. This is due to:

- Limits on the amount of data that can be transferred using the available radio spectrum between the base station and handsets
- The capacity limits of the backhaul connections from the base station to the core network

The overall mobile network is designed with these limitations in mind. For example, urban areas use smaller sized cells and faster backhaul connections to cope with higher levels of traffic. Nevertheless, there are times when network operators need to perform network management to make sure all users receive a good Quality of Service (QoS).

Mobile networks are different

Mobile networks are clearly technically different from fixed networks. They use different architectures and mobile networks are more *traffic-sensitive.* As a result, traffic management is much more important in the mobile network environment than in a fixed network environment.



- On fixed networks, the last hop on the network to the customer uses a dedicated line — a fixed resource
- On a mobile network, the last hop to the customer uses shared spectrum — a shared resource

Network management needs

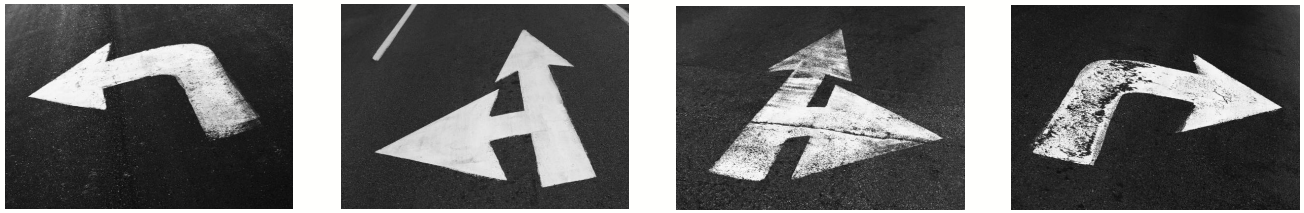
- Due to the nature of how mobile networks operate, as traffic increases there is a danger that quality of service could fall, leading to a poor user experience
- This is because different traffic types require very different treatments.
- For example, voice traffic needs to be prioritised over email delivery, as jitter and lag on a voice call is unacceptable to users, but a delay of a second in delivering an email will go unnoticed.
- As a result, operators need to manage their networks in order to provide a consistently highly quality of service to their users.
- QoS is also a priority for operators as it allows them to differentiate the internet access service they provide from that of their competitors.

QoS can be affected by a range of different factors

Changing conditions on a mobile network can be caused by a number of factors, some of which occur simultaneously putting the network under great strain.

- Congestion can arise due to seasonal factors (e.g. New Year Eve), large scale, pre-planned events (e.g. festivals and sporting fixtures) or unexpected events that cause high concentrations of people to gather in one area (e.g. traffic jams)
- Traffic management is essential to prevent the network from failing under these circumstances, particularly to ensure access to essential services

Traffic management



Examples of QoS traffic management practices used in mobile data networks today include:

Content caching

- Some popular websites appear to download very quickly because operators store their content dynamically on local servers, so they don't have to always retrieve data from the original website

Active monitoring

- To ensure they maintain a good quality of service, operators actively monitor the performance of their networks, measuring the proportion of packets lost and the speed of customers' connections

Traffic management is key to the smooth running of mobile services

From a mobile network operator's point of view, traffic management has always been essential for the efficient delivery of services

Traffic management will become even more important with the advent of all-IP mobile networks in which real-time services, such as voice and video calls, and less urgent services, such as email, will all be delivered as packets of data

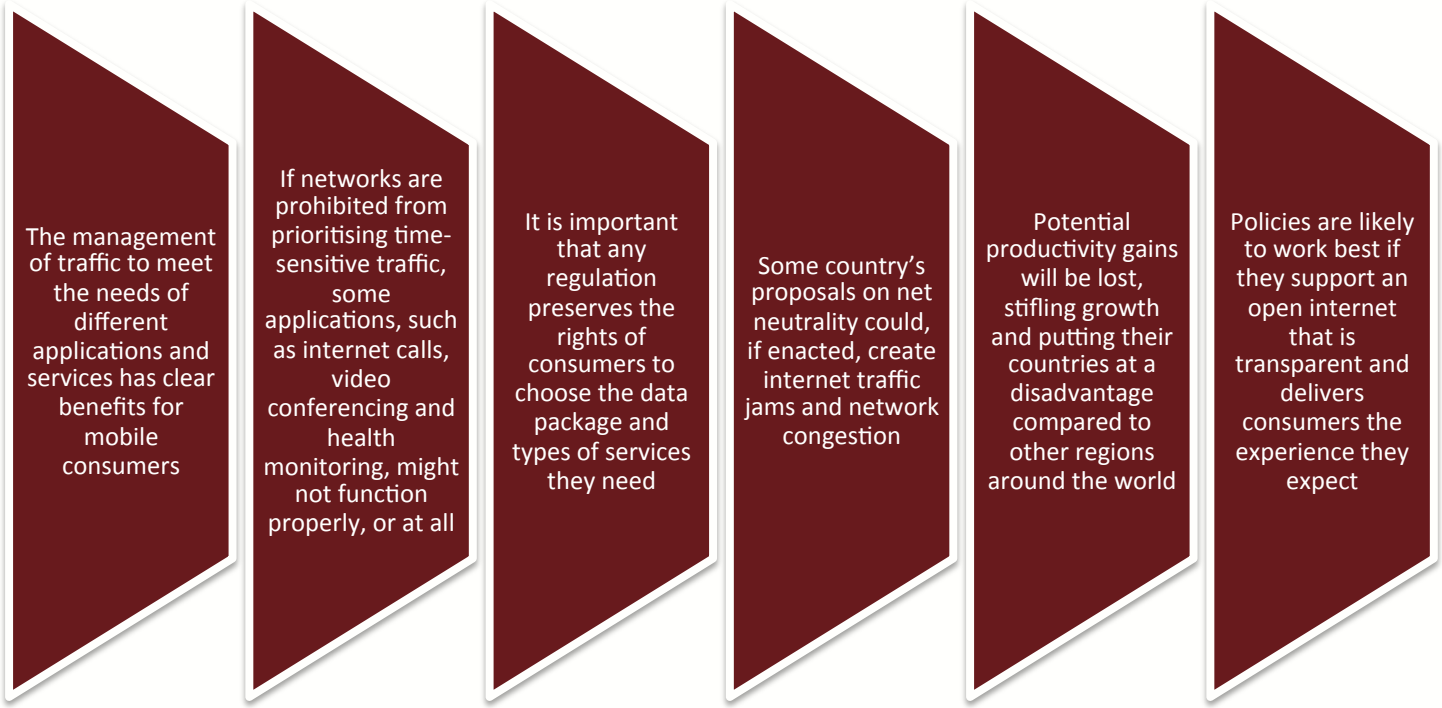
Operators also need to manage content

As well as managing congestion on their networks, operators also need to be able to manage content. Operators often prevent children from accessing adult material via software filters, which require customers to prove they are over 18. Also, many block access to websites containing illegal material. Technical methods used include:

- Restricting access to lists of URLs confirmed to contain child sexual abuse content by appropriate organisations
- Comparing content against databases containing hash summaries of known child sexual abuse content to automatically check for matches in content being hosted or uploaded so it can be blocked, removed and/or investigated, as appropriate

Net neutrality

Many countries are currently considering introducing net neutrality legislation. Net neutrality is the principle that network providers and governments should treat all data on the internet equally. However, the concept is controversial, as poor legislation has the potential to create network congestion.



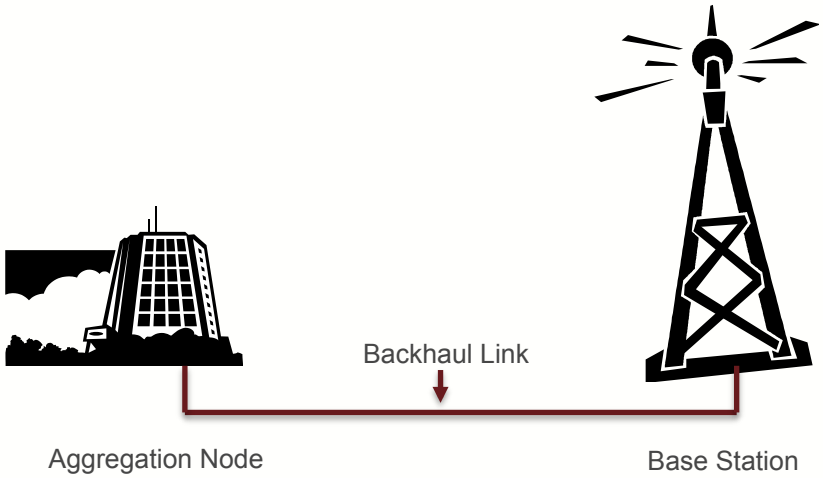
Potential problems associated with poor regulation

Traffic management is an efficient and necessary tool for operators to manage the flow of traffic over their networks. Poor regulation in this area has the potential to:

- Limit the ability of operators to manage traffic on their networks in order to deliver the best quality of service to customers
- Limit consumer choice by imposing uniform tariff structures — currently consumers can choose from a range of data packages including capped and unlimited deals, as well as tariffs governed by fair use policies
- Exclude social groups from enjoying the benefits of internet access, especially those with the least ability to pay, something which goes against the very objectives of these types of policies
- Be counterproductive to the internet's development and slow the adoption of internet services

High backhaul costs can affect consumer prices

Creating backhaul connections in rural areas can be expensive.



- Mobile networks rely on backhaul connections to move large amounts of traffic around the network and keep services running smoothly
- As data speeds for accessing internet services increase they create a need for higher speed backhaul connections
- Unfortunately, getting backhaul connections to remote areas is expensive, especially in developing nations

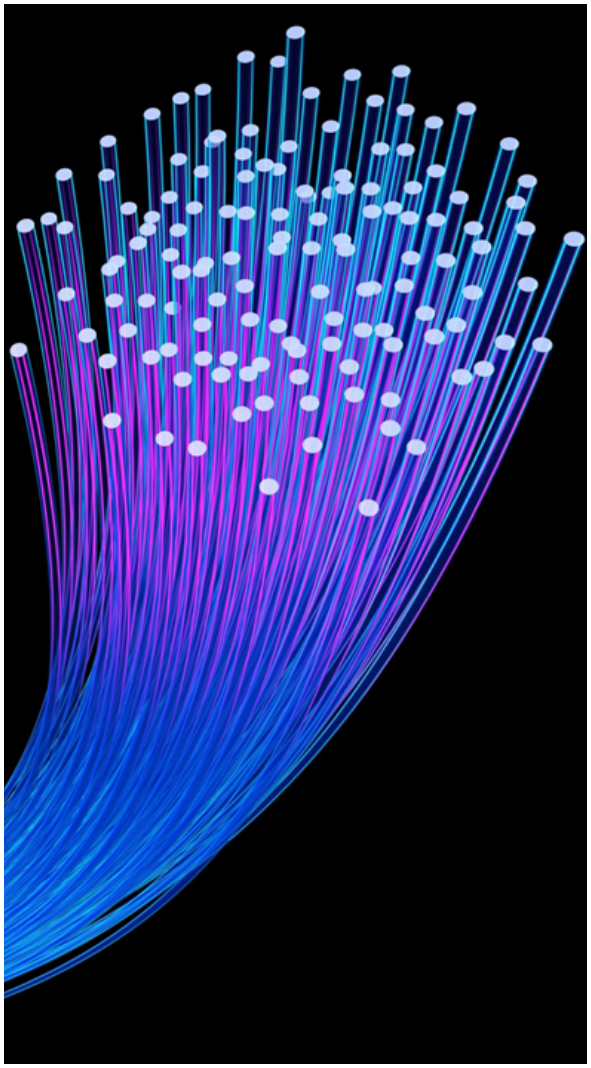
Reasons for costly backhaul links

Adding backhaul connections in rural areas can be expensive due to a lack of existing infrastructure. At other times prices are high because the fibre links close to base stations are owned by former telecoms monopolies.

These incumbent operators often charge high access prices, especially if wholesale access to backhaul fibre is not regulated to ensure reasonable pricing. A failure to act on this issue could create infrastructure bottlenecks and lead to distortion of competition.

Therefore, policymakers should:

- Consider the impact of a lack of access to regulated wholesale fibre on competition in the mobile market
- Investigate policies to encourage active infrastructure sharing of nodes and backhaul capacity, as this may be useful, especially for encouraging roll-out to rural areas



Routing internet traffic

- Internet traffic carried on backbone connections doesn't always follow what we would consider logical, geographic routes
- For example, when someone in Malaysia is accessing a website in Australia, the data may **not** be routed directly from Malaysia to Australia
- Instead it may first be sent to servers in the US and then on to Australia, before the data is routed back to the US and on to Malaysia again
- Often this type of routing is carried out because there are few direct connections between the two countries or because they don't exist at all, but sometimes it is because direct connections are expensive to use

Hidden industry costs can affect pricing of consumer services

- Problems associated with backhaul and international connectivity show it's not enough for policymakers to just focus on the access part of the network equation when considering pricing regulation
- Instead regulators need to take into account other factors that may be affecting the ability of operators to offer the most competitively priced mobile broadband services to consumers

Break: 10:30 – 10:45

Session 8: Mobile Agriculture

- Potential size of the market
- Types of mobile agricultural services currently available
- Creating an enabling environment for mobile agricultural services to flourish
- Case studies

An intro to mobile agricultural services

Mobile for Development

The current situation

Over 2.3 billion people in the world live in poverty and depend on smallholder farms for their livelihoods.

Many of the 500 million underserved, smallholder farmers worldwide lack access to relevant and timely information on planting techniques, crop management, pesticide use and weather forecasts.

This leaves them vulnerable to harsh weather conditions as well as pests and diseases that can destroy crops and harm livestock.

Harnessing the power of mobile

- 90% mobile penetration in the developing world (translating to a unique subscriber penetration rate of 45%)
- Future mobile growth will be driven by currently ‘unconnected’ populations
- GSMA estimates this to equate to 1.8 billion people over the next five years
- Mobile agriculture uses the reach of mobile to improve the lives of smallholder farmers
- The mobile channel allows for a level of scale not previously possible

Growth area for mobile operators

Many mobile operators in developing regions have adopted rural rollout strategies to take advantage of the subscriber growth opportunity in underserved areas amid declining growth in saturated urban areas.

As a significant proportion of the rural population is involved in agriculture and rely on it for their livelihood, mobile agricultural services provides an opportunity for operators to engage with their rural-based customers beyond basic services.

A need to boost agricultural production

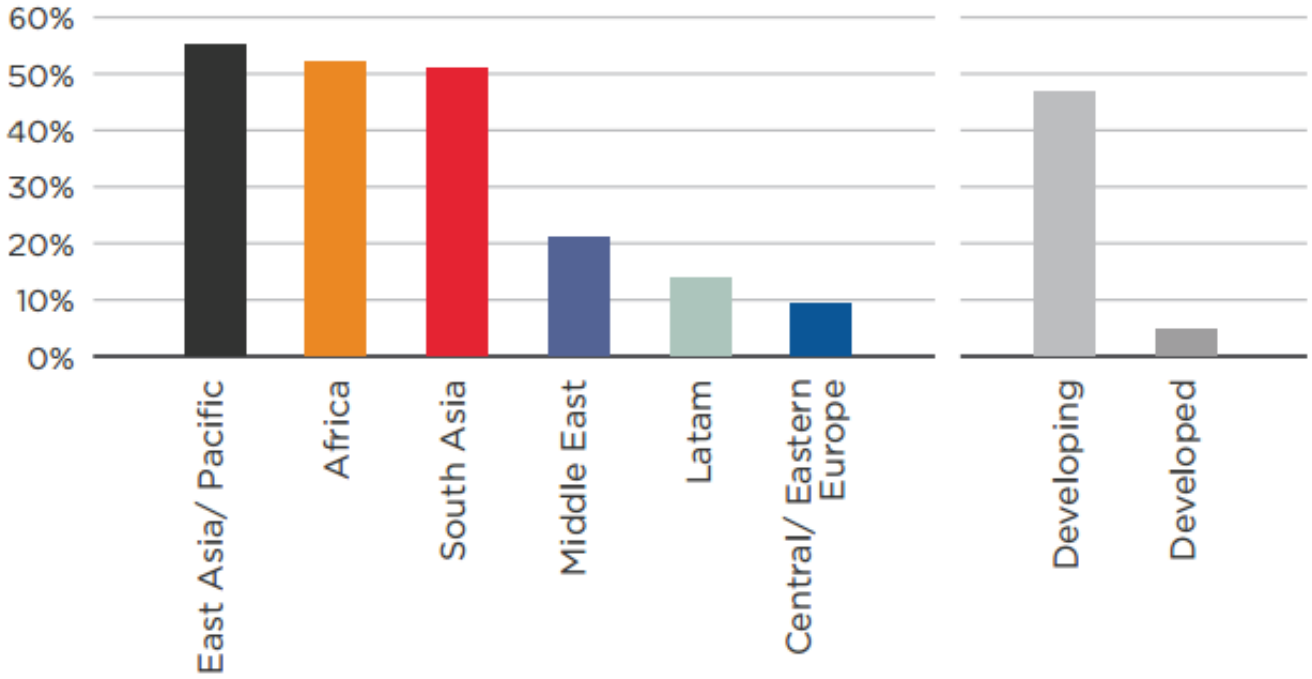
The world's population continues to grow and is expected to reach over 9 billion by 2040

In order to prevent food shortages, agricultural production will need to increase by 70per cent by 2050

Source: 2050: A third more mouths to feed, UN Food and Agriculture Organisation (FAO)

The majority of agricultural workers live in developing countries

Proportion of labour force in agriculture

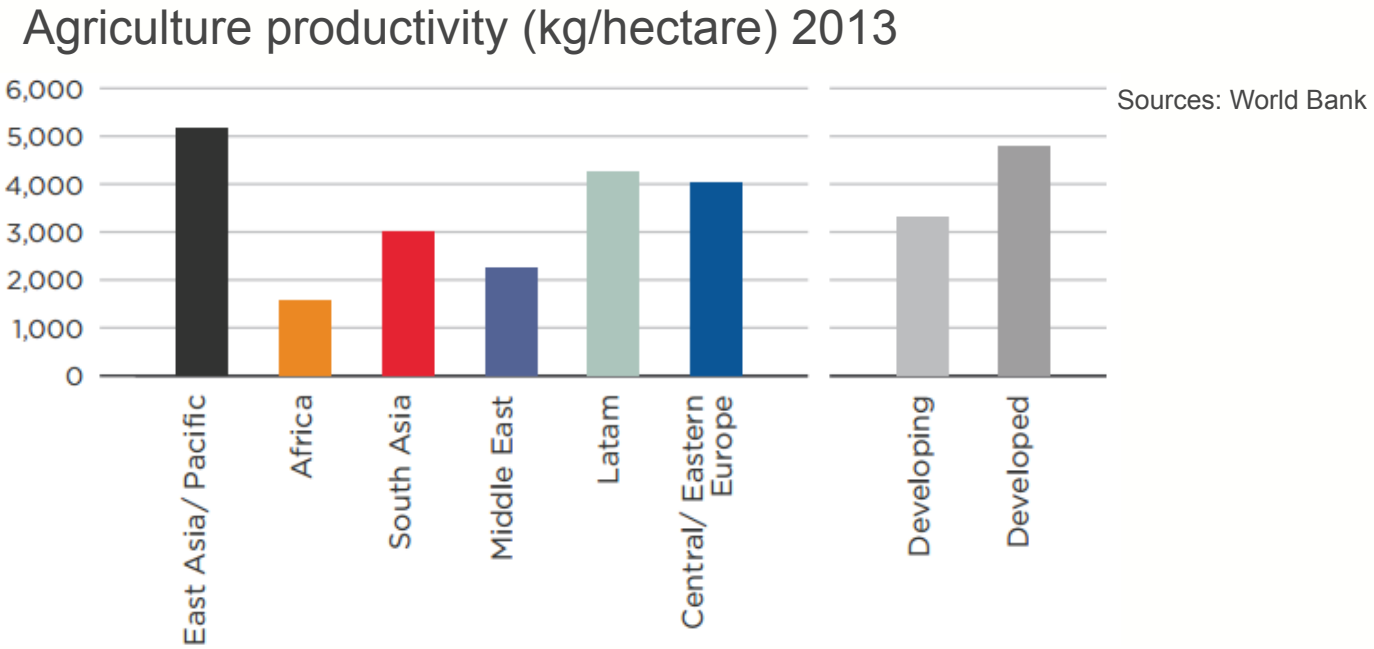


Source: FAO

More than 95% of the global agricultural labour force live in developing countries

The productivity problem

Unfortunately, the productivity level of farmers in developing countries is lower than that of their counterparts in developed countries.



Sources: World Bank

- For example, cereal yield in developing countries, at 3,300 kg/hectare, is 70% of the yield in developed countries, at 4,805 kg/hectare.
- This underscores the need for farmers in developing countries to find efficient ways to increase food production.

How can mobile agricultural services help address these issues?

Mobile phones provide a channel to deliver information, financial products and services, and supply chain services to citizens and organisations involved in agriculture

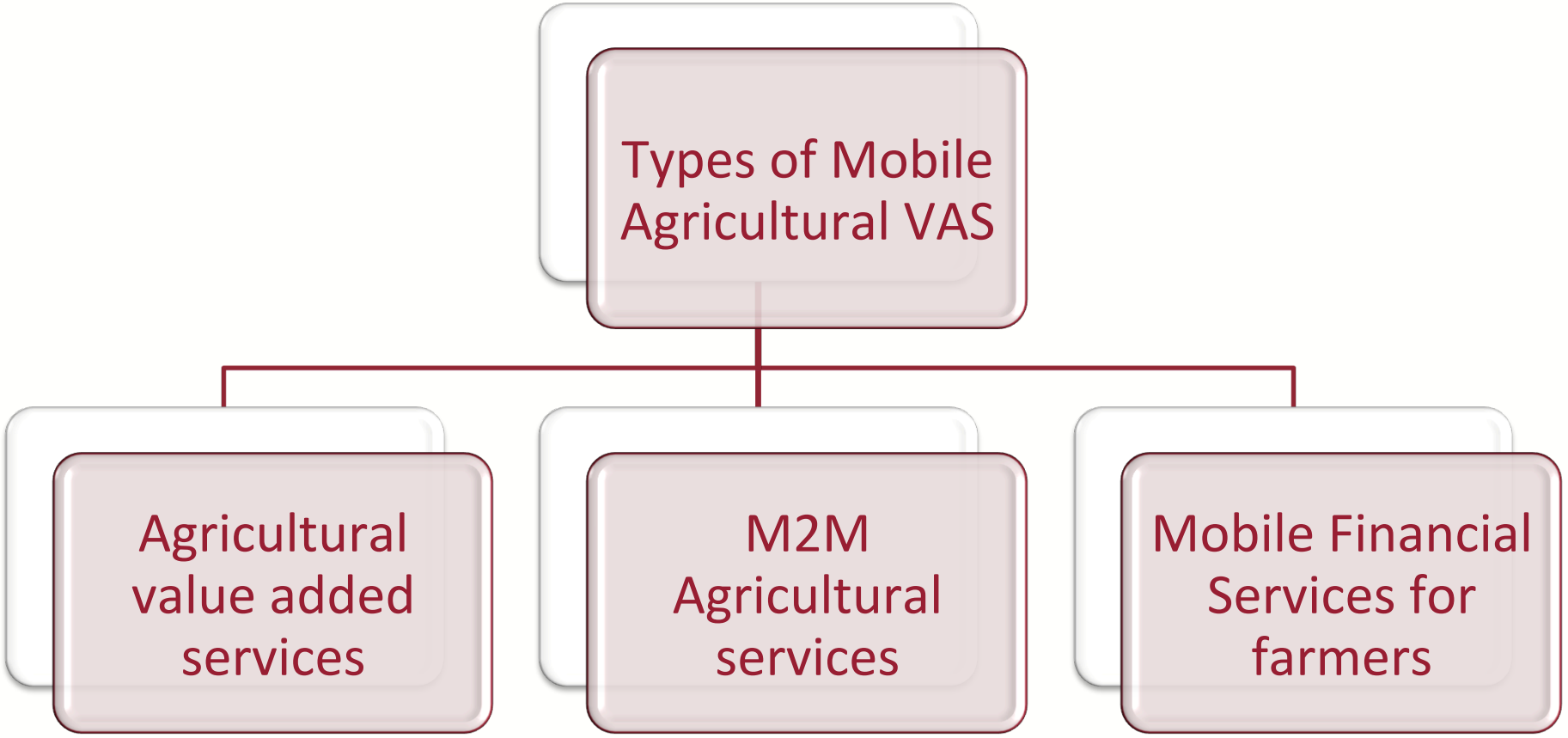
Closing the information gap

One of the key reasons for the difference in productivity between farmers in developed and developing nations is the information gap.

- Mobile technology can bridge the information gap that many farmers face
- With better access to quality and actionable information, farmers can make more informed decisions and boost their productivity and income

Types of mobile agricultural services

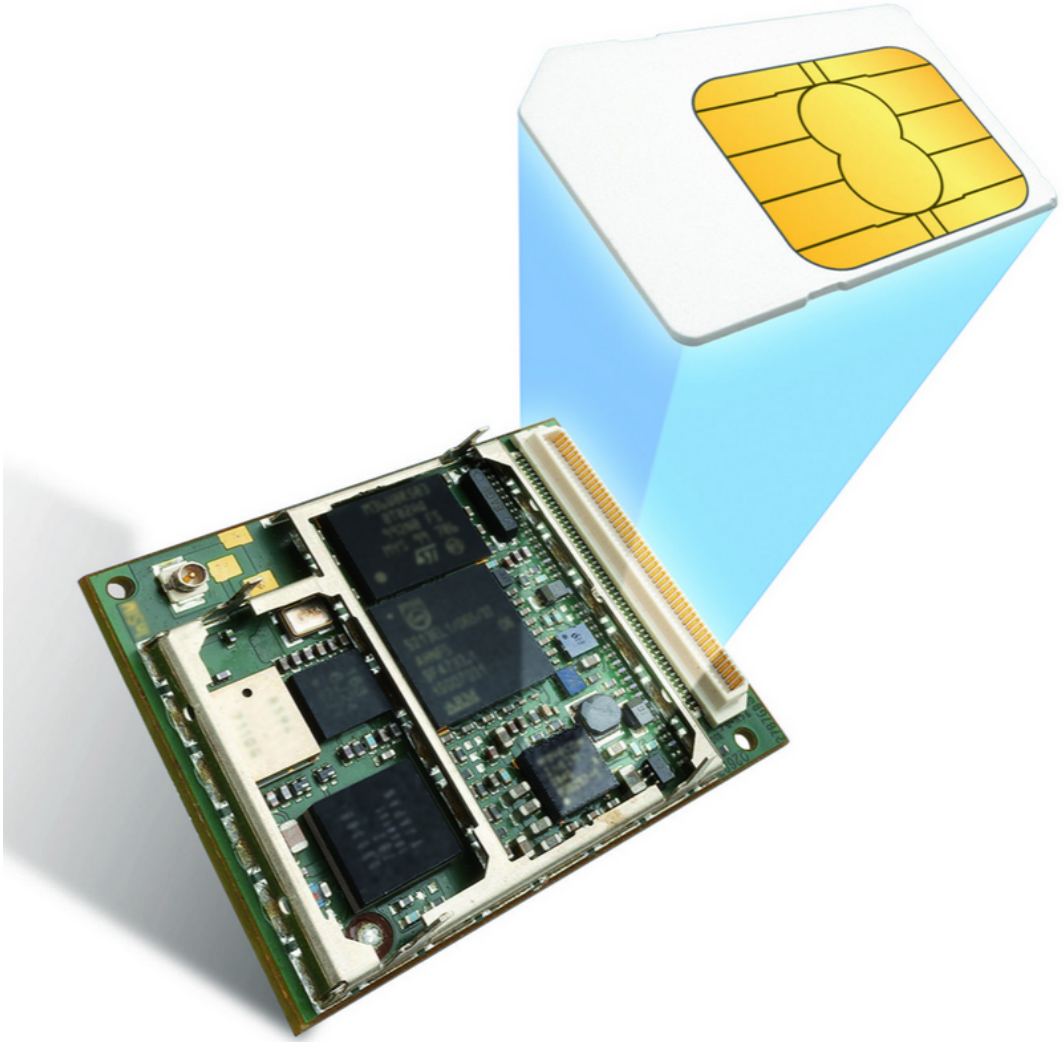
Mobile agricultural services can be segmented into three broad categories based on the delivery mechanism, technology involved and challenge addressed.



Machine-to-human agriculture services

- These services are proving effective in tackling some of the factors that limit the productivity of farmers in developing countries

Machine-to-Machine agricultural services



- These types of services connect machines, devices and appliances together wirelessly to deliver services with limited direct human intervention

Agricultural mobile financial services

- In developing countries, nearly 60% of the population is unbanked, and those that do have a bank account mostly live in urban areas
- This prevents farmers from having loans, payment facilities, savings and insurance for protection against crop failure
- Agricultural Mobile Financial Services aim to address this gap

How these models address the key challenges faced by farmers

Mobile agriculture applications and service		Key Challenges the Service Addresses
Information and Monitoring Services		
VAS Information services • Weather • Market information • Agriculture (crop, livestock) • Peer-to-peer Input authentication Data Collection	**M2M** Equipment monitoring Precision agriculture Environment monitoring Livestock and fishery management	**Productivity losses** Poor knowledge of agricultural practices, new technologies, inputs Non-availability of market information around prices of agricultural produce, buyers and markets Lack of accurate weather information
Supply Chain Services		
VAS Matching platforms Traceability and tracking systems Management of supplier/distribution network	**M2M** Smart logistics	**Supply chain inefficiencies** Gap in supply-demand match Intermediaries act in silos Poor logistics and weak infrastructure, causing wastage
Mobile Financial Services for Farmer		
Payments to farmers via mobile money Savings & credit products Micro insurance for inputs, crops, livestock E-vouchers for agri-related products (e.g. inputs)		**Farmers' financial exclusion** Non-availability of loans, payment facilities, savings Non-availability of insurance for protection against crop failure or loss of livestock

Lessons in success from the field

- Voice channels on agricultural VAS should have an emergency option on the main menu for pest and disease control
- Education on the value and functionality of the service is key to driving adoption
- The pricing model must be designed around smallholder farmers' ability to pay
- Adding content on cash crops increases the value proposition
- A subsidised trial period or a freemium model allows customers to experience the value of the information available before committing to the service
- Services must have demonstrable benefits for a variety of stakeholders
- Marketing approach must be tailored to the rural, target audience and content should be personalised to the user

What causes agricultural services to fail?

Creating an enabling environment

Case Study — Using mobile to boost cereal yields

The situation:

- This country has an increasing cereal yield, but still lags behind the top performing countries in terms of output.
- Unpredictable weather patterns are an issue for the agricultural sector.
- Farmer's income levels are relatively low, so affordability of potential services is an issue.
- A major operator in the country is looking to expand its user base and has identified local farmers as a market that largely remains untapped.
- How could the operator specifically target the needs of agricultural workers in order to attract them to its service?

Case Study — Airtel Green SIM

The key issues:

- The cereal yield per hectare in India is increasing but still runs at less than half the rate achieved by the top ten high-yielding countries.
- Furthermore, changes in India's climate have strongly affected agricultural production, and some regions experienced unprecedented droughts in the summer of 2014.
- The sum of these occurrences help demonstrate that there is still a need for a service that aims to empower farmers and increase food security in India.

Case Study — Airtel Green SIM

The approach:

- Launched in 2007, the Green SIM card provides subscribers with regular network services, just like any other Airtel SIM card, but in addition provides free voice and SMS messages with agricultural content.
- Customers also have access to a helpline (for which they pay regular network rates) where they can speak directly with agricultural experts to ask questions.
- Agricultural content is a mix of state-level, district-level and more localised information.
- Airtel Green SIM users receive four voice SMS and one text SMS daily on topics covering agriculture, education, health and employment.
- Green SIM cards cost the same as a regular SIM card, approximately $1.

Case Study — Airtel Green SIM

The outcomes:

- Key to the success of the Green SIM service is the partnership between Airtel and the Indian Farmers' Fertiliser Cooperative (IFFCO) to leverage its extensive marketing, sales, promotion and distribution network.
- 5% of all of Airtel's rural acquisitions come through the Green Sim programme.
- New user acquisitions for Green SIM are running at an average of 150,000 per month.
- The content provided by the service has been well received by the user base, with 98% of farmers saying they trusted the information they received.

Session 9: ACTIVITY

Lunch: 12:30 – 13:30

Session 10: Connecting the Unconnected

- The global picture
- Barriers to internet access
- Infrastructure issues
- Digital skills gap
- Local content
- Taxation and affordability of mobile services

Many remain unconnected

By the end of 2015, the number of Internet users globally reached 3.2 billion. However, 4 billion people from developing countries remain offline, representing 2/3 of the population residing in developing countries.

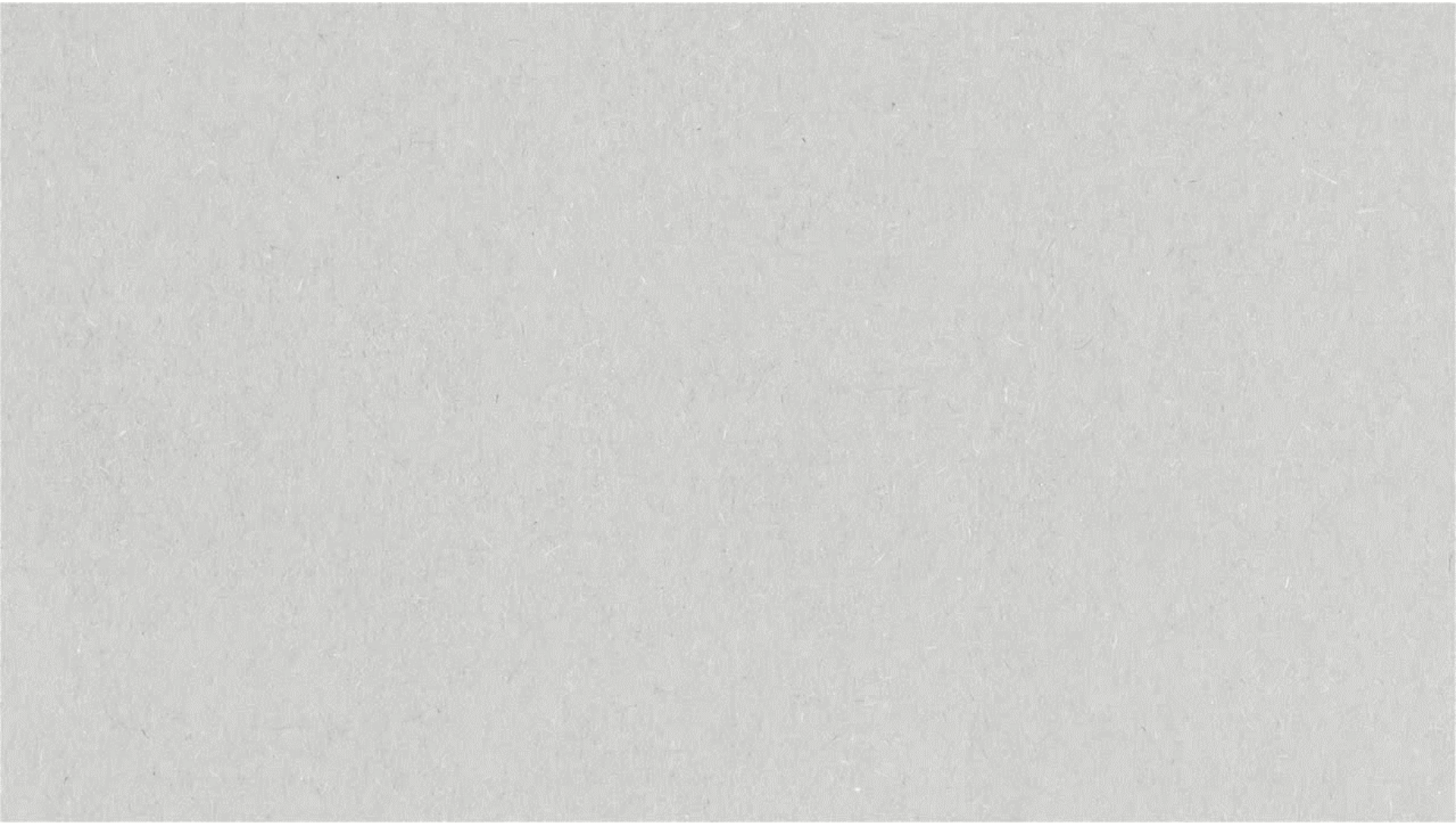
As a result, the gap between internet usage in the developed world and emerging markets is huge:

80% of households are online in the developed world

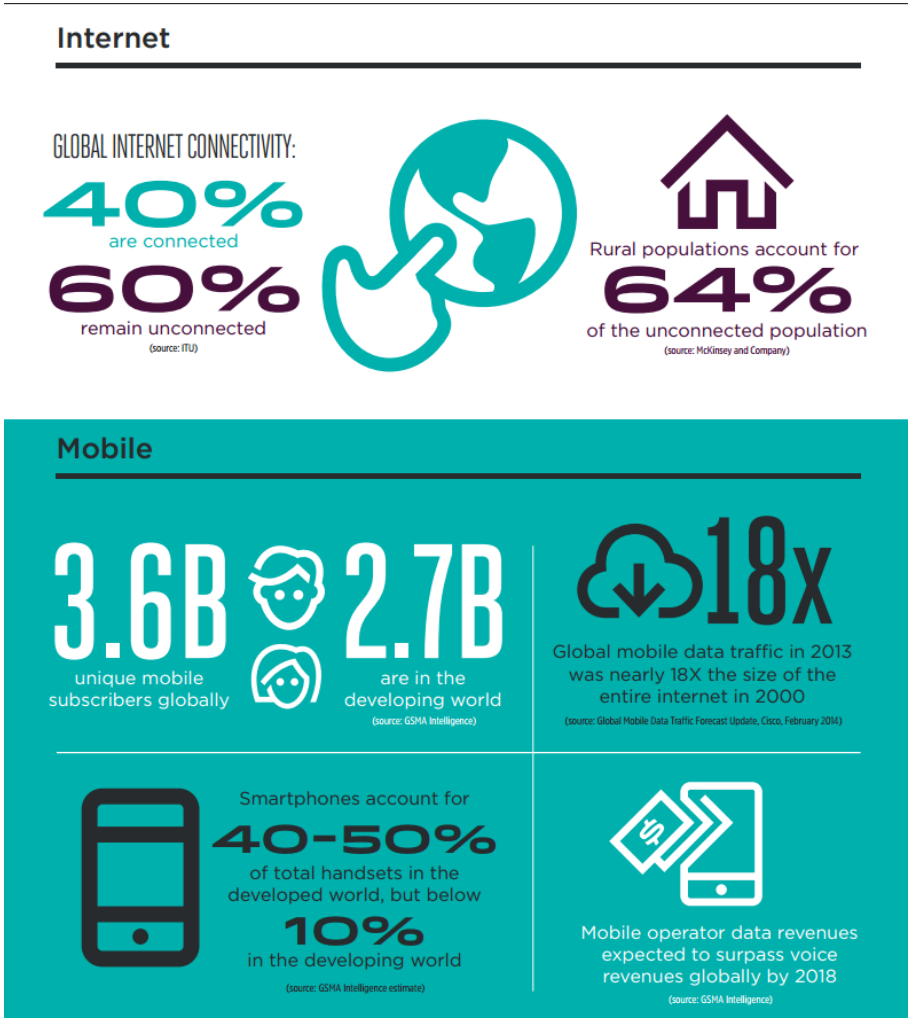
34% of households are online in developing countries

This prevents the majority of the world's population from benefiting from the profound social and economic benefits provided by access to online digital services and content.

ITU, ICT facts and figures (2015)

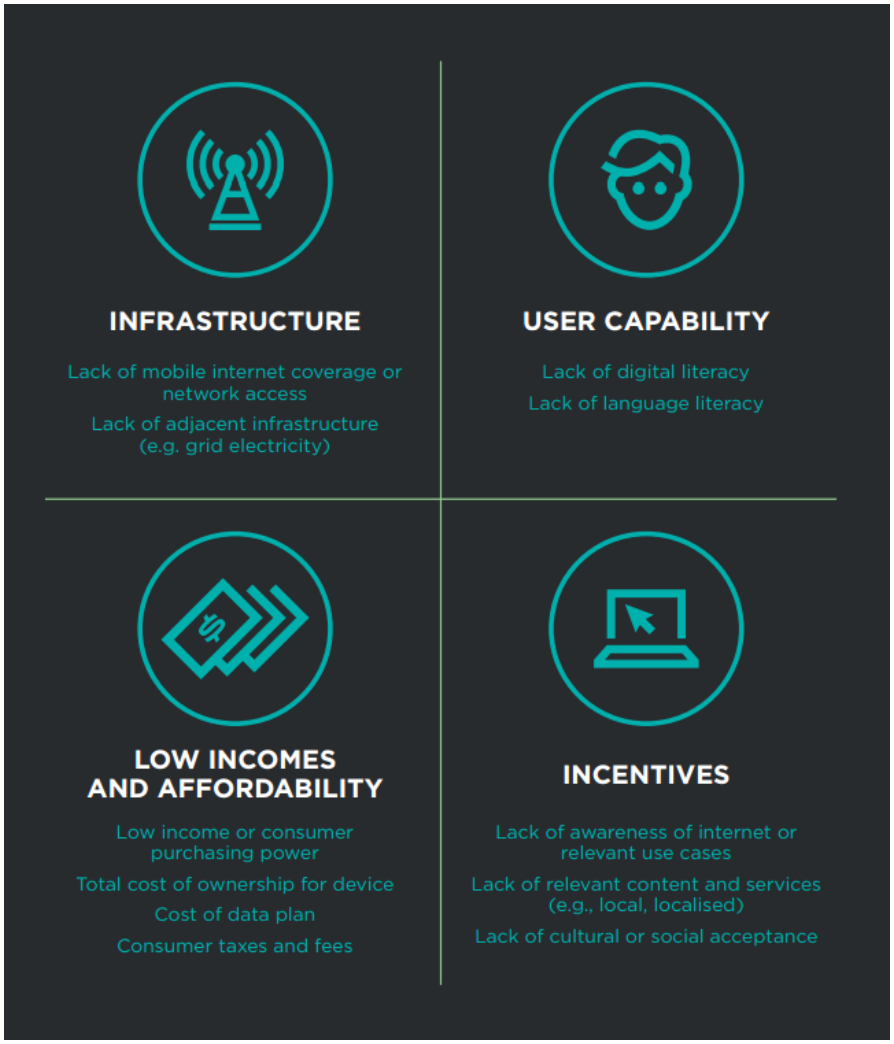


The global picture



- 40 per cent of the world's population is connected, but 60 per cent remain unconnected
- Most people who remain unconnected live in rural areas

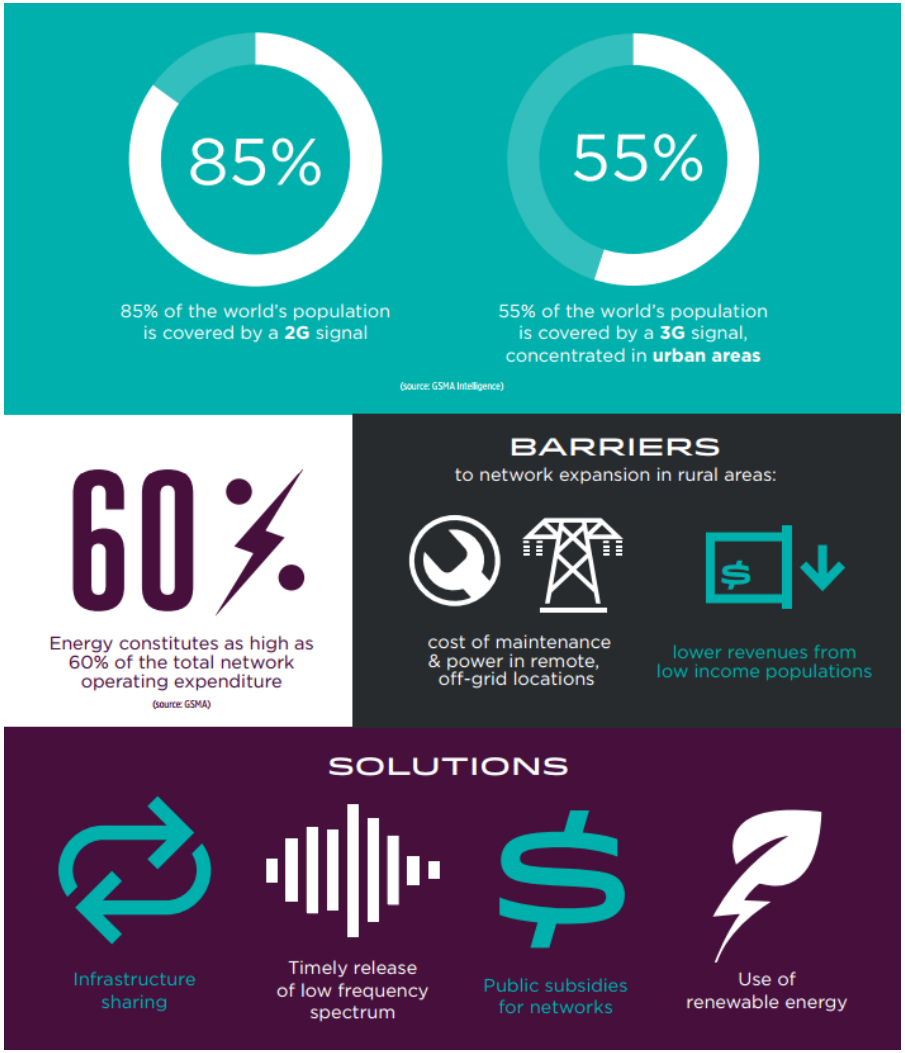
Barriers to internet access



The key barriers relate to issues of:

- Infrastructure
- User capability
- Affordability
- Incentives to get online

Infrastructure issues



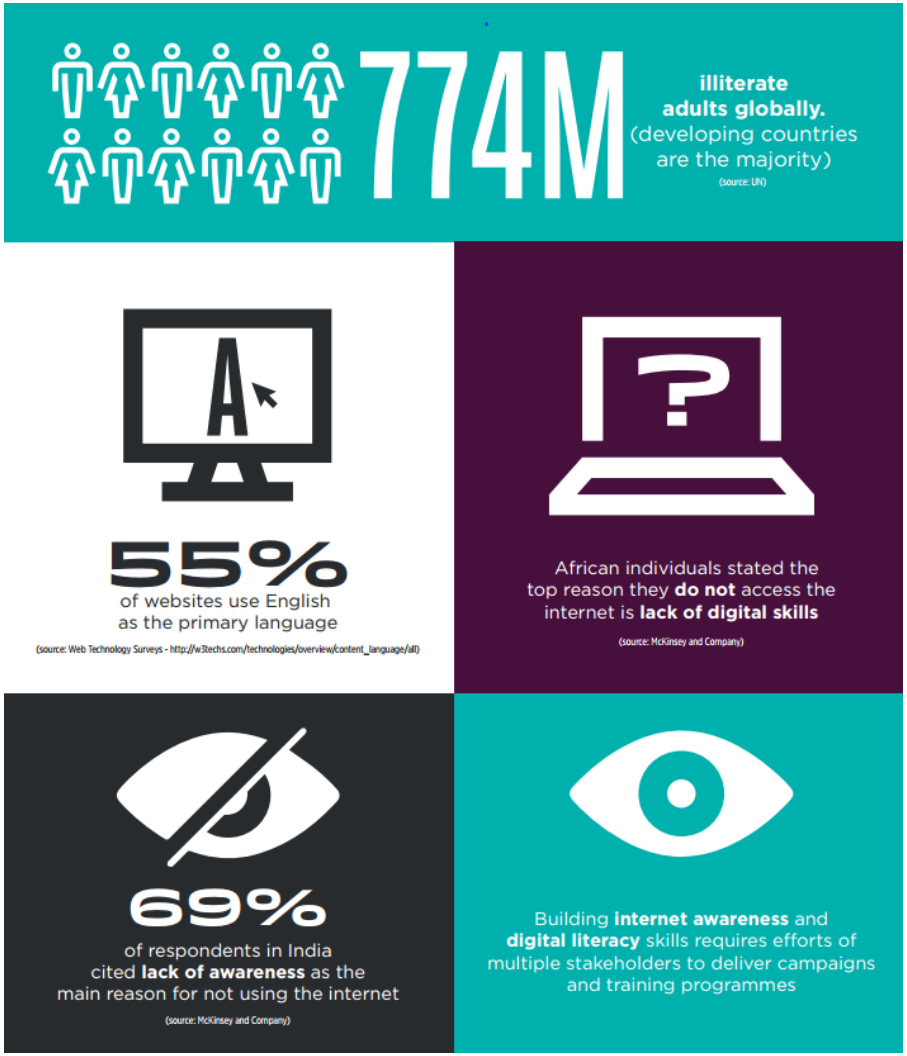
- Mobile covers 85 per cent of world's population
- However, network maintenance and power costs are high in remote locations
- Low revenues from low income, rural populations are also a barrier to network expansion

Consumer barriers

The future growth in mobile internet adoption will come from infrequent or new internet users.

However, encouraging these people to make more use of the mobile internet faces a number of barriers.

Addressing user capability

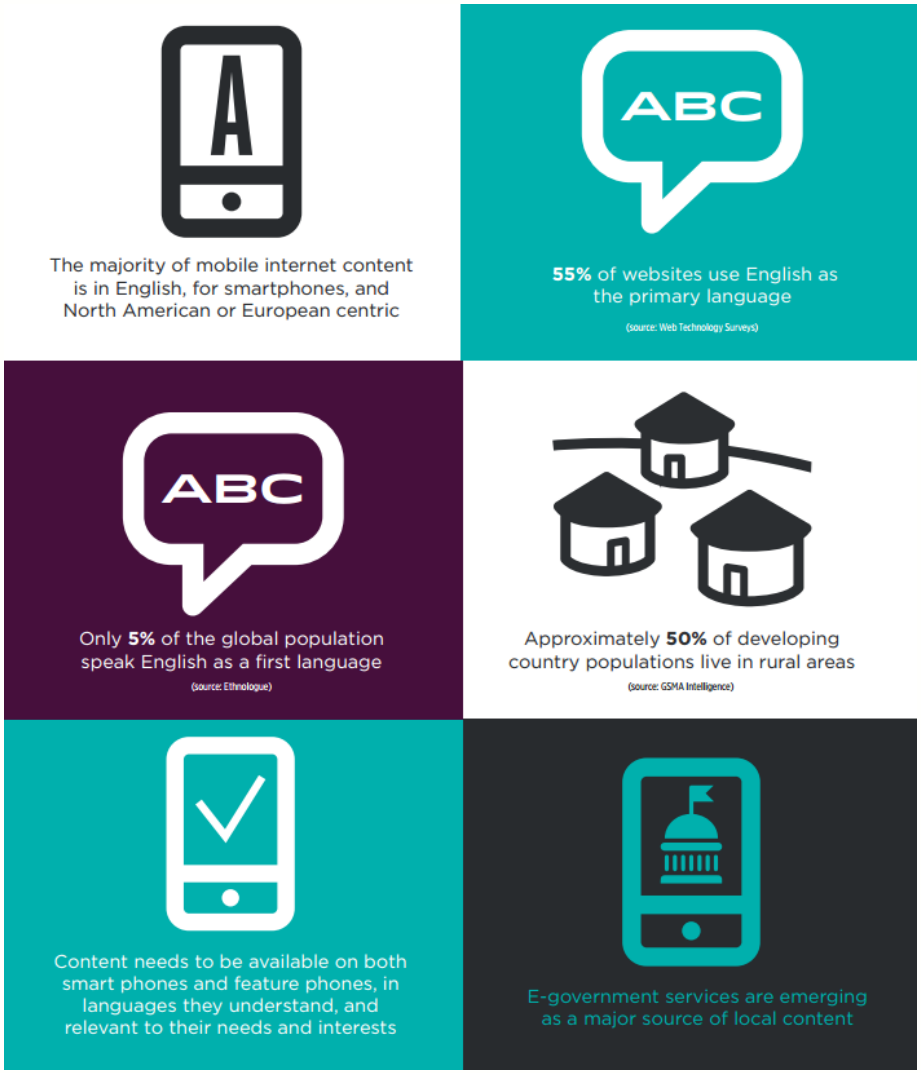


- Many new internet users are illiterate and cannot read text content
- Many new internet users have limited digital skills preventing them from using the mobile internet

Fear is a factor

Sources: McKinsey, Offline and falling behind: Barriers to Expanding Internet Usage (2014), McKinsey, iConsumers: Life online (2013)

Incentives for people to get online



- There is a lack of locally relevant content to attract people to regularly use the mobile internet

Measures to address barriers

Lack of internet awareness and interest

- Possible measures:
  - Use of below the line (niche) marketing
  - Leveraging the mobile industry's distribution network
  - Educational efforts by official stakeholders (operators, NGOs, Governments etc.)

Low literacy and poor digital literacy rate

- Possible measures:
  - Use of music, voice, animation and video, rather than text, in local content
  - ICT in education initiatives
  - Targeted efforts by all key stakeholders (operators, NGOs, Governments etc.)

Sources: McKinsey, Offline and falling behind: Barriers to Expanding Internet Usage (2014), McKinsey, iConsumers: Life online (2013)

Local content

There is currently a lack of locally relevant content available to rural communities. This is an issue because local content can be crucial in attracting people to regularly use mobile internet services.

Ways to boost availability of local content	
	Operators, governments, NGOs, development organisations and donors could work together to break down barriers to the creation of locally relevant material by equipping local people with the skills need to produce content
	Existing information producers – such as weather, agricultural and health agencies – could be encouraged to publish information targeted at rural communities and local users, including weather reports, seasonal planting guides and disease prevention information
	Governments could promote locally relevant mGovernment services, such as birth registration programmes
	All stakeholders could investigate ways to make content development initiatives sustainable
	Content generated for a local audience should be produced in the local language, rather than in an 'official' or 'national' language

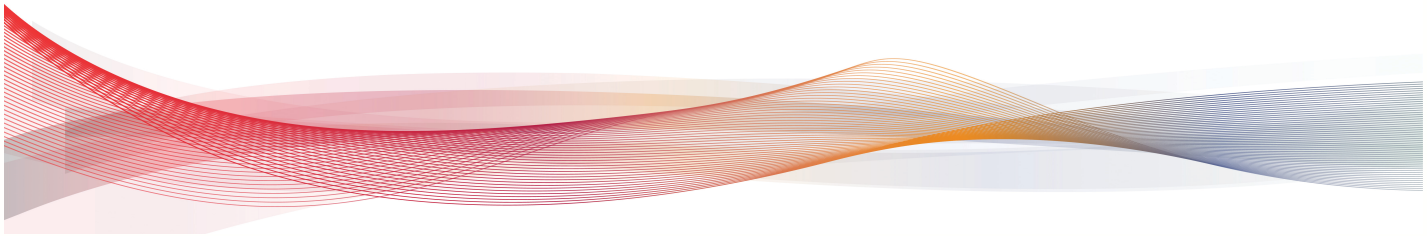
Affordability of internet services

- Mobile services must be affordable to have most impact
- Despite the widespread growth of mobile, the cost of mobile devices and services remains a significant barrier to further adoption of mobile technology
- Government policy has a significant influence on the 'cost of ownership' for consumers and businesses

Policy and affordability

- Policy decisions taken across a range of areas flow through to costs to the consumer
- Operational costs determine the economic viability of base station sites, directly impacting coverage
- To bridge the digital divide the overall regulatory environment must encourage investment in and use of mobile services

Spectrum costs are also key



To expand connectivity regulators need to reduce the barriers to mobile internet adoption.

One of the biggest barriers is the availability of affordable spectrum.

The spectrum that is optimal for rural coverage is in the UHF band.

Delivering Rural Connectivity

Policymakers can encourage operators to extend coverage to these rural areas by:

- Ensuring the taxation policy **reflects the benefits** mobile brings to society and to rural communities
- Being **supportive of commercial infrastructure sharing**, and potentially national roaming, so covering rural communities becomes economically viable
- **Not charging exorbitant licence fees** – these just take away investment capital and increase the required return on investment from rural infrastructure
- Supporting the **deployment of green energy** and robust power infrastructures
- **Helping with the delivery of affordable back-haul**
- **Encouraging the development** of local content and services

Regulation can drive adoption

Government and regulators play an important role in the promotion of green initiatives.

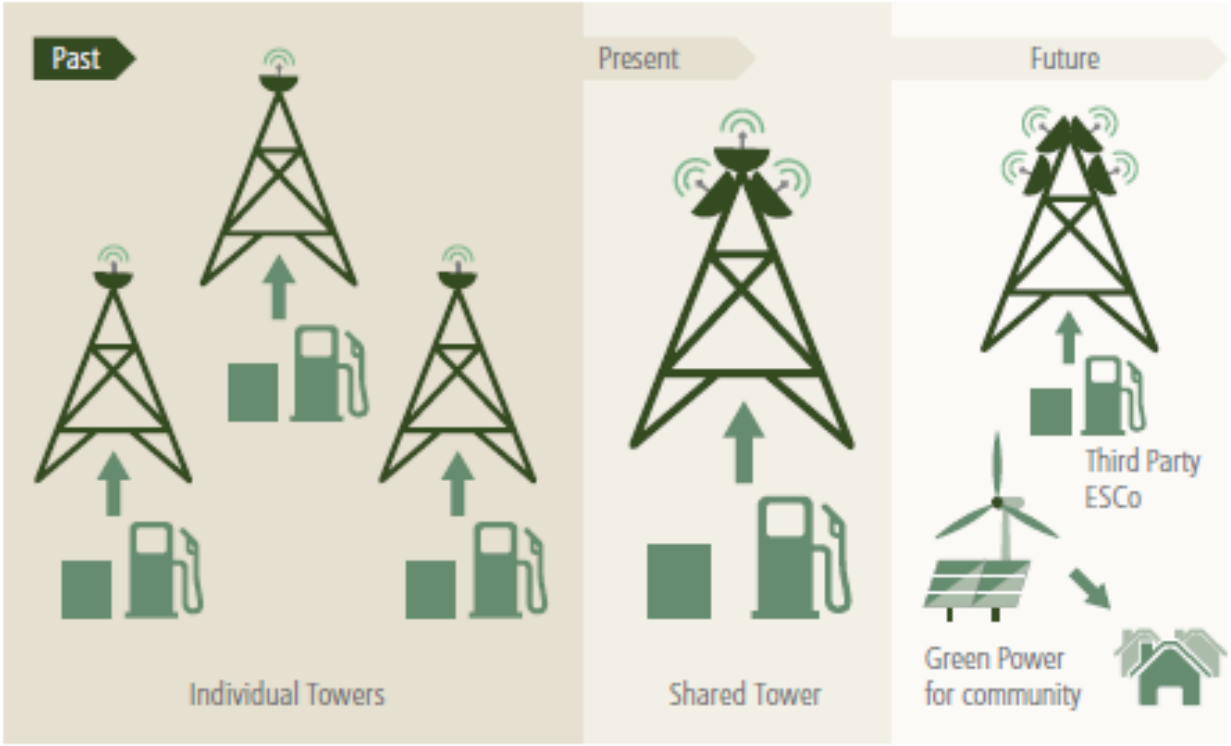
- The regulation of green telecom is an essential consideration for investors and industry stakeholders looking to implement such technology in a country
- By putting in place an incentive system to encourage the industry to implement green technology solutions regulators can help drive the adoption of renewables
- In several countries, incentivised regulations have already been put into place to encourage operators to achieve greater market penetration and coverage

Green power incentives

Several countries are already encouraging industry to adopt green solutions via target setting and supportive regulation.

Indonesia	The government, through the Ministry of Finance, has introduced new regulations and linked them to a tax holiday and import duty tax exemption for renewable industry players
Bangladesh	To promote the use of renewable energy, the government gives a 15% tax exemption from Value Added Tax (VAT) for all renewable equipment and related raw material
	Tax incentive for batteries as part of a green telecom solution – fiscal incentives for MNOs to implement green sites on their network
Pakistan	Green telecom regulation to encourage the industry – tax and fiscal incentives for green telecom players

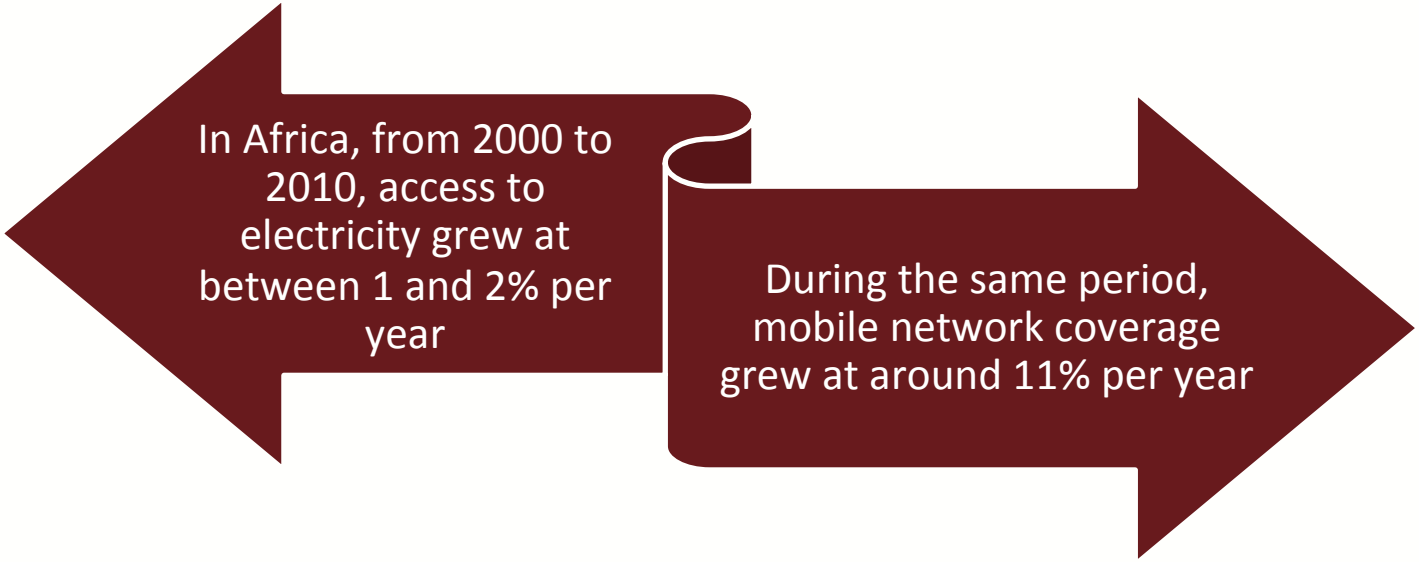
A new approach to infrastructure



The move towards shared telecoms infrastructure, and the creation of Energy Service Companies (ESCos) to provide power to these sites, opens up the possibility of the mobile industry supporting electricity beyond the base station into local communities.

Huge potential

By leveraging its capabilities and assets the mobile sector can potentially improve access to energy and water in remote areas.

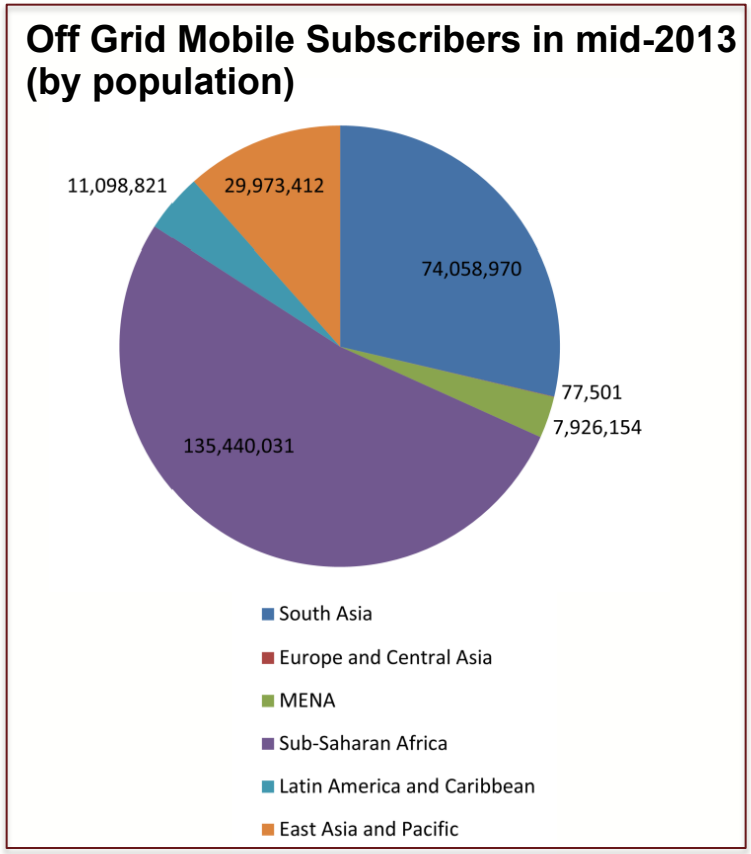


- The size and the reach of the industry's infrastructure, distribution channels, mobile payments and other technologies, opens up new pathways for providing access to water and reliable energy for rural communities

Source: GSM, Sizing the opportunity of mobile to support energy and water access (2013)

Reaching off-grid users

More than 400 million mobile subscribers are estimated to be living off-grid and could benefit from access to affordable energy.

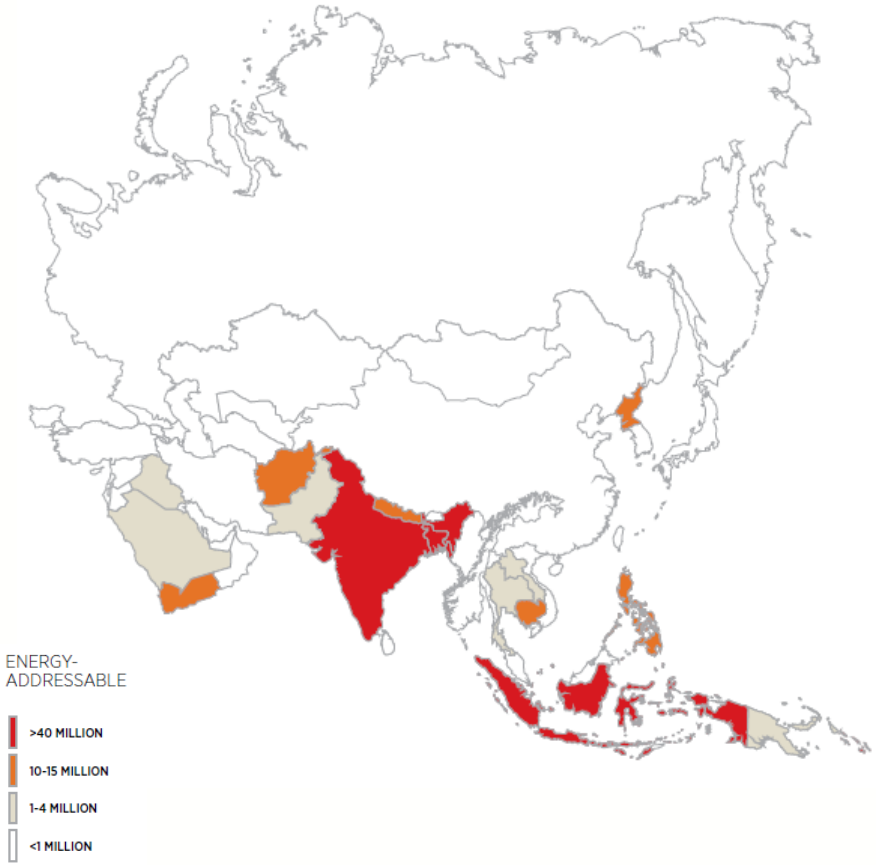


- Providing access to a local, affordable energy solutions for these off-grid subscribers would improve mobile uptake – previous studies show there is a 15% ARPU increase when off-grid mobile subscribers have access to local energy solutions
- Currently, the lack of local phone charging solutions prevents extensive usage of mobiles
- Phone charging expenditure can represent up to 50% of a user's mobile expenditure – on average people can spend up to $3 per month charging their phone (airtime + phone charging costs – Source GSMA)

Source: GSMA, Sizing the opportunity of mobile to support energy and water access (2013)

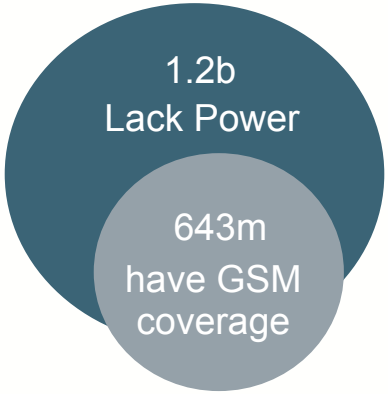
Energy opportunity by geography

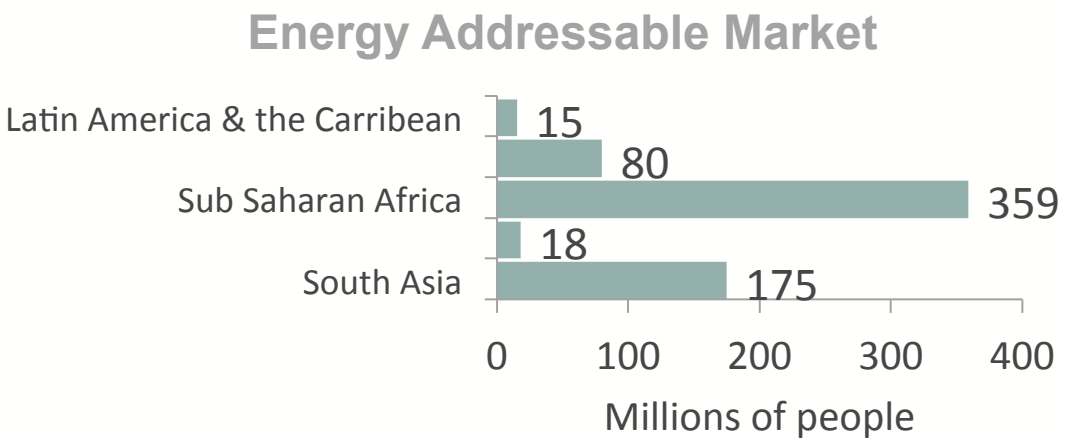
The energy-addressable market is an estimate of the number of people covered by mobile networks without access to electricity.



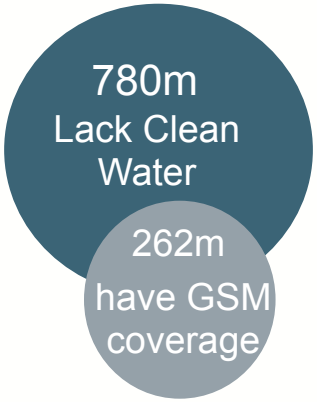
Size of the opportunity

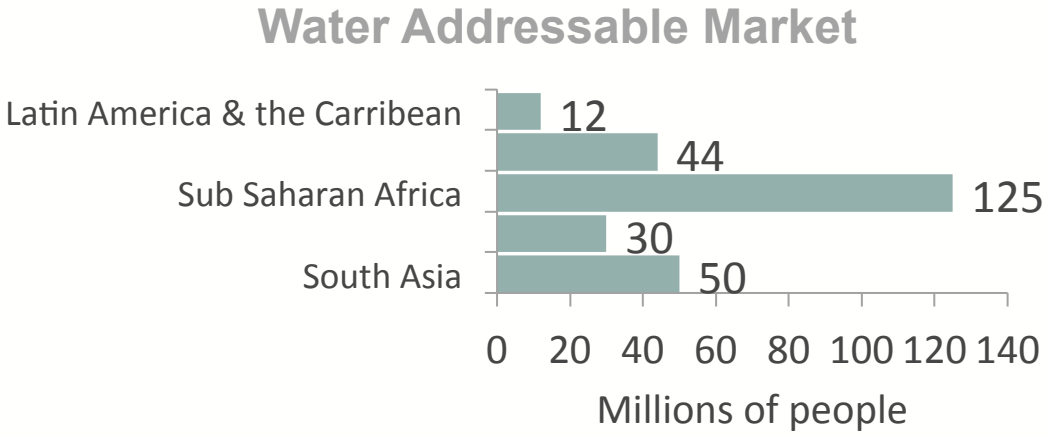
Energy





Water





The industry's role in improving access to energy and water

Based on the current footprint and maturity of the mobile sector, there are five industry channels that can be used to support better access to energy and water:

Mobile infrastructure	• Leveraging the presence of telecom towers in off-grid areas to support rural electrification efforts
Mobile operator distribution and mobile money agent networks	• Leveraging the footprint and brand of mobile operators to reach underserved customers
Machine to machine connectivity	• Enabling the remote monitoring and Pay As You Go capacity of decentralised utility systems
Mobile payments	• Providing financing and affordable solutions to low income populations
Mobile services (Voice, SMS, USSD, Applications)	• Leveraging increased mobile phone ownership to collect/disseminate critical information on utility services and/or supply chain management

Mobile infrastructure

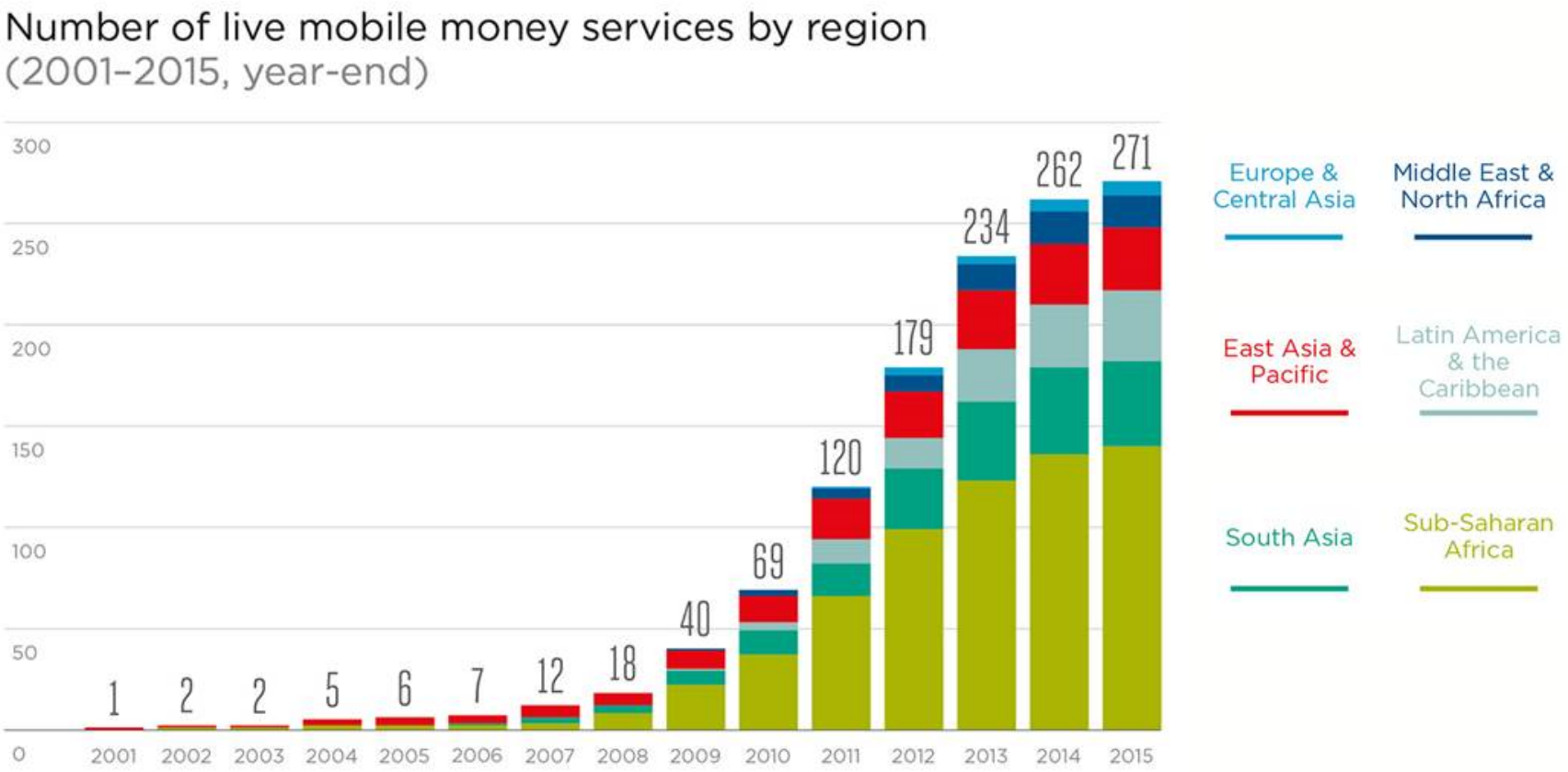
The presence of telecom towers in off-grid areas can be leveraged to support rural electrification.

- There are more than 100,000 off-grid towers in Asia and around 45,000 in Africa
- There are already more than 20 sites in South Asia where this model is being used commercially

Case study: OMC Power in India

- Provides power to telecom towers and energy hubs at 11 sites in India
- Has signed 5 year power agreements with tower operators
- Offers last mile energy distribution to consumers via OMC agents
- Charged lanterns and batteries are delivered to the surrounding community of 3,000 homes with the service priced at $0.10 per day

Using mobile money for payments



- There are 271 live mobile money services in 93 countries worldwide
- Currently, there are more than 411 million registered accounts
- In 19 countries there are more mobile money accounts than bank accounts

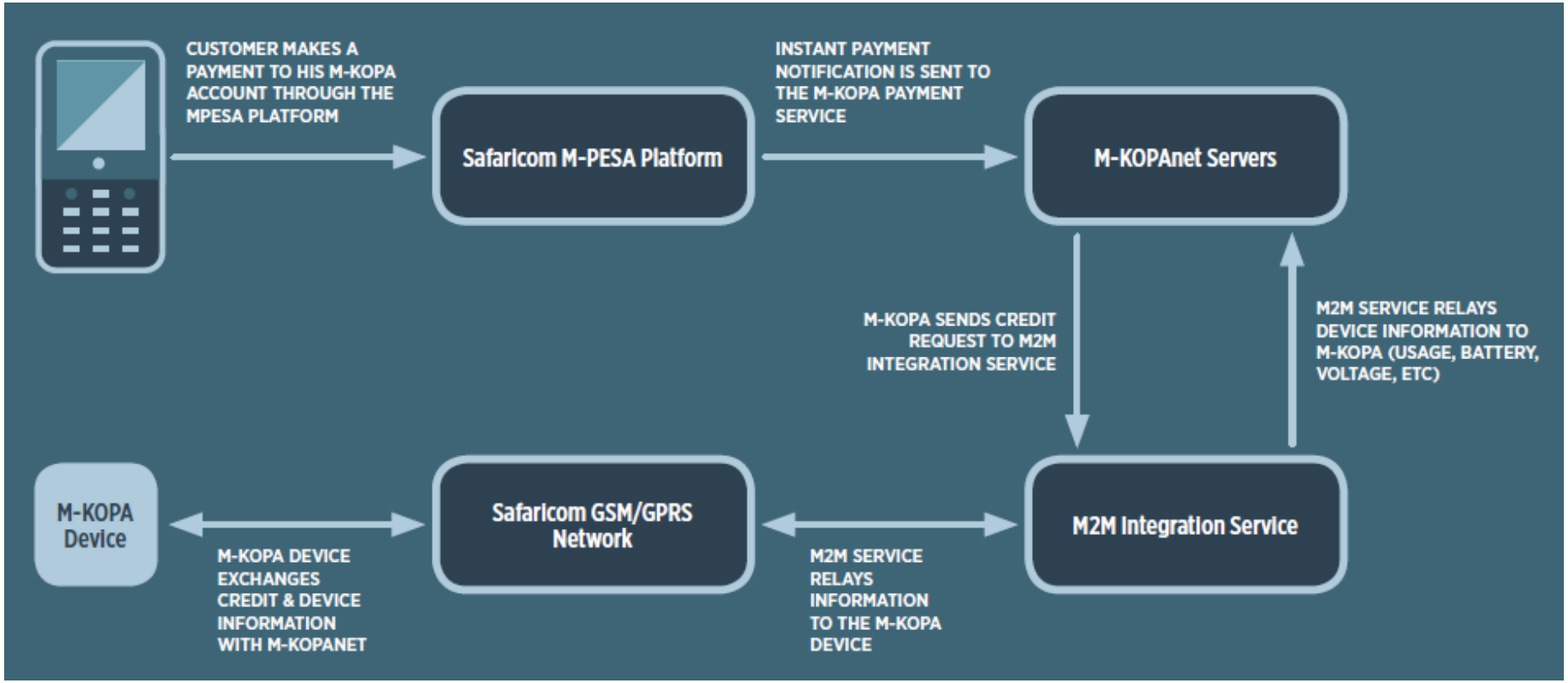
M-Kopa – An example of a ‘pay-as-you-go’ model

M-Kopa provides micro-financed energy products in Kenya, Uganda and Tanzania. The company’s primary product is the M-Kopa III Solar Home System, an 8W system that includes two lights, a phone charger, portable lamp and radio.

- M-Kopa provides over 150,000 homes with solar power in Kenya alone, while in Uganda the figure has already reached over 20,000 homes, with the company targeting 50,000 homes by the end of 2015
- In Kenya, it has a distribution and revenue-sharing agreement in place with Safaricom
- Each unit is GSM-enabled, and customers make daily payments via the M-Pesa mobile money system

How M-Kopa's M2M system works

Each M-KOPA unit has an embedded GSM module allowing for real-time monitoring and connection/disconnection of the unit according to customer credit. M-KOPA has partnered with M2M specialist Eseye to manage the M2M communication system.



Source: M-Kopa

Regulatory support strategies

Setting targets and offering tax incentives for the industry to invest in renewables (e.g. Indonesia, Bangladesh, Pakistan and Uganda)

Putting in place supportive legislation for commercial network sharing agreements to encourage the creation of infrastructure in rural areas (e.g. Indonesia, Bangladesh, Nigeria, Ghana and Kenya)

Encouraging operators to offer dedicated and competitive M2M tariffs, and offering tax breaks on M2M tariffs to help drive adoption of the technology (e.g. Brazil)

Setting ambitious targets for off-grid electrification and seeking out public private partnerships to support this (e.g. partnership between Government of Rwandan and Mobisol)

Reducing subsidies on cheap non-renewables to allow renewables to better compete in the market

Break: 14:30 – 14:45

Session 11: Strategic Service Provision for Citizens

Gender Inclusion

Disaster Recovery

mGovernment

Guest Speaker: Htaike Htaike Aung

Gender Inclusion

Gender equality is critical – and mobile can be an enabler for this

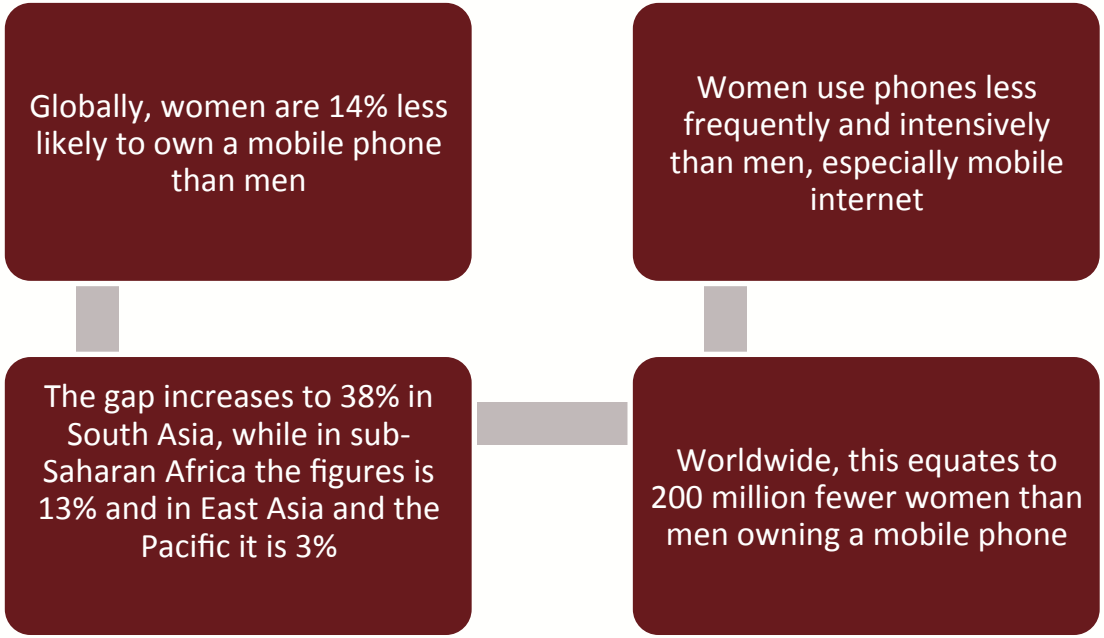
Bridging the gap can be achieved by:

- educating girls
- increasing literacy rates among women
- increasing early childhood development interventions
- increasing women's labour force participation and strengthening labour policies affecting women
- improving women's access to credit, land and other resources
- promoting women's political rights and participation
- expanding reproductive health programs and family support policies

- Mobile phone use in low to middle income countries has skyrocketed in recent years, but unfortunately many women are excluded from the benefits access to mobile services can bring

A large gender gap that needs to be bridged

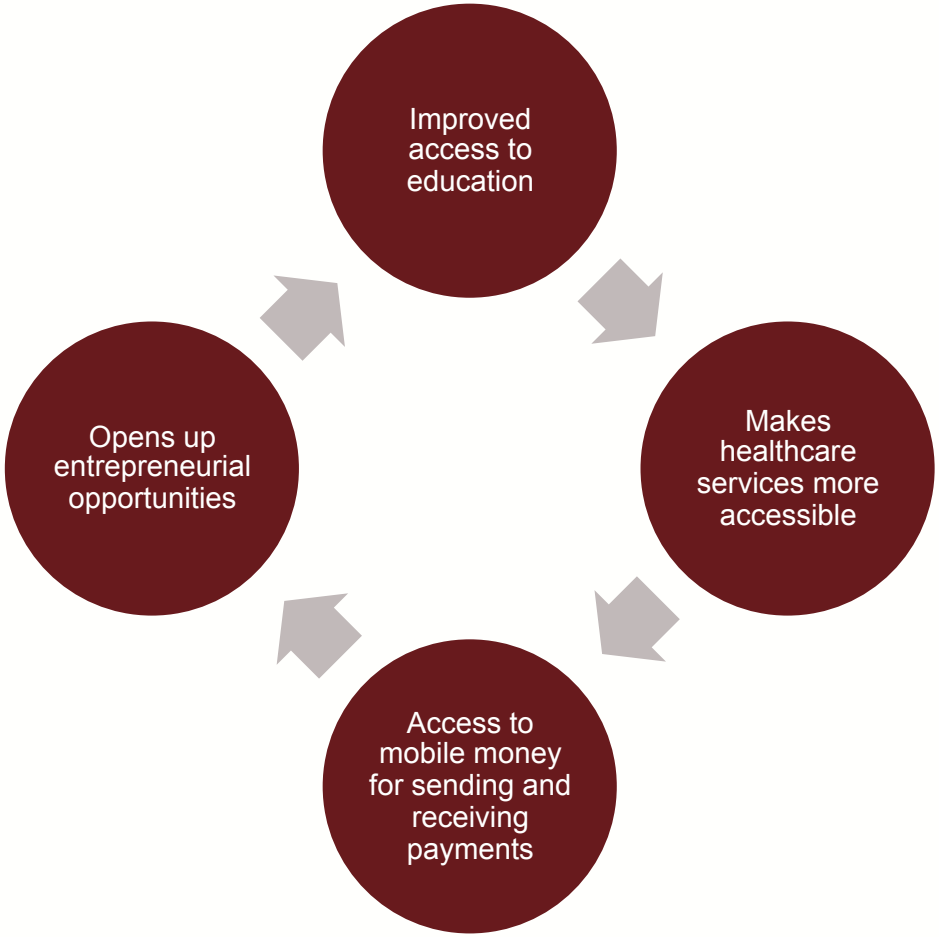
Despite the rapid growth of mobile phone use in low to middle income countries, women are still much less likely to own a mobile than men.



Source: GSMA, Bridging the gender gap: Mobile access and usage in low and middle-income countries (2015)

Benefits of owning a mobile

Mobile ownership offers social benefits to women and their families.



Opportunity for growth

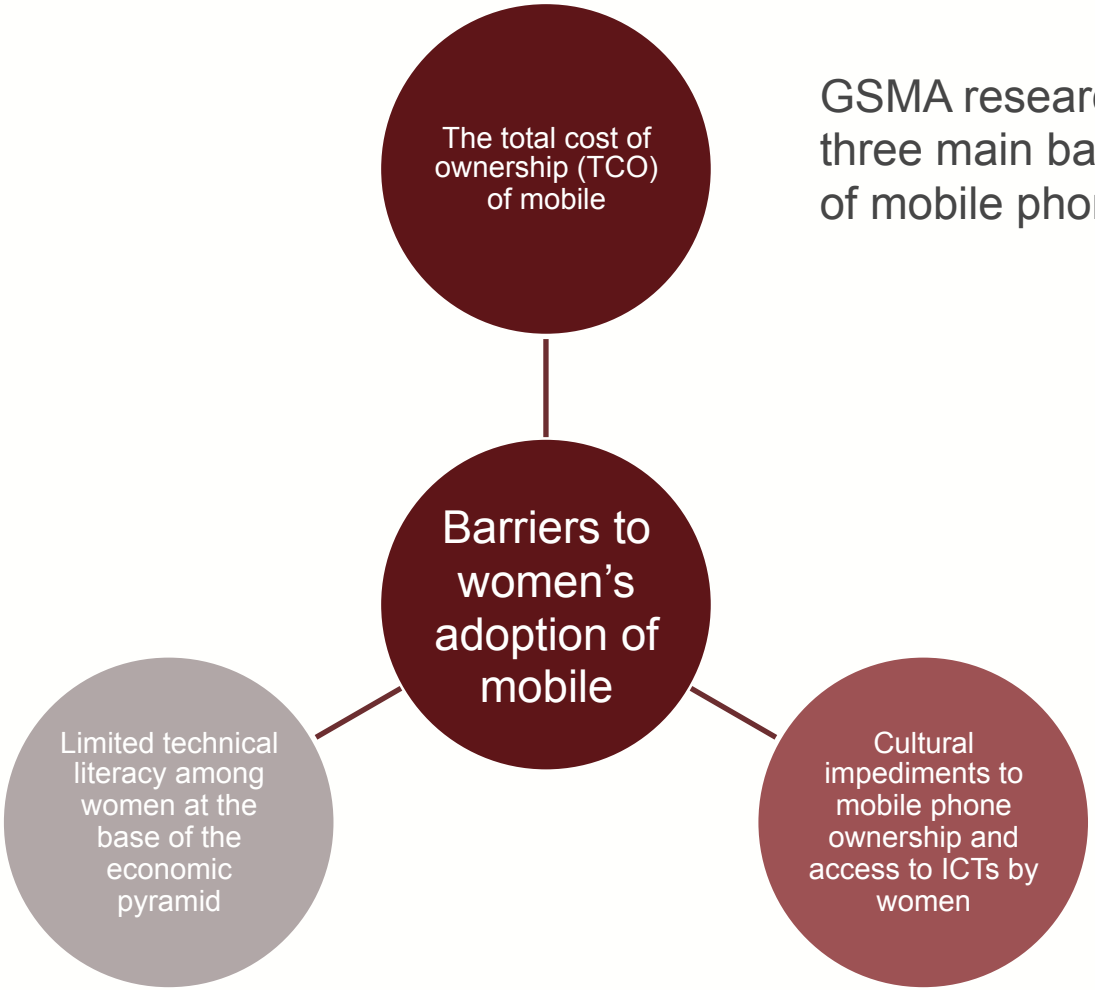
Closing the gender gap would not only help women, it would also bring significant financial benefit to national economies.

- Ensuring women own phones, and ensuring all women who own phones in low- and middle-income countries increase their usage of phones, could unlock an estimated $170 billion market opportunity for the mobile industry in the next five years.

- GSMA research has shown that each 10% increase in mobile penetration increases economic growth by 1.2%. World Bank research has found that each 10% increase in broadband penetration increases economic growth by 1.3%

These benefits will not be fully realised unless policies for extending mobile phone use take gender considerations into account.

Barriers to adoption



GSMA research has found there are three main barriers to the adoption of mobile phones by women

Why are women not being reached?

Underlying social norms, gender inequality issues and the cost of mobiles are preventing more women from using phones.

- The mobile gender gap is largely due to gender inequality in society
- Women tend to have lower levels of education and skills, as well as a lower socio-economic status
- High taxes on mobiles and mobile services put them out of the reach of most women, as they simply make them unaffordable

Addressing cultural barriers

There are many cultural barriers that stand in the way of women using mobile phones and services.

- Women are often financially dependent on men, or do not have control over economic resources, which makes accessing ICT services more difficult
- Allocation of resources for education and training often favours boys and men resulting in lower levels of literacy and education, including training in languages which are predominantly used in ICT platforms and the internet
- In some societies, women are barred from public places making access to public calling offices, community telecentres or internet kiosks difficult

What can regulators do?

Cost

Consider targeted, subsidized programmes for women to get access to mobile (e.g., subsidising handsets).

Reduce or remove mobile-specific taxes that exacerbate the cost barrier.

What can regulators do?

Security and harassment

Launch awareness campaigns in public forums and in schools to draw attention to harassment of women via the mobile phone.

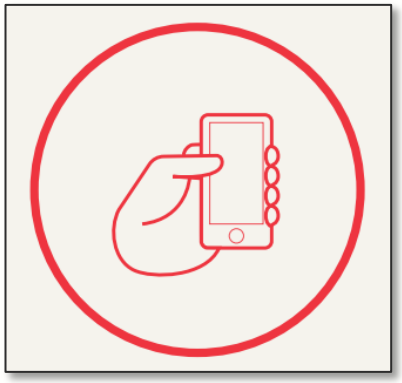
Develop legal and policy frameworks to address harassment over mobile phones and mobile internet.

Operator/agent trust

- Ensure policies do not undermine trust in agents or mobile operators (e.g., gender-sensitive registration and ID requirements).

What can regulators do?

Technical literacy and confidence



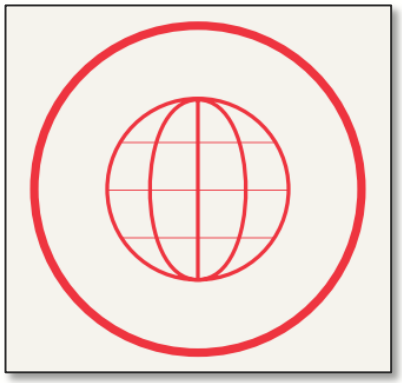
Include mobile and digital skills in school curricula, including primary schools, to ensure girls are reached.

Integrate mobile and digital skills training for women participating in government aid programmes.

Fund technical literacy training by NGOs.

Consider which services can be provided to women via mobile (e.g., G2P) to help women become comfortable and confident using mobile technology.

Network quality and coverage



- Provide public subsidies to mobile operators to facilitate network expansion in rural areas.
- Allow active and voluntary infrastructure sharing among mobile operators.
- Release sufficient spectrum (in particular low frequencies) to mobile operators at an affordable cost.
- Consult with industry on regulation and policy-making to give operators the necessary confidence to plan investment.

What can regulators do?

Lack of gender disaggregated data

Integrate gender into national broadband plans.

Track mobile access and use by gender, along with other ICTs, in national statistics databases.

Lack of focus on women

- Foster entrepreneurial ecosystems for mobile products and services (e.g., accelerators, incubators).

What operators are doing

Mobile operators are starting to target women through a range of channels.

- Mobile operators are addressing gender gap issues by creating value propositions, specialised tariffs and VAS specifically for women
  - Turkcell in Turkey – Engaging women micro-entrepreneurs
  - Dialog's 5 Star Partner Programme – Integrating women into the rural retail chain in Sri Lanka
  - Etisalat's Weena service – a mobile offering tailored specifically to the needs of rural women in West Africa

However, these types of services need help from regulators to address issues of cost and taxation. If costs were reduced for the end user, it would be possible to scale and replicate mobile services for women.

Disaster Response

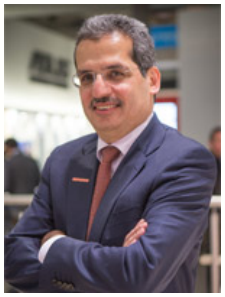
Mobile is now a basic humanitarian need in times of crisis

"You may wonder, well, what's a 130-year-old institution like the Red Cross doing in the new world of mobile technology? But we are seeing it literally revolutionise disaster response."

- **Suzy DeFrancis, chief public affairs officer, American Red Cross**

". . we are gaining a better understanding of the potential our networks have to play a supportive role both during and in the aftermath of a crisis. Enabling affected communities, governments and aid workers to access the internet, make a phone call or send a text is a vital part of crisis management and the humanitarian response which follows."

Dr Nasser Marafih, Group Board Member and ex-CEO, Ooredoo



Disaster response — rebuilding the human network

Disasters increasing in frequency

Due to factors such as climate change, demographic change, population growth and urbanisation, disasters are increasing in frequency and magnitude.

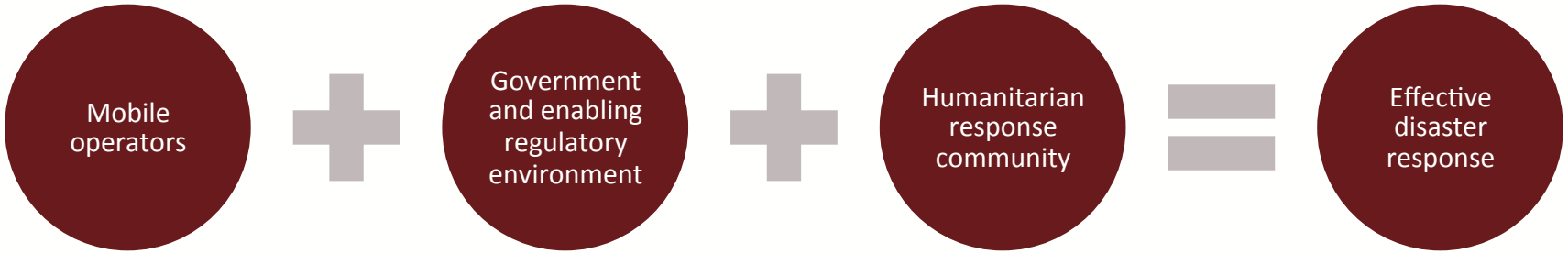
- Most mobile networks were not designed to provide mission critical communications during disasters
- However, they are now depended on in the most acute situations to reconnect loved ones, call for help and access information
- Mobile networks are playing an increasing role in disaster response by providing connectivity to initial assessment teams and first responders
- As mobile networks are now a core social utility, they should be designated and prioritised as basic emergency infrastructure
- Designing networks to cope with disaster is not easy, as call volumes can rise hugely during times of disaster — calls following the triple disaster in Japan rose by an estimated 600%

Disaster response planning

Planning for disaster, as well as efficiently and effectively responding to events, saves lives and speeds up the time to recovery.

Partnership approach is crucial

Improving coordination between mobile operators, governments and the humanitarian response community creates a mobile system that can help people at the time of their greatest need.

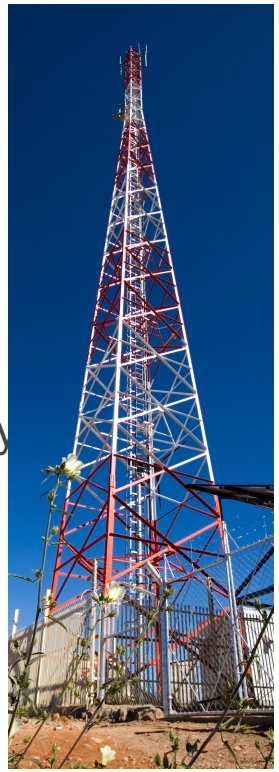


- Governments and operators should work as partners in emergencies
- Good regulation can promote effective and efficient response and recovery, while poor regulation detracts from it
- A well-conceived and well-executed regulatory approach can support carriers in re-establishing service more rapidly and completely
- Operators are highly incentivised to restore service — they acutely recognise the importance of connectivity to their customers and lose money and reputation every hour a service is down

Operators often struggle to recover after disasters

Operators lose money and reputation when their service is down, but disasters make recovery very difficult. This is due to a number of factors:

- Disasters render equipment inoperable and make power unreliable
- Disasters undermine logistics — damage roads/airports — and injure or kill staff, preventing them from reaching their posts
- They put overwhelming loads on networks, causing slow downs, and engineering networks to absorb these extreme situations is very challenging due to cost and spectrum pressures
- Operators typically do not have HR capacity to build the necessary disaster preparedness and response teams
- They also tend not to have a comprehensive knowledge of the international humanitarian system, its assets, principles and potential partners, yet must navigate an onslaught of requests by these organisations



List of key regulatory issues

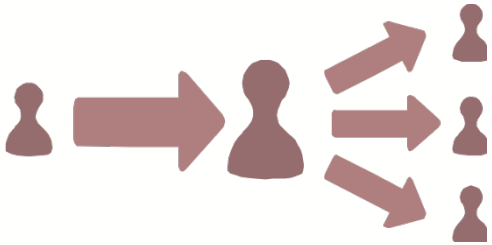
With the assistance of mobile operators and governments, the GSMA has developed a list of key regulatory topics related to disaster response.

These cover the following areas:

- Interaction with key government agencies
- Frequency use
- Maximum power level
- Emergency back-up power
- Tower-siting
- Mobile transmitters
- VSAT (for emergency backhaul)
- Mobile phone emergency alert mandates
- Minimum service obligations and outage reporting
- Immigration rules (for emergency personnel)
- Customs rules (for emergency equipment replacement)
- Use of big data

Key government agencies

Knowing who to contact can save time and lives.



- Knowing which agency is in charge of each regulatory area of concern in an emergency is critical — and not obvious once an emergency occurs
- This should not only include identifying the right agency for each substantive area, but also specific personnel or contact mechanisms for use in emergency situations
- Where a regulatory concern crosses different agencies, or where coordination is important to success, it is important to identify key liaison personnel — for example, between a Communications Ministry and a Customs Office
- Unfortunately, many key government agencies have not yet designated personnel for emergency operations
- It is also hugely important that mobile operators are integrated into national disaster management authority plans where these exist

Frequency regulation

Operators have identified frequency sharing as the main frequency concern during emergencies.

- Frequency sharing is usually achieved by altering the roaming tables
- In many countries the roaming tables may be altered without government approval, though operators usually inform the regulator
- However, in some countries (e.g. Nepal) formal approval is needed before an operator can change roaming practices
- It is important that operators are able to secure permission to use a frequency for a different use/service than that for which it is licensed, or typically allowed, so operators can optimise networks after damage
- Operators also need to be able to secure permission to use wireless (microwave) backhaul if landline connections are disrupted

Regulation of maximum power and back up power

Power levels and back up power often need to be altered during an emergency. Governments should have clear guidance for operators on rules governing:

- The increase of the maximum power of a cell in order to enlarge its coverage area
- Use of directional antennas and other power-related changes
- How back-up power can be used at cell sites
- How back-up power can be used for other facilities, such as interconnection or switching centres

Tower-siting regulation

When disaster strikes, cell towers often suffer extreme levels of damage requiring operators to use temporary towers. Therefore, disaster response policies should cover:

- How an operator can secure permission to erect a temporary tower/mast during an emergency
- Whether operators are allowed alter an existing tower/mast, and rules governing the operation of a damaged cell site
- Rules governing the use of mobile transmitters

VSAT regulation and mobile phone emergency systems

Backhaul links are key to keeping mobile networks up and running during emergencies. Many carriers rely heavily on satellite links, known as VSATs, for backhaul in the early days of an emergency.

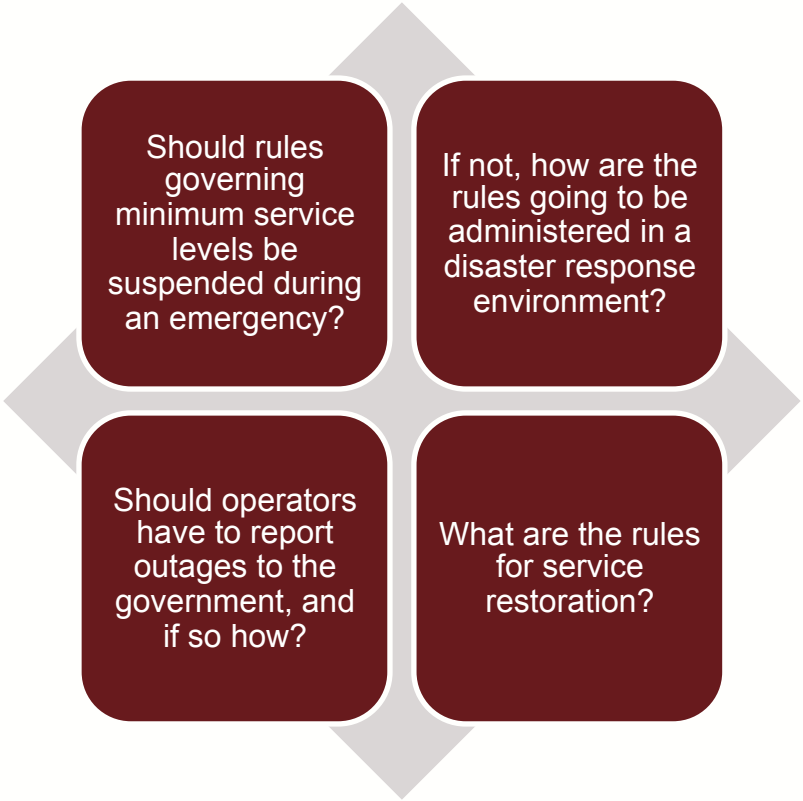
- Should there be rules governing licensing, operation and import of VSATs in these situations?

Mobile phone emergency systems can be used to quickly broadcast information on emergencies to large numbers of people.

- Should certain users receive priority access to the network during times of emergency?
- Should the government have priority, to the point of displacing commercial users off of the network, in the event of an emergency?

Minimum service obligations and outage reporting

Most mobile licences require operators to meet minimum service levels and report outages. However, these rules may not be workable during a crisis situation.



Immigration and customs

During an emergency, operators may need to bring new equipment, as well as new expertise, into the country.

Immigration:

- In some emergencies it will be critical for operators to get subject matter experts into the country to restore networks
- Should there be special rules for credentialing emergency personnel?

Customs:

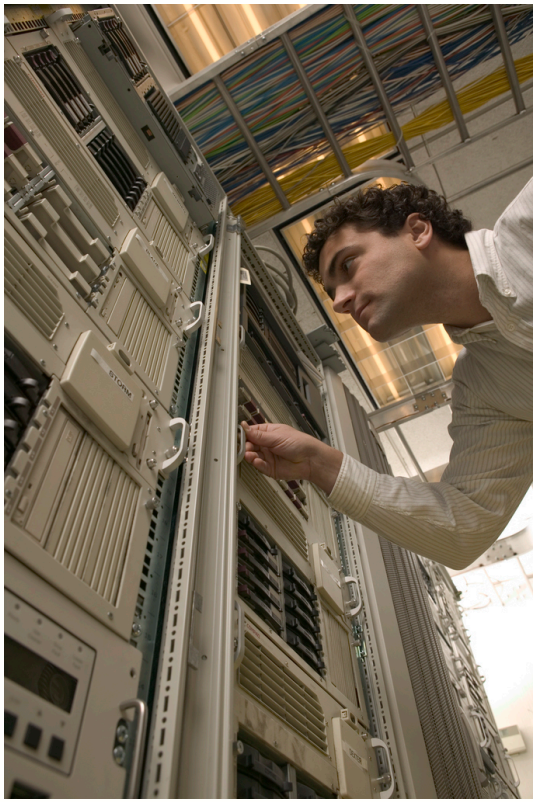
- Operators often report serious challenges importing equipment during emergencies
- Regulators should consider designating a liaison between the communications ministry, customs and industry
- If there are importation rules in place covering communications equipment should they be suspended during disasters?
- VoIP has become a useful tool in emergency response situations, if VoIP use is generally restricted, should the restrictions be lifted during an emergency?

Use of big data

Big data, such as analysis of anonymised Call Detail Records (CDR), can be useful in disaster response for tasks such as predicting displacement and disease outbreak.

In Haiti, Digicel and Flowminder successfully partnered to track populations displaced from Port-au-Prince after the earthquake, and better allocate aid and information during the subsequent cholera outbreak

- Regulators will need to decide whether they impose limitations around how long CDRs are stored and how they will address rules governing consumer privacy and security
- As this data is time critical, regulators should pay close attention to the length of time it takes to negotiate a legal agreement for access to this data
- Governments and operators could also consider structuring these agreements in advance to ensure big data can be safely and securely accessed when it's needed most



Examples of best practice policy

There are a number of examples of the use of flexible policy by regulators around the world during times of disaster. These include:

Japanese Ministry of Communications in response to the Tohoku earthquake and tsunami	• Temporary increase in power levels of certain sites to extend their range
AFAD Turkey after the Van earthquake	• Relaxation of privacy laws upon request to allow Turkcell to help locate missing persons trapped under rubble
Philippines Financial Regulator	• Relaxing Know Your Customer (KYC) requirements to enable access to mobile Government-to-Person (G2P) payments after Typhoon Haiyan

Country example: Philippines

Regulatory area	Current regulatory stance
Frequency Use Changes in Emergencies	Exceptions to normal rules are considered on a case-by-case basis and specific frequencies are allocated exclusively for disaster management
Frequency Sharing / Roaming Changes in Emergencies	Generally frequency sharing is not permitted, but carriers may seek approval to do so on a case-by-case basis
Flexible Use Policy	Philippines does not have a general flexible use policy
Maximum Power Level	Rules allow carriers to request permission to increase power and regulator considers these requests on a case-by-case basis
Use of Mobile Transmitters	No special regulations apply to mobile cell towers, so providers may use alternative transmitters in areas that have no or intermittent service
Application of Minimum Service Obligations	There are laws governing the structural integrity networks and facilities, and operators must also have a sufficient number of technical personnel available in an emergency
Emergency Back-up Power	Operators must ensure the availability of sufficient standby generators that can be used in power outages lasting at least 24 hours
Tower-Siting	Regulator has not issued any specific regulation on tower-siting
VSAT Use	There are no rules relating to operators' use of VSAT
Mobile Phone Emergency Systems and Prioritisation	Philippines has 'Public Safety Broadcast Text Messages' that are sent to the public before and during an emergency, and the PIA acts as the clearinghouse for these SMS messages

mGovernment

mGovernment initiatives

Mobile can play a role in making government services more accessible, even to those who live in geographically remote areas.

- Governments throughout the world are setting up initiatives, rolling out programmes and reviewing regulation to allow government services to be accessed via mobile devices
- These programmes take many forms, such as mGovernment initiatives and smart city developments
- The use of mobile provides citizens with more flexible and personalised ways of interacting with public administrations, even if they live in rural areas

Identity for mGovernment

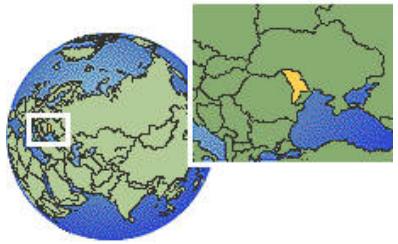
Secure and trustworthy authentication is essential to the success of mGovernment services. Mobile technology is considered a key asset and enabler for stronger forms of authentication and identification to support these types of services.

There are several advantages to partnering with mobile operators to deliver strong identity authentication services to citizens. These include:

- Operators' use of SIMs that support secure, real-time authentication systems
- The mobile industry's extensive experience of offering customer support for new technologies
- The industry's strong registration, fraud detection and mitigation policies

Case Study: Moldova

Mobile signature unlocks mGovernment for Moldovan citizens.



- Mobile signature is part of the country's Strategic Programme for Technological Modernisation in Governance
- Mobile signature acts as the national identification document for Moldovan citizens in the online world
- It allows users to authenticate themselves by receiving a confirmation message on their phone that they validate with a PIN
- Citizens can use the service to authenticate and sign documents, reports and declarations online, as well as filing tax returns
- The mobile signature can be obtained in all Orange and Moldcell shops — customers only need to bring their national ID with them to set it up
- The service is also available when citizens are travelling, so they can access mGovernment services abroad that were traditionally only available at home

Birth registration via mobile in Uganda

The key issues:

- In most countries around the world, proof of identity is an essential prerequisite for gaining access to basic services, including enrolling in education and healthcare services, or even claiming rights to inheritance
- Birth registration rates are low in West and Central Africa, with an average of just 39 per cent of newborns being registered at birth
- With its mobile birth registration initiative, Uganda Telecom has become a pioneer in the use of mobile as a means of dealing with these fundamental challenges related to physical identity

Birth registration via mobile in Uganda

The approach:

- In developing countries, such as Uganda, paper-based birth registration processes are slow and inefficient
- For this trial village chiefs and other registration officials were given SIM cards so they could register local births by mobile
- Hospitals were also provided with 3G connections so they could use a web-based registration application to complete the registration process
- This allowed birth certificates to be printed at local hospitals or administration offices

Birth registration via mobile in Uganda

The outcomes:

- Mobile has proved itself to be a highly efficient solution to this perennial problem, as even in deep rural areas, coverage is available
- Costs are low and the benefits have been almost immediate
- Areas with the lowest levels of registration were targeted — those with under 25 per cent — and the project was successful at raising this to 80 per cent of births (a total of 145,411 births)

Government bodies can inadvertently stifle innovation

Policymakers can do much to promote the use of mGovernment services, but by not supporting open data, or by implementing poor regulation, they can also stifle the creation of innovative mobile services.

- In Kenya and Tanzania the Meteorological Departments have blocked operators from using private weather information due to a government monopoly on this type of information
  - This is hindering the uptake and value proposition of mobile agricultural services

- In India, the telecoms regulator has hindered the use of SMS by increasing termination charges and requiring customers to double confirm their subscription to a service
  - The intention was to reduce spam messages, but it halved the uptake of value added mobile services — such as mHealth and mAgri services — in the two months after its inception in July 2013

Session 12: ACTIVITY

Activity

Core Problem Solution Design

As a government employee, mobile network operator, innovator, and/or civil society stakeholder who is concerned with addressing ICT challenges in Myanmar, you will design a solution based on your Core Problem from Day 1.

Activity

Core Problem Solution Design

The situation:

The design will need to include **enabling policy and/or regulation** to make your solution possible. Your group will be responsible for designing for one of the following citizen profiles:

- A student in her late teens
- A mid-twenties taxi driver
- A mother of three school age children
- A 50-year-old shop keeper
- A 24-year-old mechanic
- An unemployed 32-year-old woman

Activity

Core Problem Solution Design

The task:

As a group, with a facilitator taking notes, brainstorm:

- How you would design this solution for your citizen profile?
- How can you make your design and solution socially sustainable?
- How can you make your design and solution economically sustainable?
- How will policy and regulation inform your design?
- Prepare a short presentation that informs the audience about your solution design and the policy and/or regulatory mechanisms that accompany it. You will have 60 minutes to prepare your presentation!
- You will have 10 minutes maximum to deliver the presentation on your solution

Session 13: DISCUSSION

Feedback Forms, Certificate Awards, Final Words, and Close

THANK YOU