

# Higher Education Summit Washington DC

Networking today and Tomorrow  
Connectivity for education –  
Connecting without Boundaries

# Introduction

- Why is it important
  - I have 3 children, including an 8 year old who is already about as computer literate as I am, and who uses the internet more regularly than I do
  - My sister was a Lecturer in Development education until an accident this time last year - she taught me the importance of education, as well as constantly reminding the family that we have a very privileged existence, and that social justice means equal opportunities for all
  - Motorola gave me the opportunity to study the impact of social enterprises in South Africa – we went to schools and saw the impact that having clean washrooms have – what impact would connectivity have?



# Changing Business climate

- Business is changing
- Move from Corporate Social Responsibility to triple bottom line
- It's not about making a charitable contribution, it's about building into the fabric of the business the need for social benefit, environmental improvement, as well as profit and stockholder return that is the core of what we do
- Education as a market is both a key commercial market, and the key to the economic and social development of future citizens and consumers

# Changing technology

- The technology exists to affordably allow lesser developed countries to leapfrog straight to broadband technology
- The options range from basic WiFi to 4th generation networks such as LTE and Wimax, with some interesting alternatives along the way in private and unlicensed networks
- Broadband is another utility - Education, commercial work, social networking increasing depend on the level of connectivity you can command





# MOTOWi4 Complete Suite of Wireless Broadband

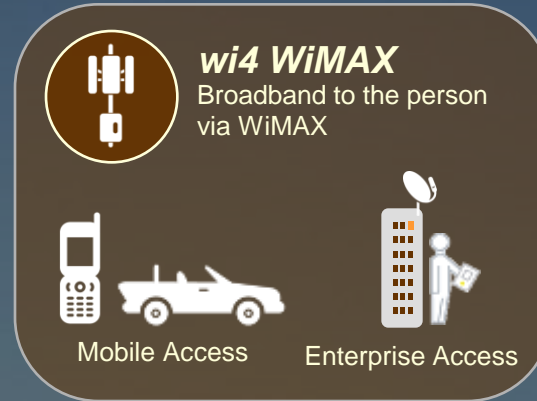
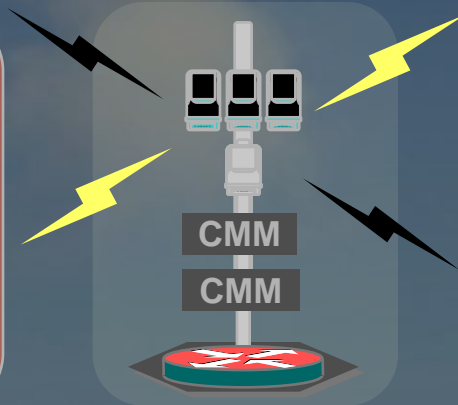
## MOTOWi4 Solutions

900 through 5GHz



**wi4 Fixed Point-to-Multipoint**  
Rural

This panel illustrates a rural broadband solution. It features a central antenna icon in a red circle at the top. Below it, a dashed line connects to a satellite dish on a barn roof and a tower. The word "Rural" is written at the bottom.



**wi4 WiMAX**  
Broadband to the person via WiMAX

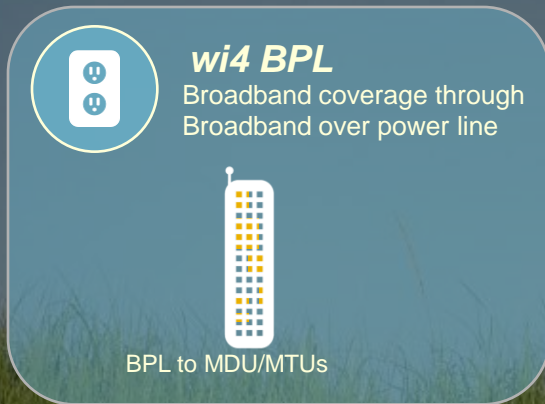
Mobile Access      Enterprise Access

This panel shows mobile and enterprise access. It includes a mobile phone icon, a car with a WiMAX antenna, and a person with a laptop and satellite dish. The text "Mobile Access" and "Enterprise Access" is at the bottom.



**wi4 Fixed Point-to-Multipoint**  
Residential Access

This panel illustrates residential access. It features a central antenna icon in a red circle at the top. Below it, several house icons are shown with satellite dishes. The word "Residential Access" is at the bottom.



**wi4 BPL**  
Broadband coverage through Broadband over power line

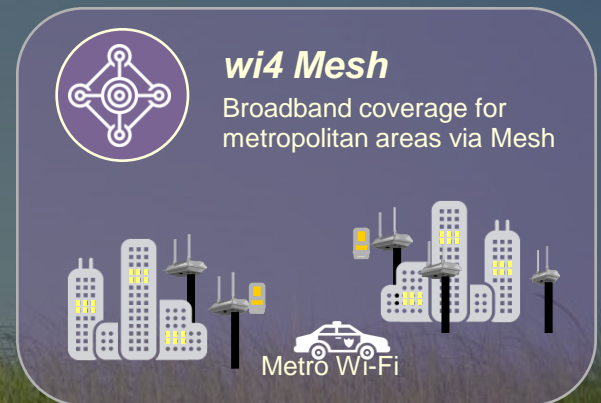
BPL to MDU/MTUs

This panel shows broadband over power lines. It features a power outlet icon in a blue circle at the top. Below it, a tall building with a WiMAX antenna is shown. The text "BPL to MDU/MTUs" is at the bottom.



**wi4 Fixed Point-to-Point**  
IP Backhaul

This panel illustrates IP backhaul. It features a signal tower icon in an orange circle at the top. Below it, two buildings with antennas are shown connected by a line. The text "IP Backhaul" is at the bottom.



**wi4 Mesh**  
Broadband coverage for metropolitan areas via Mesh

Metro Wi-Fi

This panel shows mesh networking for metropolitan areas. It features a mesh network icon in a purple circle at the top. Below it, a cityscape with multiple antennas and a car with a Wi-Fi antenna is shown. The text "Metro Wi-Fi" is at the bottom.

# What can be done?

- Use in Africa what we have used in Texas – don't short change the LDC's
- 5-10 Kilobytes per second is not good enough anywhere in the world
- With a sensible business case based around the right technology, initial non commercial intervention, supported by a good commercial model good, sustainable connectivity can be provided anywhere in the world
- It can be low environmental impact
- Ensuring capacity building is an integral part of the project to provide sustainability



# What has been done?

## Macedonia

- Co-operation with USAID
- non commercial and commercial working in perfect harmony
- Outcome - students connected, All Universities, All Second level schools and All primary schools in less than 3 months
- Demonstration of the ease of roll out
- Partnered with commercial organisation to become nations first and only national broadband network available to 95% of the population
- Sustainability through a profitable commercial business

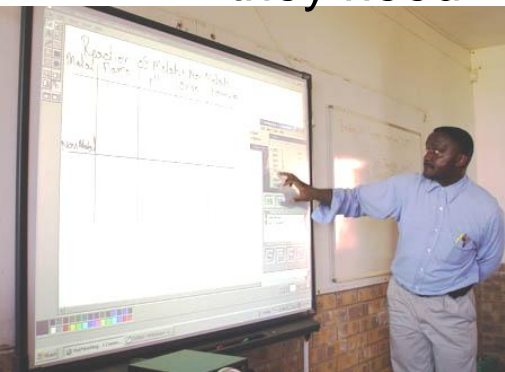
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# What has been done?

## South Africa -Ulwasi/Meraka

- Addressing a real need - skills shortage due to disease and investment in training for educators
- Force multiplier – use technology to allow a single educator to teach multiple sites
- proof of concept, being expanded to more sites across 100's of Kilometres of Africa
- Missing element was real broadband connectivity – this is now available and affordable
- Highlights advantages of private networks – what stays within the network is free to distribute – using public networks/satellites involve significant cost
- Outcome - students connected to the knowledge and educators they need

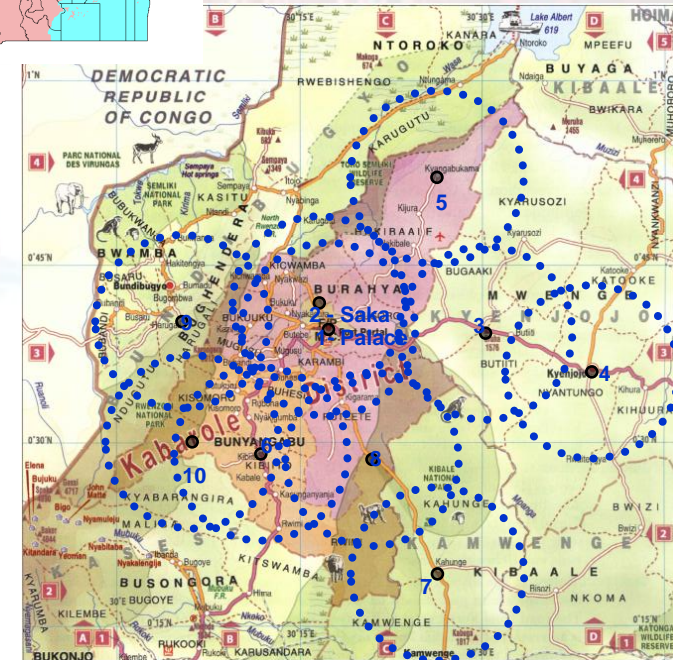
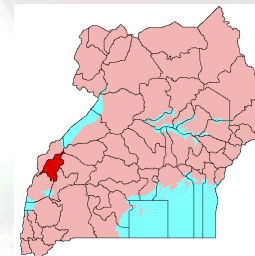




# What do we want to do?

## Uganda Mountains of the Moon university and Village-Link

- New university with a unique not for profit structure owned by local community and churches
- University acting as the hub for regional redevelopment
- Use university as the centre for schools and rural connectivity, low environmental impact, alternative power – goal: students and the whole community connected
- Provide interactive library and information in co-operation with the existing local resources
- Mobilise the funding (that we know is waiting for good projects) behind
  - real partnership between the local People, Government ,
  - Utilise both non commercial funding sources and private enterprise, both multinational and local
  - commercially sustainable model
  - replicate massively to ensure all students and educationalists can connect across Africa



# Closing thoughts

- Quality content for educators exists in huge amounts and is increasingly “free” to access, but only if you have sufficient connectivity. We are again creating a divide between the have’s and have not’s
- Its worth thinking big – the solutions do exist that are as good as anything in the developed world, but can be utilised in a LDC by putting an appropriate business case around it
- We can succeed in ensuring that every student in the less developed countries is connected, cost effectively and with great bandwidth, by utilising the latest technology and business expertise



# Closing thoughts – Future actions

- Universities and other institutions must continue to partner to provide the content and help provide the means to distribute and share to the wider education and local communities
- Use the skills you have in obtaining money from government, world bank, the EU, foundations etc to support partner institutions in LDC's (where a \$1m goes a long way)
- Find models that work and massively replicate them – we keep being told that money is not the issue – good projects are what is needed – I believe the projects exist today, we just need to join the two together

