



Satellite in the present political climate - added value for Europe

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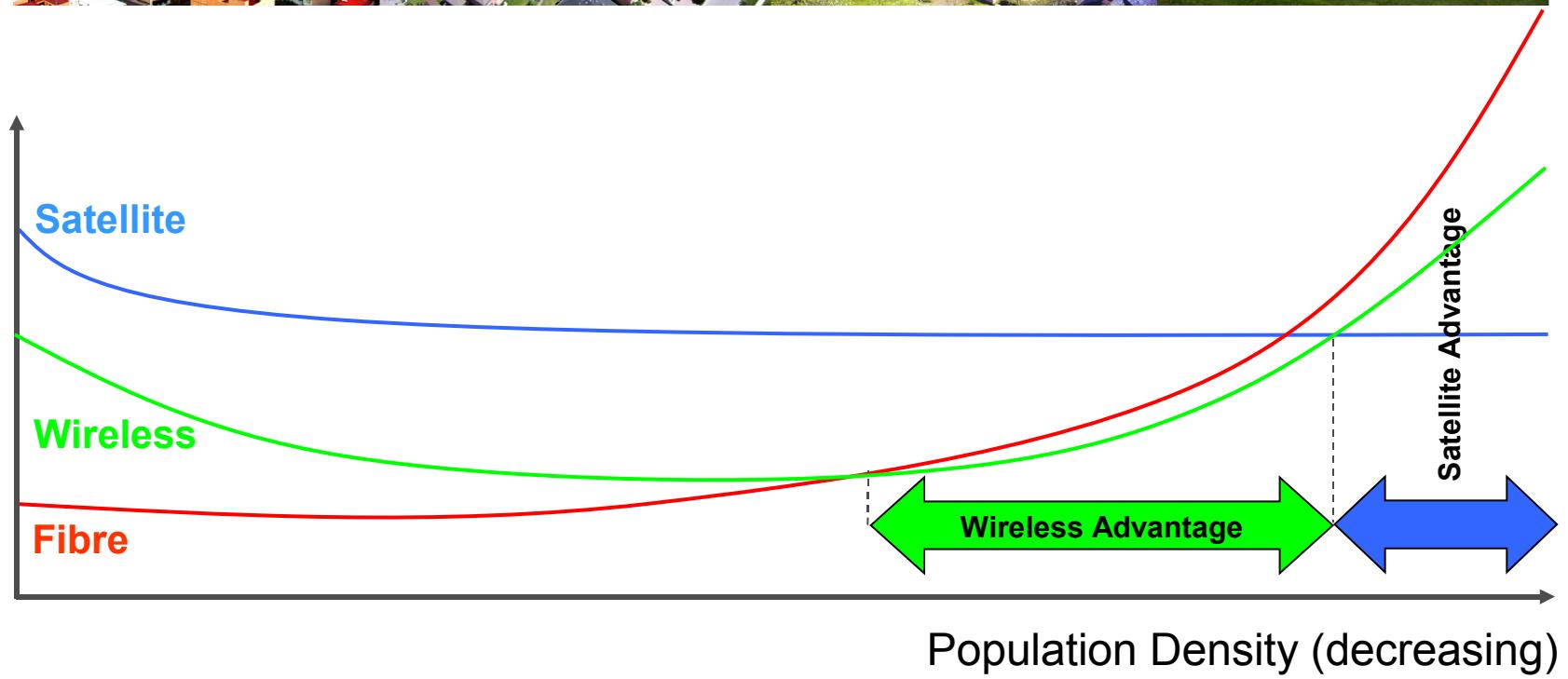
1st Nereus Workshop on Satellite Broadband
Brussels, 4 February 2010

Who are Helios?

- Helios is a wholly independent telecommunications and transport, technical and business consultancy
 - Formed in 1996
 - 50 staff in Farnborough, UK and Zilina, Slovakia
 - Global footprint
- Satellite experience
 - Extensive support to Galileo programme
 - Numerous studies for ESA (most recently Alarm, Bird Strike)
 - Currently undertaking comparative CO₂ study for ESA
- Telecommunications experience
 - Regulatory support to various Telecoms regulators
 - Development of spectrum pricing and allocation policy



Total Service Cost Per Home Passed



Disadvantaged Rural Communities

- It has long been recognised that rural communities are often the last to receive benefit of developments in technology

“over 56% of the population in the 27 EU Member States live in rural areas, covering 91% of the territory; rural development is a vitally important policy area”

“penetration by computers and Internet remains lower in thinly populated, rural areas of the EU”

‘The Digital Divide in Europe’, Statistics in Focus, Sep 2005



RURAL ELECTRIFICATION ADMINISTRATION

Electrification of Rural Areas, USA, 1935

'The Real Last Mile'

- Infrastructure heavy methods of rolling-out broadband will never reach the last few percent
 - the (NGA) digital divide will not be bridged by such technologies
 - even 'wireless' networks require wires to the base stations
- There is complete synergy between the EC's objectives for underserved areas and broadband delivered by satellite

Digital Region will place South Yorkshire at the forefront of the UK's digital communications agenda, with coverage of the network reaching 1.3 million people, 540,000 homes and 40,000 businesses, 97% of all premises.

"state investments in broadband ... should be limited to investments in underserved areas."

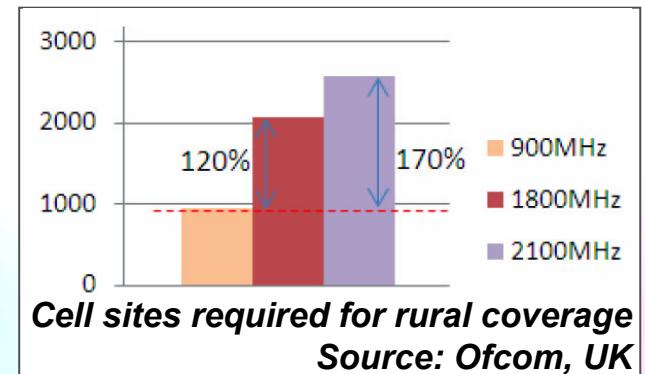
EC Announcement, 17 Sept 2009

"Given that broadband services can be delivered on a host of network infrastructures based on wireline, wireless, satellite and mobile technologies, Member States should not favour any particular technology."

*EC Guidelines for Rapid Deployment of Broadband,
30 Sept 2009*

'Spectrum is the Answer'

- Only sub-1 GHz spectrum is cost-effective in providing rural wireless coverage
 - Only 144 MHz of such spectrum is allocated
 - including the 'Digital Dividend'
 - Not all of this is 'available' in all MS
- By contrast, Ka-band has 1000 MHz of downlink and 2500 MHz of uplink spectrum available
 - Almost 25 times as much



Conclusions

- Europe is about to embark on major investments in broadband
 - Focussed on digitally disadvantaged areas = rural areas
- Rural areas will not fully benefit from this investment, even with MS aid, if infrastructure based services are envisaged
 - And make up over 50% of the EU population
- There is insufficient suitable spectrum available to offer wireless rural broadband
- Satellite can deliver the necessary broadband connectivity today