

Portable WLANs

Connectivity at the extreme edge

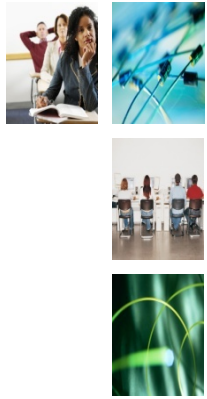
NGN Workshop, Prague, Feb 2009

Mark O'Leary, JANET(UK)

Agenda

- Motivation
- A niche application?
- Planned work



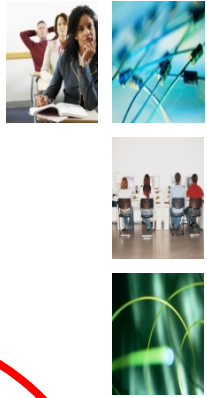


Network access strategy

- To allow all aspects of the research, teaching and learning process to be pursued outside of the traditional campus environment

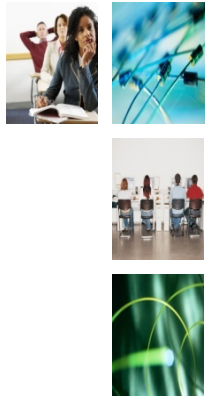
"Extending the edge"

- Maintaining
 - Equality of access
 - Consistent user experience



Network access strategy

- To sever the connection to local fixed infrastructure through wireless technologies, enabling mobility through roaming and nomadic modes of connectivity
- "Cutting the wires"*
- True location-independent access



Network access strategy

Extend the edge

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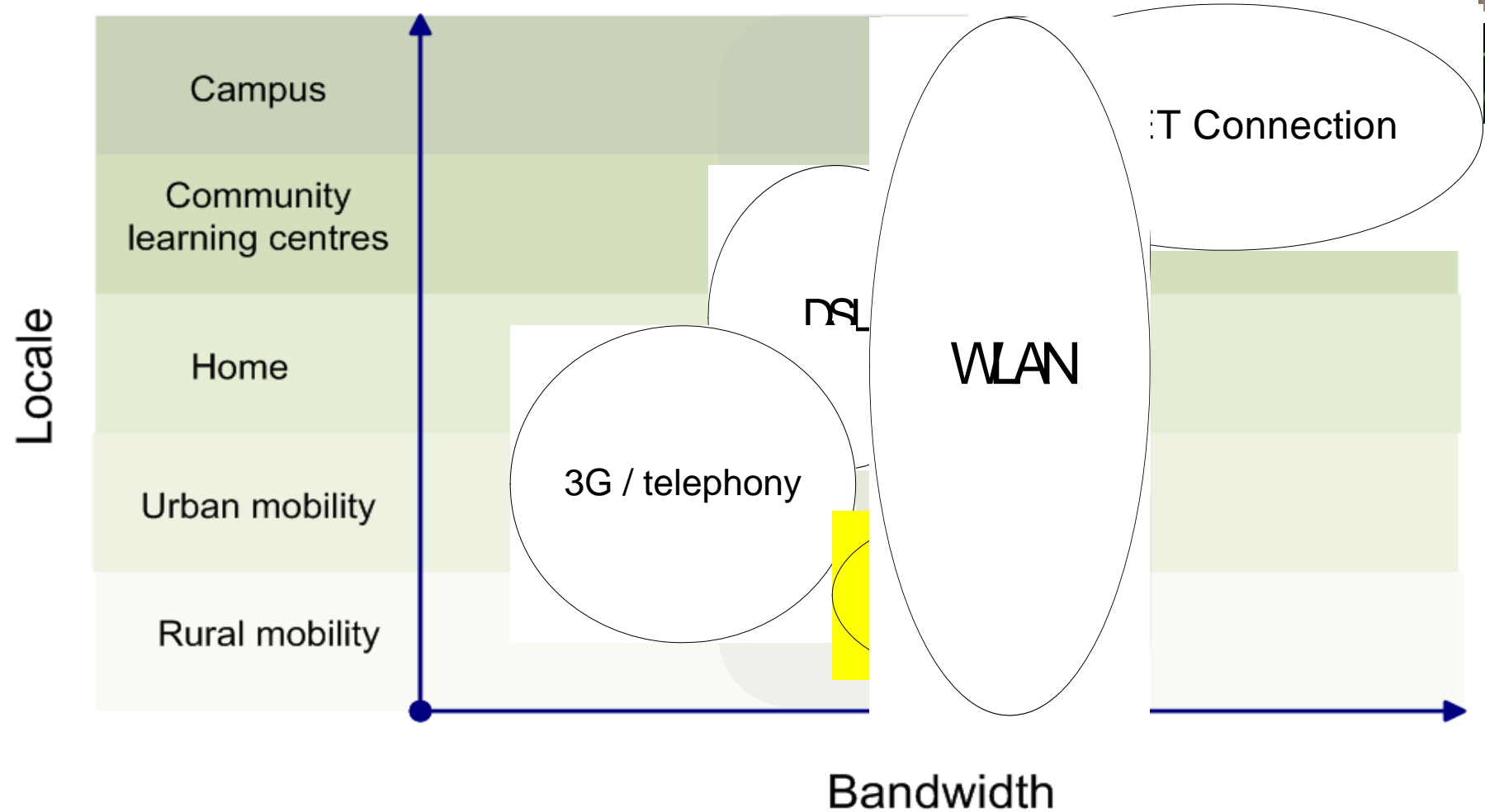
Cut the wires

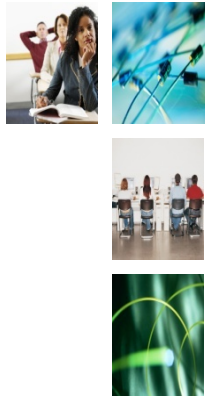
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“minimise the temporal and spatial
limitations on access to JANET-delivered
content and resources”

→ Your data, when and
where you want it!



Identifying the niche





Refining the niche

- What does 'rural' mean here?
 - Extreme environments
 - 'Off-grid'
 - Also encompassing 'deprived urban'
- Assistive technology
- Pedagogic impact



The real inspiration



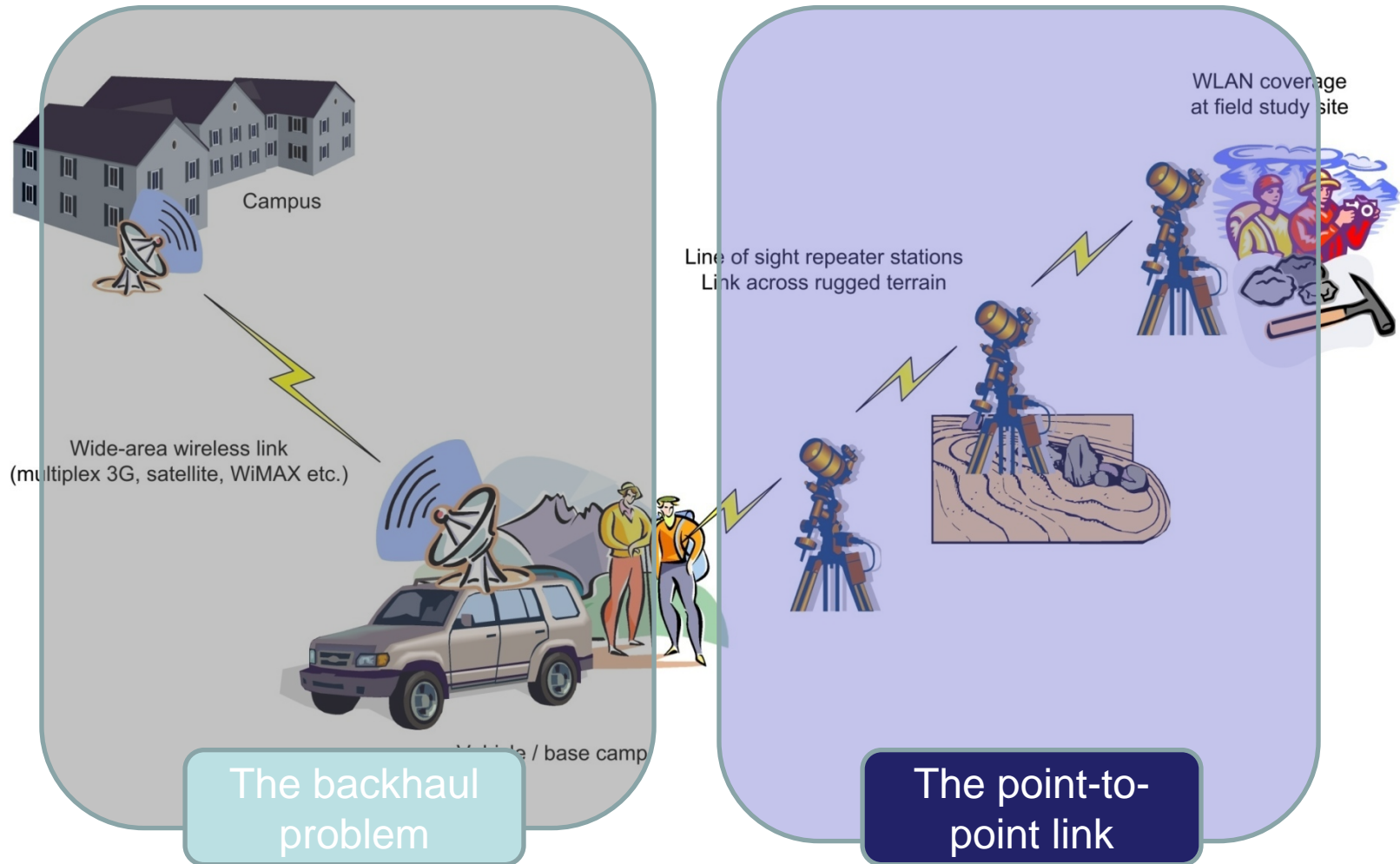
- Enabling Remote Activity (ERA)
- Presentation at mLearn 2008

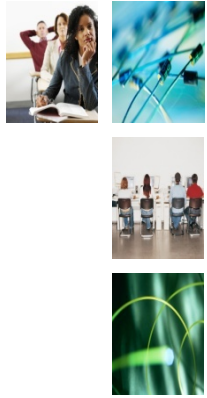


Open University Knowledge Media institute
<http://projects.kmi.open.ac.uk/era/>



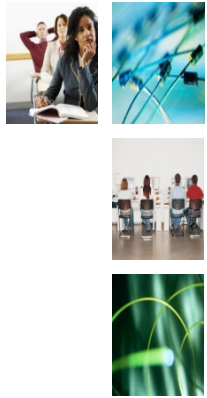
The model





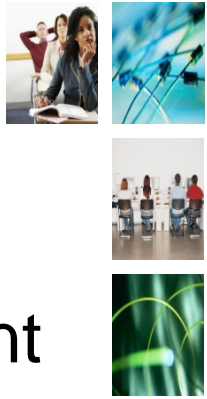
Backhaul

- Wide area backhaul solution
 - Base camp/vehicle to campus
- Appropriate technology
 - Multiplexed 3G, WiMAX, satellite, other?
- Power
- Manageability



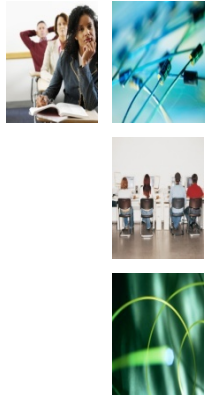
Point to point links

- Portable ('WLAN in a backpack')
- Rugged & weatherproof
- Self-powered
 - batteries
 - wind, solar, other?
- Auto-configuring



Funded research

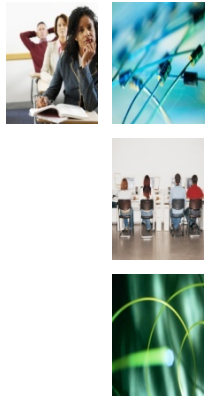
- The creation of a 'kit of parts' and deployment guidance that will allow any community member to purchase and develop their own mobile WLAN, to support field courses
- A comparative study of various options for backhaul from such a mobile WLAN to JANET and/or the home organisation
- Collaboration with one or more existing field study modules/courses, so that students have direct experience of data access in this context
- **Works begins February 2009!**



Project teams

- **University of Lancaster** – mountain rescue scenario
- **Leeds Metropolitan University** – building on existing work in the Third World (Malawi)
- **Open University** – extending the ERA project
- **Orkney College** – extreme weather and educational impact
- **Strathclyde University** – manageability expertise
- **Northumberland College** – varied field courses for testing

Educational applications within the trial



- Archaeology
- Geophysics
- Geology
- Agronomy
- Nordic Studies
- Horticulture
- Renewable energy
- Sport
- Equine management