



argiva

## WiFi & Small Cells from Arqiva – Off-loading traffic, without off-loading revenue

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# Arqiva is a leading communications infrastructure and services company in the UK

## Arqiva highlights ~£840m revenue

### TV

**£600m** switchover from analogue to digital TV

### Radio

**1,500** radio sites for the BBC and other radio stations

### Mobile & Telecoms

**8,700** macro sites for cellular networks

### WiFi

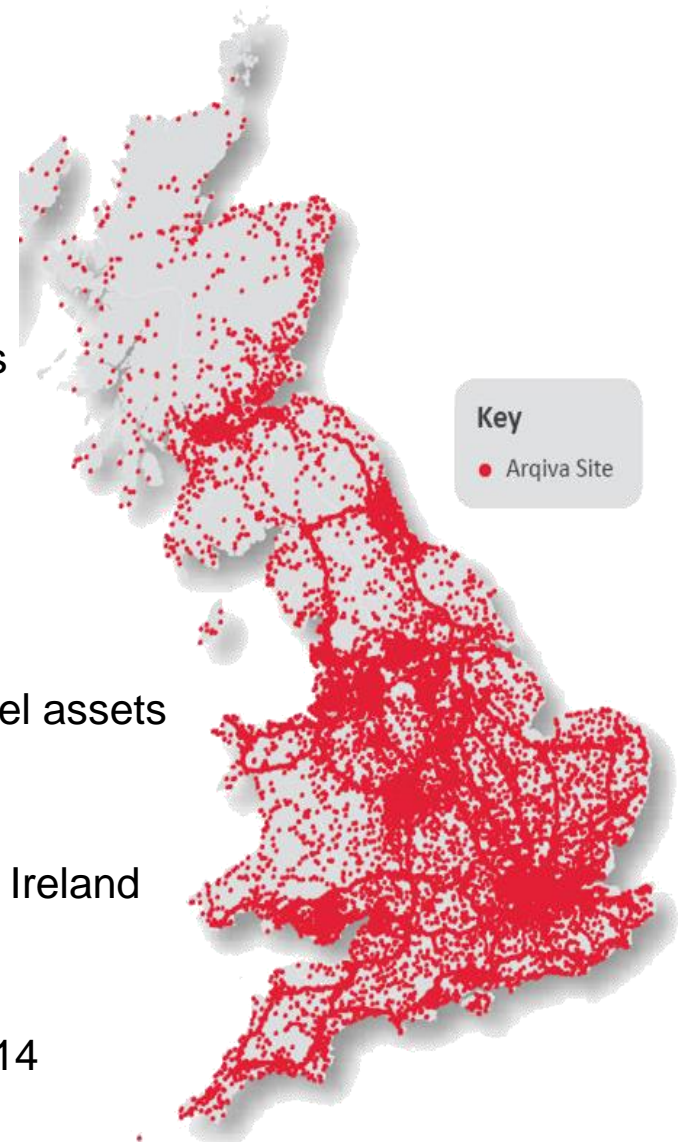
**3,000** sites, **23,000** access points, **200,000** street level assets

### Secure Solutions

Solutions for **>50** Emergency Services in the UK and Ireland

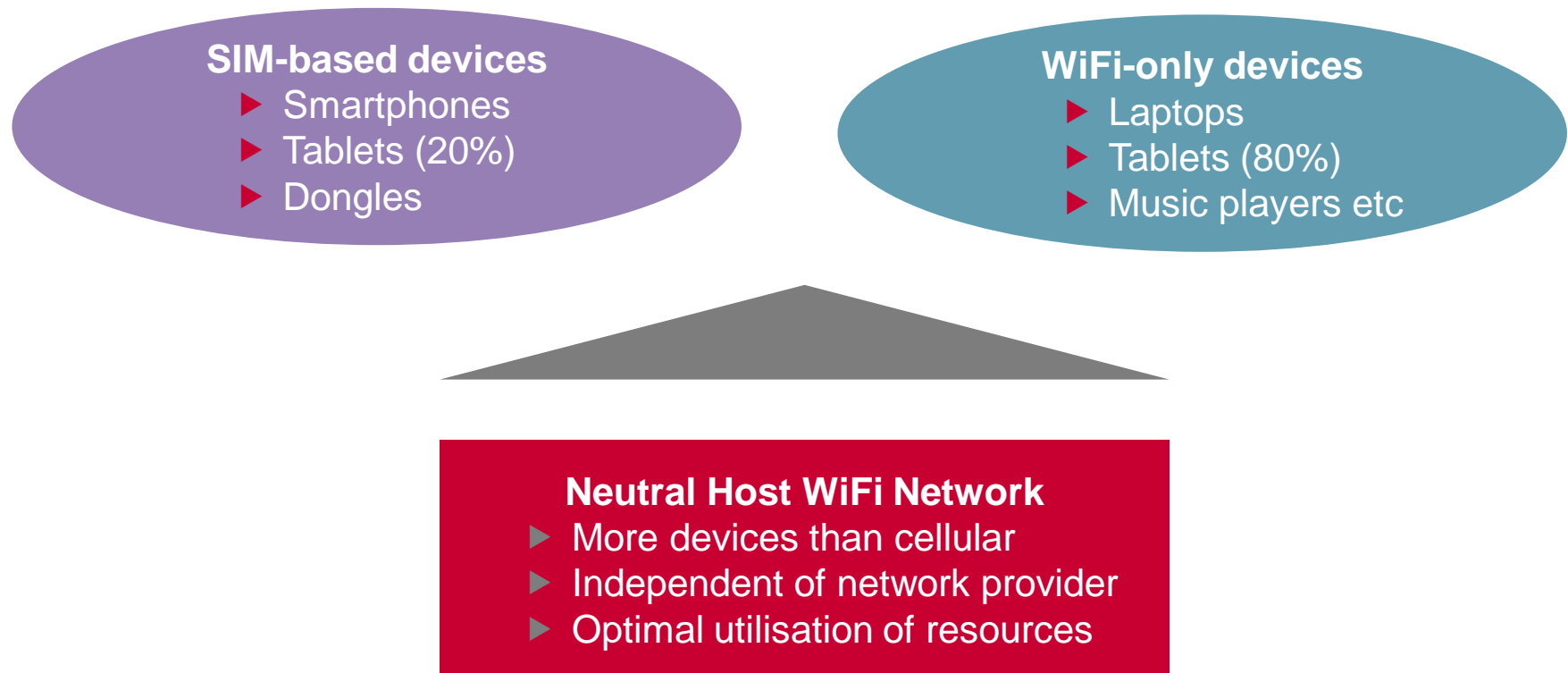
### Smart Metering

**£625m** contract to connect ~9m households from 2014



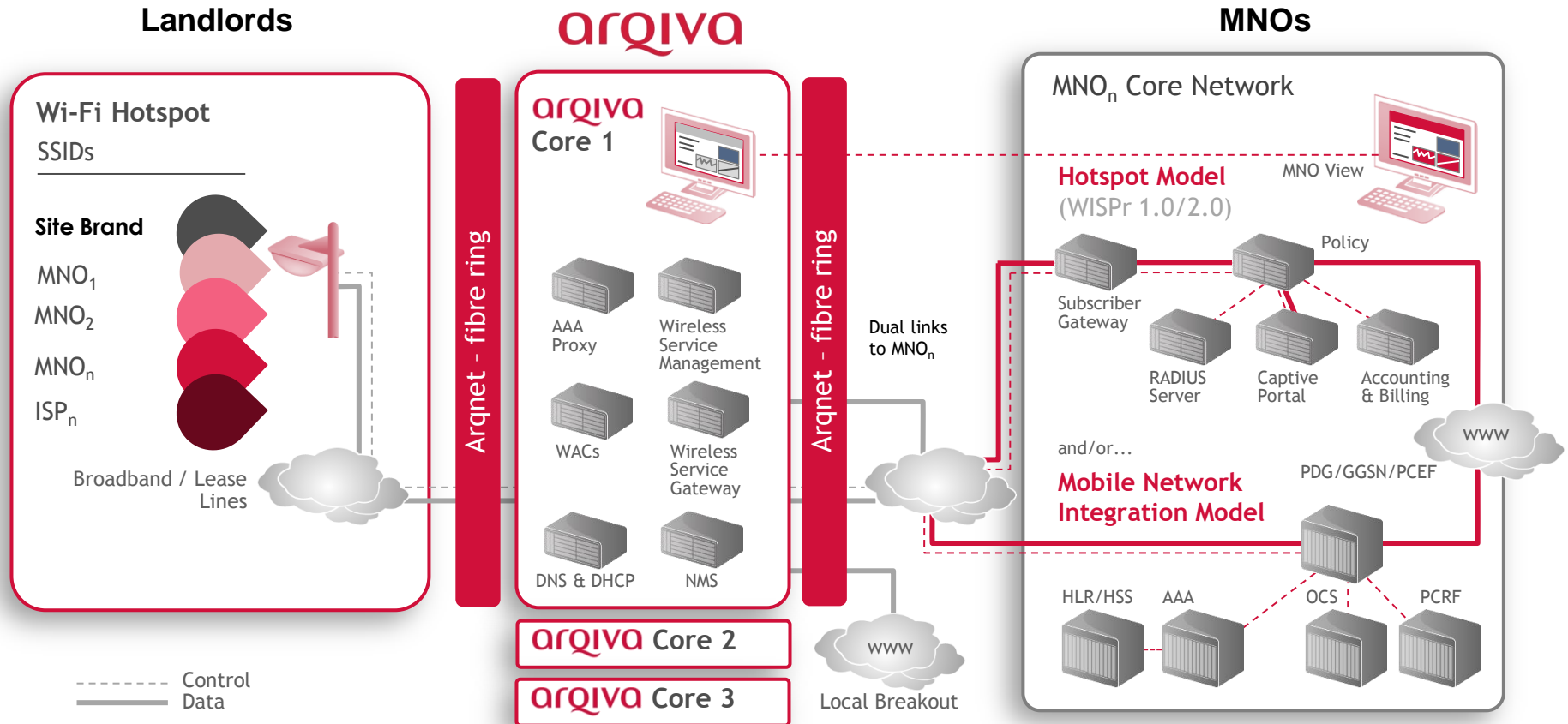
# Neutral Host WiFi is an open access technology for everybody

## Value proposition of neutral host WiFi



# Arqiva offers managed WiFi services to landlords and a wholesale access network to MNOs and other service providers

## Arqiva WiFi architecture



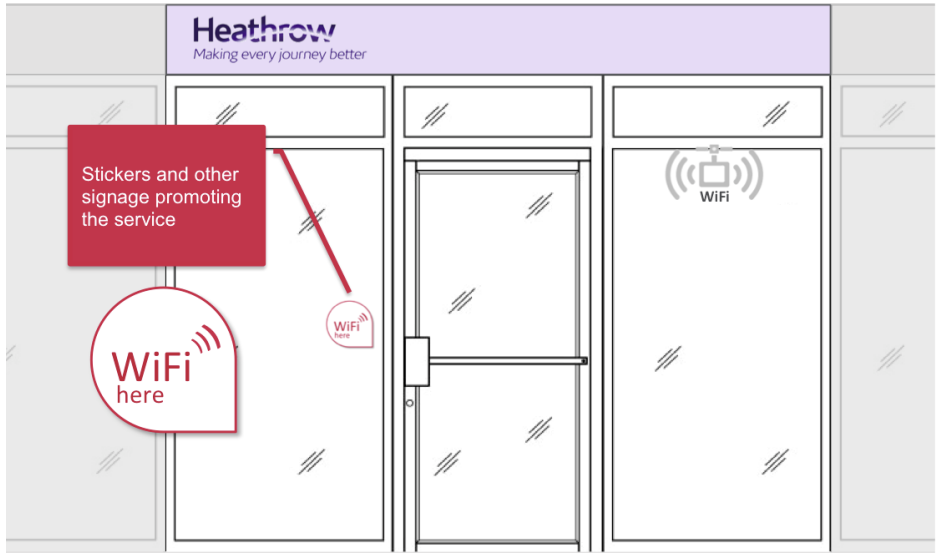


# A seamless user experience is key for further uptake of WiFi

## Seamless WiFi user experience

Illustrative

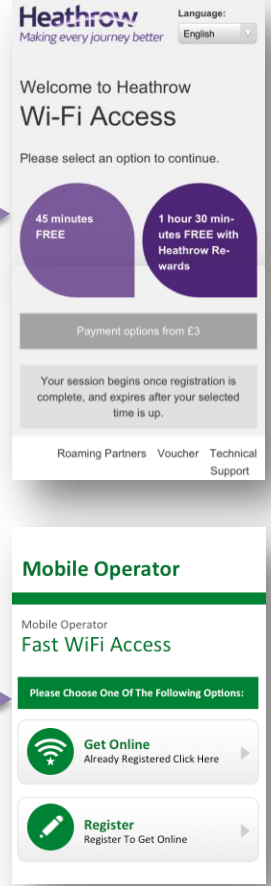
**1** WiFi advertised in key areas around the airport



**2** Select a WiFi network



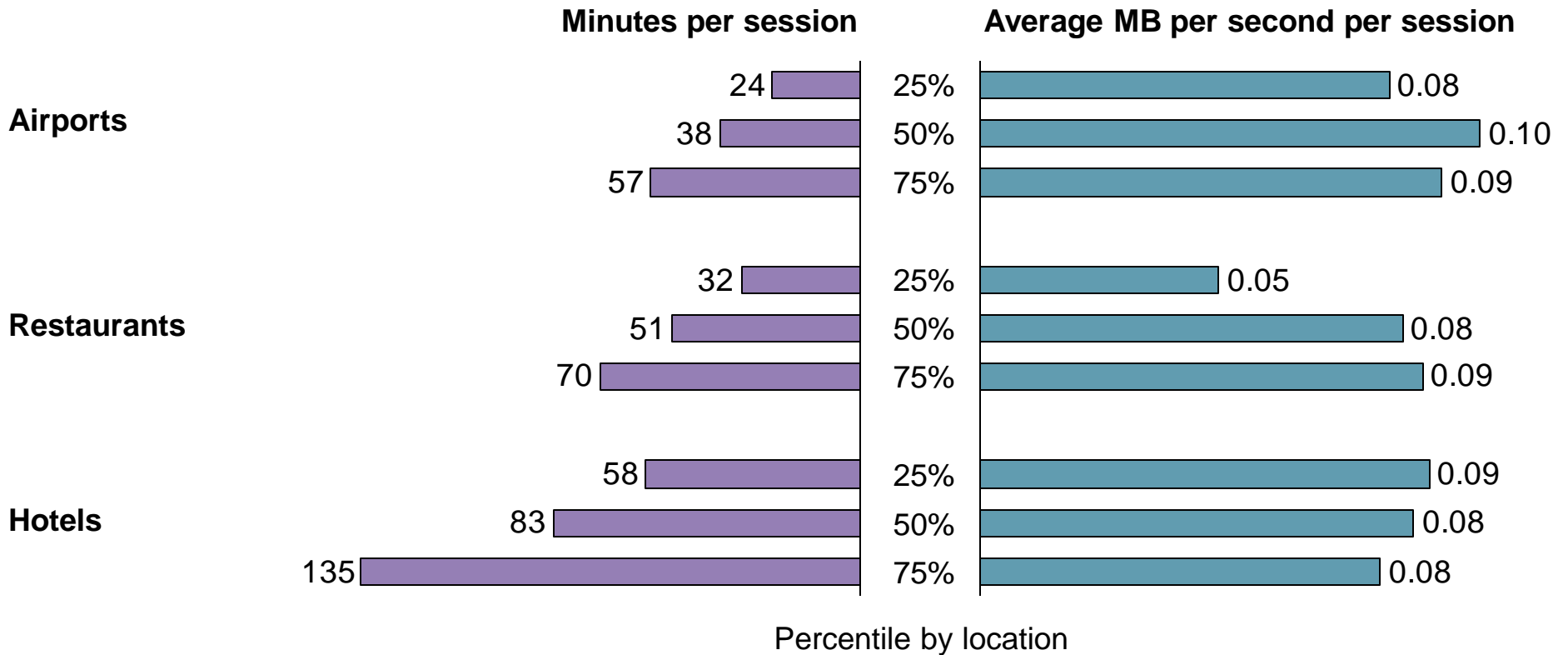
**3** One time registration to get online



# Hotels are the most important “offload” locations, while airports have the highest usage intensity

## Usage statistics from Arqiva WiFi network (Jun '13)

- ▶ All Arqiva WiFi traffic is “true offload”, since in public locations where no “own” network connection is available (vs use at home or in office)



# WiFi and Small Cells are converging towards integrated capacity solutions for MNOs

## Integration of WiFi & Small Cells

- ▶ Operators need to manage coverage and capacity holistically and deploy radio access technologies (RATs) best suited to local requirements (Heterogeneous Networks – **HetNets**)
- ▶ **WiFi** provides an **alternative RAT** where/when cellular frequencies become congested
- ▶ WiFi will be **integrated into all small cell units**
  - Small incremental capex cost vs expensive retrofit
  - Include even if WiFi functionality is initially disabled
- ▶ Implementation of technologies such as **Hotspot 2.0** and **ANDSF**
  - Enables operators to ensure users are always “on the best network”
  - Can make policy decisions on RAT (e.g. different QoS by user group such as PAYG)
- ▶ However, the **radio planning** and **backhaul considerations** are **very different** for small cells vs. WiFi
  - Especially as LTE Advanced and techniques such as Coordinated MultiPoint (CoMP) are deployed

# Key for WiFi & Small Cells are access to optimal locations, cost-effective backhaul and smart commercial models

## Key success factors

### Location

- ▶ Buildings and street level assets such as lamppost and CCTV columns
- ▶ WiFi access points coverage planning, largely self-configuring
- ▶ Integration of Small Cells in macro radio plan

### Backhaul

- ▶ Scalability to reduce duplication: Microwave point-to-point, mesh, satellite
- ▶ WiFi with relatively low requirements
- ▶ Small Cells require tight integration/synchronisation, notably for CoMP

### Commercials

- ▶ Neutral host between landlords and mobile operators (cost & revenue share)
- ▶ Subsidised “free” WiFi as part of landlord services (hotels, coffee shops, pubs)
- ▶ Additional revenues through location based services and advertising

### WiFi user experience

- ▶ Easy identification of correct SSIDs
- ▶ Simple landing pages for “landlord WiFi”
- ▶ Seamless log-on where MNO wholesale: Hotspot 2.0





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# Thank you.

## Connected. Always.

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