

How do you solve a problem like rural broadband?

WITH THE URBAN/RURAL DIGITAL DIVIDE GROWING, PRISCILLA AWDE ANALYSES THE ARGUMENTS TO SEE IF THERE IS A SOLUTION

Although mostly confined to passive elements, network sharing agreements are proliferating, due largely to accelerating pressures to cut costs market will explode the coming years."

Despite all the noise about creating knowledge based economies, reducing global emissions and cutting national and international travel, many governments seem unwilling to invest fully in the one thing capable of delivering them – fibre networks. Especially fibre networks in underserved areas where people live and increasingly work. Instead operators are widely left to fund fibre deployments and, somewhat understandably, have concentrated on low hanging fruit in major cities.

In many developed European telecoms markets, the rural/urban digital divide is growing despite government pronouncements about launching e-government initiatives, stimulating rural economies to increase jobs and relieve pressure off major conurbations. Access to fast broadband networks is as vital to the economic health of rural areas as transport infrastructure.

"In rural areas the socio-economic benefits of fibre are high," explains Hartwig Tauber, director general, the FTTH Council. "Fast speeds and upstream capacity are becoming more important with on-line storage, the cloud, video and applications requiring symmetrical stable speeds - challenging for all but fibre. Only a few years ago the question was 'why fibre' now it's 'when fibre'."

New ways of working and communicating have cut ties to city offices changing market dynamics.

Demand for high-speeds is burgeoning driven by frustrated teleworkers, consumers, content providers, local businesses and public sector organisations. All want the same facilities and access to corporate applications that urban dwellers enjoy. Sophisticated intelligent devices from TVs to tablets are becoming ubiquitous but the networks to which they connect outside cities are hardly fast enough to support their capabilities. Everyone wants access to bandwidth hungry multimedia applications everywhere.

Gabrielle Gauthy, senior VP, public affairs, Alcatel-Lucent suggests there is a better business case for fibre in rural than urban areas: "People queue to get fibre and, where copper is not as good as in cities, there are fewer competing technologies. As an interim measure, FTTN/C combined with VDSL is a good first step to FTTH and a temporary solution for less dense areas."

Most incumbents favour the FTTC/VDSL model, which is faster and more economical to deploy but connection quality varies according to the length of the local loop which differs considerably by region and country.

So hungry are rural inhabitants for broadband connectivity that the take-up rate is rising and they appear willing to pay the price. That price, so far mostly paid by telcos, is in building FTTH/B/C. However, significant capex, thin margins, low take rates and delayed ROI have made the business case for building rural FTTH/B/C networks too challenging.

"The ROI is not such a big problem because the approach is different. Networks are used by several service providers in a utility model; the main players are utilities or municipalities," continues Tauber. Wanting faster roll out,

municipalities, local communities and utility companies are building, paying for and sometimes running fibre networks. Competitive cablecos are delivering symmetrical high-speeds and, together with altnets, challenging incumbents.

Governments are starting to realise that FTTH/B/C can stimulate local economies and support rural businesses thereby increasing the number of jobs. Rolling out the efficient, cost effective smart e-government services including health, education and culture they want depends on fibre.

Recognising they cannot leave it to operators to meet the entire cost of FTTH/B/C deployments, several European governments recently announced new funding either through direct grants or Public Private Partnerships (PPPs), which together with JVs are popular.

"Governments can stimulate demand by increasing awareness, investing in end user devices and increasing confidence that revenues will be realised in future. If governments have a stake in PPPs they underwrite some market risk," explains Matt Yardley, principal analyst, Analysys-Mason. "At the heart of all models is how to handle high market risk and demand uncertainty. There is considerable activity throughout Europe but very different and fragmented policies. Ultimately the solution is not to create numerous small scale telcos."

Local and national European governments are expected to make €50 billion available for rural broadband



projects. Telcos, utility and construction companies, co-operatives and municipalities can bid for funding from the Connecting Europe Facility. Wanting superfast rural broadband to support a single market for digital public services, e-government and promote local job opportunities, the EU is making €9.2 billion available for broadband projects. Although it may not go far when shared between the 27 member countries, it is expected to attract more investment: an estimated €6-15 for every euro.

The EC's Digital Agenda wants all households to have a minimum 30Mbps by 2020 and over 100Mbps for half the population. "The most important first step is to connect public sector buildings which costs less to supply, yields higher returns, supports local socio-economic benefits and stimulates broadband demand," believes Charlie Davies, principal analyst, Ovum. "There will be a mix of public/private finance and communities collaborating on civil access works.

"There is still disagreement about the best approach – a big tender from one regional supplier or smaller, municipality/local community based networks but everyone wants to avoid differing standards and interoperability problems," she continues. "FTTH only makes sense where there is one infrastructure provider but throughout Europe, local areas are funding fibre deployments, creating a clash between regional push for fast FTTH deployment and parallel moves by operators building networks and sharing infrastructure."

Most agree a single open access fibre network, rather than a host of smaller systems run by numerous players, is the optimum solution. "Fragmentation is a significant problem, each country is different and there is no common vision," explains Gauthey. "In most countries incumbents still own infrastructure. Some have taken a radical approach, suggesting fibre projects should be financed by many and treated as a utility."

Fibre is happening but if it does not accelerate plans, Western Europe may find itself on the wrong side of the digital divide globally and regionally as developing telecoms markets leapfrog to fibre. Walter Goldentis, CTO at Austrian operator A1 cautions: "The Digital Agenda is a political statement with no real incentive for operators to add fibre but it's important to push new technology to keep Europe competitive."

Cablecos, offering superfast speeds, already pose a competitive threat and spur incumbents to accelerate rural fibre deployments. Such is the case in Holland where cable is ubiquitous; French Numericable is influencing operators' fibre projects and Britain's Virginmedia has a similar effect. German cablecos offer up to 120Mbps – faster than Deutsche Telekom, which is buying fibre capacity from municipalities.

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incentive for operators to add fibre ”

Altnets are similarly driving competition while local governments and utility companies are building very local systems and laying ducts when streets are opened. Some small communities are paying to dig trenches others are stringing fibre on poles for speedier, less costly, deployment.

"There are multiple layers of competition," explains Mike Galvin, MD, next generation access, Openreach. "Operators can enter the market via LLU, wholesale, service provider level as VNOs or at the service level. Although cablecos are credible competitors and more serious than in the past, they have no wholesale arms."

National initiatives promote deployments in France and Britain; Italy has local fibre plans where, like France, public investment banks help local governments fund infrastructure. In Spain, regulatory reform and competition are expected to increase fibre deployment and Scandinavia deployed local fibre long ago.

The French government wants 10 million houses passed by FTTH/B by 2012 and four million subscribers but fibre deployment and uptake is still slow outside urban areas. Working with local authorities Numericable offers fibre to

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4.4 million houses and supplies wholesale passive fibre. Operators FT-Orange and SFR also provide wholesale access and collaborate to deliver rural broadband especially where their networks are duplicated and underused.

Wanting 90 percent coverage by 2017, the British Government's BDUK (Broadband Delivery UK), initiative allocated £530 million for broadband rural networks – compared to a recent announcement of £100 million for superfast broadband in four major cities. Eventually core WDM (Wavelength Division Multiplexing), technology maybe be adapted for access networks allowing altnets to use different wavelengths thereby speeding competition. Investing £2.5 billion in fibre build, incumbent BT aims to reach two thirds of UK premises by end 2015. It is exploring PPPs to build regional FTTC using high-speed copper for the final drop and may deploy mobile/satellite or even TV white spaces to reach the final 10 percent of houses.

There are numerous possible scenarios suggests Galvin: "Some communities dig trenches for BT to lay

fibre; putting amplifiers on copper lines increases speeds and new technologies, like pole top DSLAMs in rural areas, allow power feeds from houses – cheaper than active fibre." Disputes about the cost of access to BT's pole/duct infrastructure resulted in price cuts.

FTTH Council statistics highlight traditional problems: take rates vary by country with 62 percent in Norway, dropping to 10 percent in France, five percent in Switzerland and less than one percent in Britain. Municipalities/utilities accounted for 12 percent of houses reached in June; altnets/MSOs passed 55 percent leaving incumbents supplying 33 percent.

"The business case for rural fibre is challenging regardless of who is investing," says Matthew Hare, CEO of Gigaclear. "Governments can make the environment more favourable, encourage substantial investment and prime the market to get initiatives rolling. The key driver is competitor activity and communities recognising fibre is transformational – within 20 years there will be little copper left." ■