CSCC | Comisiwn Seilwaith Cenedlaethol Cymru
NICW | National Infrastructure Commission Wales

Digital communications infrastructure in Wales

The challenges and opportunities for the future of digital connectivity in Wales

Professor Tom Crick MBE
Swansea University
@ProfTomCrick

#5GWalesUnlocked

CSCC | Comisiwn Seilwaith Cenedlaethol Cymru
NICW | National Infrastructure Commission Wales

National Infrastructure Commission for Wales

December 2020

CSCC | Comisiwn Seilwaith Cenedlaethol Cymru
NICW | National Infrastructure Commission Wales

Digital Communications Infrastructure in Wales

Report and recommendations of the National Infrastructure Commission for Wales

CSCC NICW Comisiwn Seilwaith Cenedlaethol Cymru National Infrastructure Commission Wales

How does Wales compare: fixed broadband?

UK	Wales
Commercial 65% coverage for superfast (BT expects 75% fibre) New fibre operators plan 27 million households with fibre	**Commercial** **<50% coverage for superfast** (BT expects 64% fibre) Ogi/Beacons Telecom plan **~200k** households
Public funds ~5% HHs still unable to get 30 Mb/s ~ 15% get fibre to the home Currently offering fibre vouchers of £1500/HH	**Public funds** ~3-5% HHs (60k) still unable to get 30 Mb/s ~ 15% get fibre to the home Latest build costs **~£2300**/HH and **offering fibre vouchers of £3500/HH**

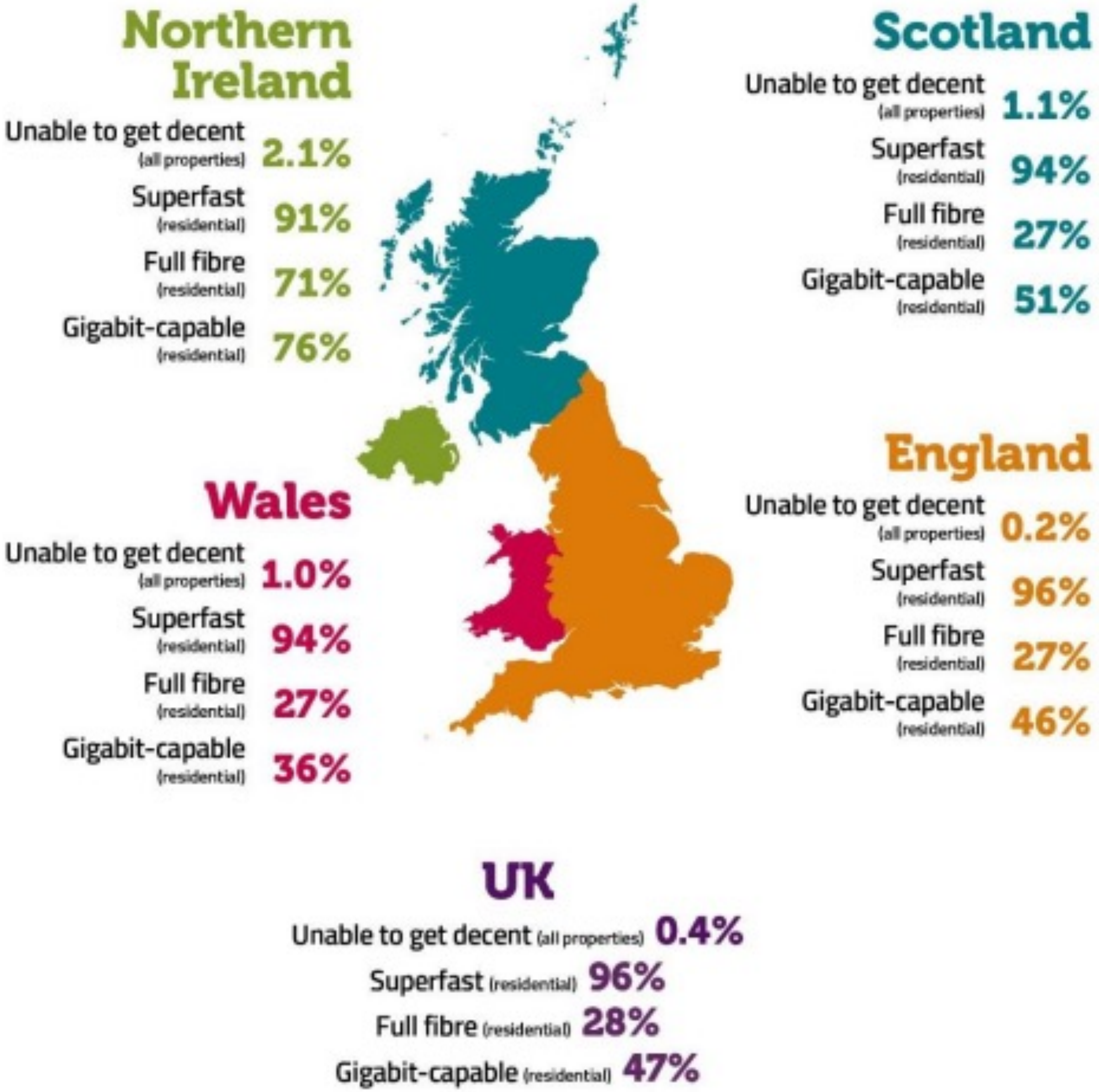
Wales has done well with superfast broadband, but we rely more heavily on public subsidy which, as costs for fibre rise, will not be a sustainable strategy.

CSCC NICW

Comisiwn Seilwaith Cenedlaethol Cymru

National Infrastructure Commission Wales

Summary of broadband coverage across UK



Source: Ofcom Connected Nations 2021 report

CSCC NICW Comisiwn Seilwaith Cenedlaethol Cymru National Infrastructure Commission Wales

How does Wales compare: mobile broadband?

UK	Wales
4G Coverage today 67% of landmass covered by all four operators (84% by at least one) 80% of households have service from all operators (99% from at least one)	**4G Coverage today** **58% of landmass covered** by all operators (81% from at least one). Only ~50% of landmass in Ceredigion covered 73% of households have service from all operators. Only **75% of households in Ceredigion** have access from at least one
Shared Rural network 95% of landmass covered by all four operators by end 2025 5G target?	**Shared Rural network** **80% of landmass c**overed by all four operators by end 2025 5G target?

Although most Welsh households already get 4G, many have no choice of operator and availability in rural Wales is low. UK Shared Rural Network will see some improvement in 4G.

UK

4G outside premises: (MNO range)	99%+
4G inside premises: (MNO range)	90%-95%
4G geographic: (MNO range)	79%-86%
4G total not spots:	8%
Voice and text total not spots:	4%

Scotland

4G outside premises: (MNO range)	97%-99%
4G inside premises: (MNO range)	90%-95%
4G geographic: (MNO range)	57%-73%
4G total not spots:	18%
Voice and text total not spots:	11%

Northern Ireland

4G outside premises: (MNO range)	97%-99%
4G inside premises:(MNO range)	78%-92%
4G geographic:(MNO range)	87%-92%
4G total not spots:	3%
Voice and text total not spots:	Less than 1%

England

4G outside premises: (MNO range)	99%+
4G inside premises: (MNO range)	91%-95%
4G geographic: (MNO range)	92%-94%
4G total not spots:	2%
Voice and text total not spots:	Less than 1%

Wales

4G outside premises: (MNO range)	96%-99%
4G inside premises: (MNO range)	85%-93%
4G geographic: (MNO range)	72%-84%
4G total not spots:	10%
Voice and text total not spots:	5%

Source: Ofcom Connected Nations 2021 report

CSCC NICW
Comisiwn Seilwaith Cenedlaethol Cymru
National Infrastructure Commission Wales

Current outlook for UK and Wales

- UK target was 100% ‘gigabit’ coverage by 2025 until last year’s Spending Review, when it was reduced to ‘a minimum of 85%’. **Targets unlikely to be met**.

- 100% coverage requires public subsidy of significantly more than the £5bn budgeted (reduced to £1.2 bn last month?) **Wales could cost £1.3bn (compared to ~£300m for superfast)** and total cost could be £6-9bn.

- Many Welsh households likely to be at the end of the queue, given high costs and lack of competition in Wales. Some may be helped by the Broadband USO scheme.

- **Many Welsh HHs likely to be waiting 8-10 years** before seeing any significant improvement in their broadband **if no other action is taken**

Recommendations: commercial roll out

- **Make Wales a more attractive place for commercial roll out**
  - Replace All Wales Digital Infrastructure Group with a '**Barrier Busting Taskforce**', led by senior WG official, with deadlines for making Wales a better place to invest
  - Update planning guidance and **align rules with rest of UK**, implement new Code and require fibre in new build properties
- **Review and simplify existing voucher schemes**
  - Co-ordinate with new UK Gigabit Take Up Advisory Group
  - Avoid 'voucher inflation' (**cap at £3500 per HH**)

CSCC NICW
Comisiwn Seilwaith Cenedlaethol Cymru
National Infrastructure Commission Wales

Recommendations: home broadband

- **Prioritise 4G/5G home broadband until fibre to the home arrives**
  - In contrast to fixed broadband, Wales is **behind in mobile and policymaking has been inadequate**
  - Mobile infrastructure is underutilised throughout the UK (**only 3% of all traffic carried over mobile**) and UK Government **targets for 5G are unambitious** (‘majority by 2027’)
  - **Scotland’s 5G strategy** offers a model for Wales

CSCC NICW Comisiwn Seilwaith Cenedlaethol Cymru National Infrastructure Commission Wales

Benefits of mobile home broadband

- **Faster to deploy** than fixed fibre to the home, at a **fraction of the cost**, and with rapid adoption
- Will not deliver gigabit speeds, but **can deliver significant improvements of existing service (at least 100 Mb/s**) until fibre to the home arrives
- Investments can then be **reused for new 5G services** (IoT) as those applications mature
- 4G and 5G home broadband **already used in many other countries** (20% of HHs in NZ, also US, Italy, Switzerland, Nordics)

CSCC Comisiwn Seilwaith Cenedlaethol Cymru
NICW National Infrastructure Commission Wales

Next steps

- Welsh Government should use all levers at its disposal to gain **commitment from industry to go beyond existing UK Shared Rural Network targets for mobile coverage**
  - Ensure Wales has **equal priority with rest of UK** in the Shared Rural Network and
  - Consider **further changes to planning regime** (beyond parity with the rest of UK) **in return for additional commitments from industry** to extend 4G and commit to 5G coverage, focussing on households not landmass
  - **Divert public funds from fixed broadband** to extend mobile broadband in Wales, building on the £500m already contributed by UK Government to the SRN

CSCC NICW | Comisiwn Seilwaith Cenedlaethol Cymru | National Infrastructure Commission Wales

Discussion points

- Specificity of challenge (and opportunity) for Wales;
- Emerging impact of COVID-19 on society and the economy (e.g. Openreach network usage stats from 2020);
- Broader view on importance of digital and data infrastructure investments;
- Democratising networks and infrastructure, mixed models, private networks;
- Importance of citizen-centred digital infrastructure investments;
- Diverse use cases, framed around “grand challenges” e.g. City and Growth Deals;
- Flexibility and funding for hybrid solutions, not just “one size fits all” approach;
- Pushing Wales as a “digital testbed”.