

The BBC logo consists of the letters 'B', 'B', and 'C' each enclosed in a white square, which are then arranged horizontally within a dark green rectangular background.

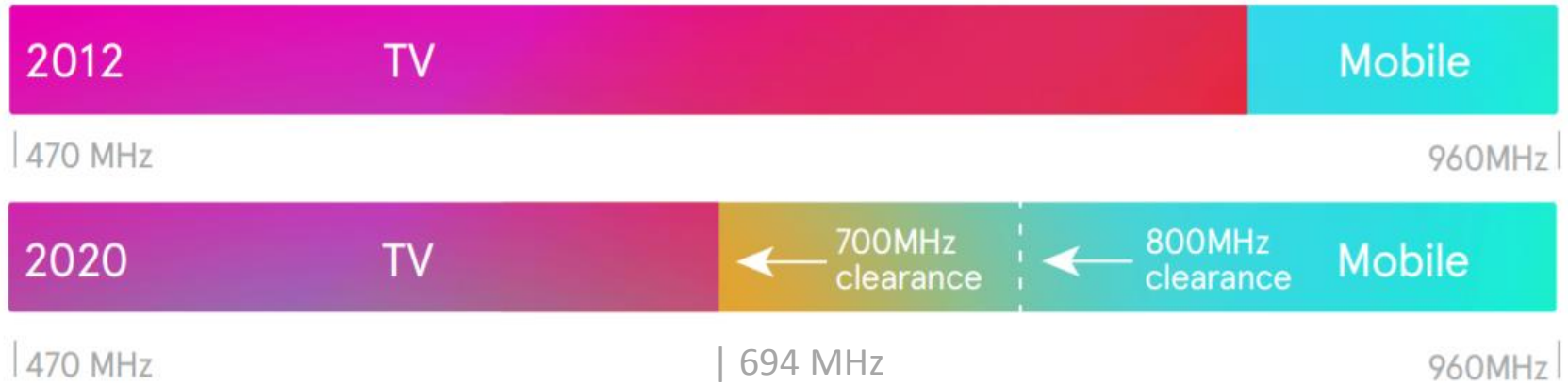
Distribution &
Business Development

Making the Most of the Digital Dividend

David Hemingway
4 July 2018



The Impact of Clearance on Broadcasters

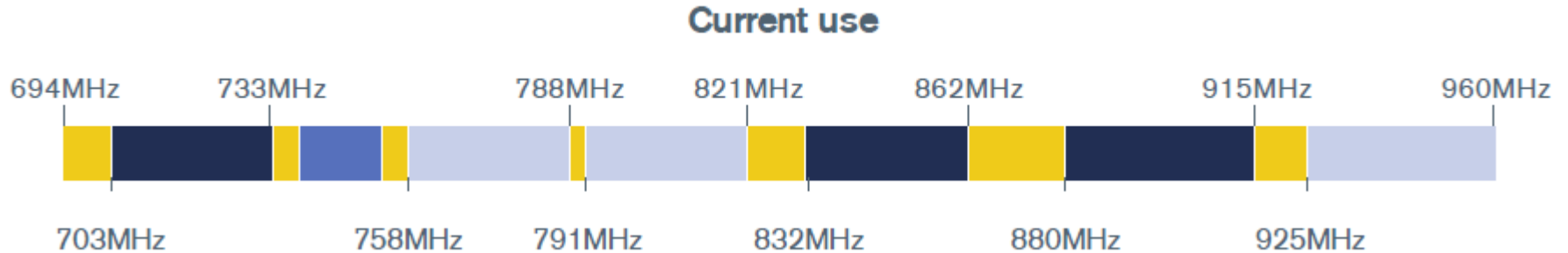


An evolving (TV) picture

Dates	Number of muxes	Number of services	DTT spectrum utilised (MHz)	Spectrum deployed (MHz)	Number MHz per service	Efficiency increase from 1998
1996	Analogue	5	470 – 854	368	73.6	-
1998	6	24	470 - 854	368	15.3	X 1.0
2002	6	32	470 – 854	368	10.5	X 1.4
2012	6	48	470 - 790	312	6.5	X 2.4
2017	9	89	470 - 790	312	3.5	X 4.4
2020	7	83	470 - 694	224	2.7	X 5.7

Source: Digital UK

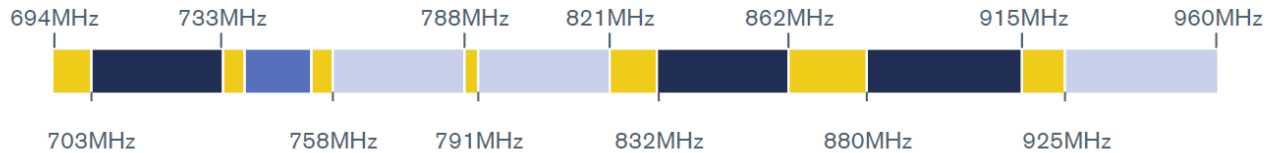
How has this dividend been used?



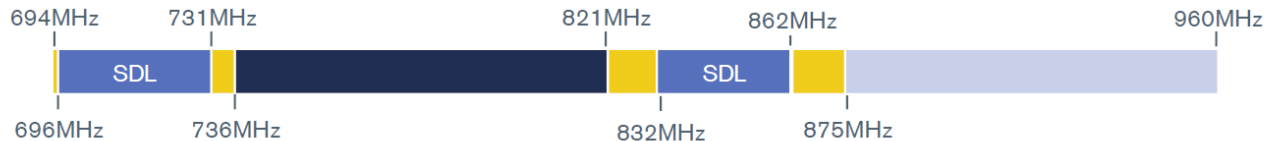
- Only 95(/266) MHz dedicated to downlink¹
- Cisco predicts that by 2021, 82% of all IP traffic will be video²
- Are there alternative ways this spectrum could be used to:
 - Make it more suitable for downlink-dominated use?
 - Use more of it, more efficiently?

Three options

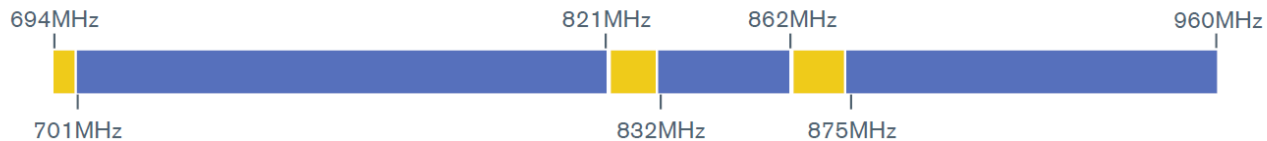
Current use



Option 1 – Large FDD band



Option 2 – Three TDD bands



Option 3 – One TDD band



What's to be gained?

Defragmentation option	Mobile/PPDR/ GSM-R spectrum	Increase in DL capacity ³³
Current situation (post 700MHz)	218MHz	-
1 – Large FDD band	235MHz	~25%
2 – Three TDD bands	235MHz	~60%
3 – One TDD band	250MHz	~70%

- Significant increase in DL capacity under any option
- Large contiguous spectrum – obvious 5G benefits
- Cost reductions from operating fewer bands
- None of these are easy options, but neither is a further “salami slicing” of broadcasting spectrum
- These have to be long-term options – implementation would need to be carefully planned and is unlikely to be possible before 2030

Next steps?

- Regulatory discussion – in RSPG and CEPT
- Further examination of the costs and benefits
- Opportunity exists at WRC-23 for any required action at ITU level
- More discussion – it's in everyone's interest to maximise the efficient use of spectrum

Thank you!

david.hemingway@bbc.co.uk

@HemingwayDM

