



DSA Global Summit

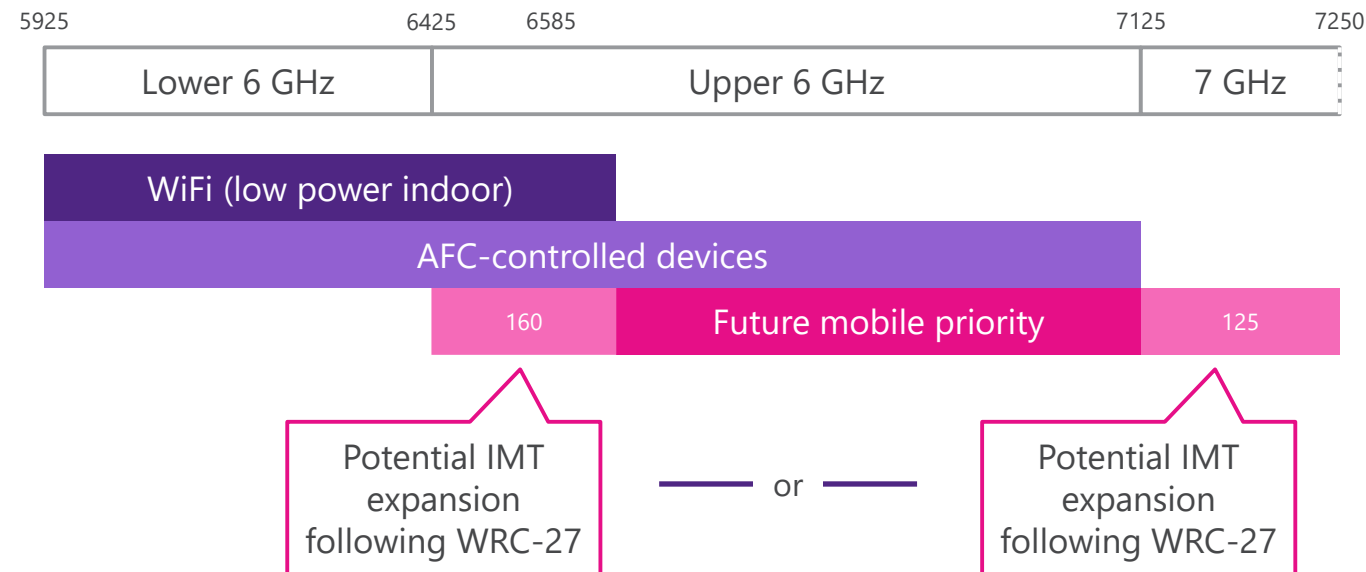
The economic impact of upper 6 GHz band configurations

21 October 2026

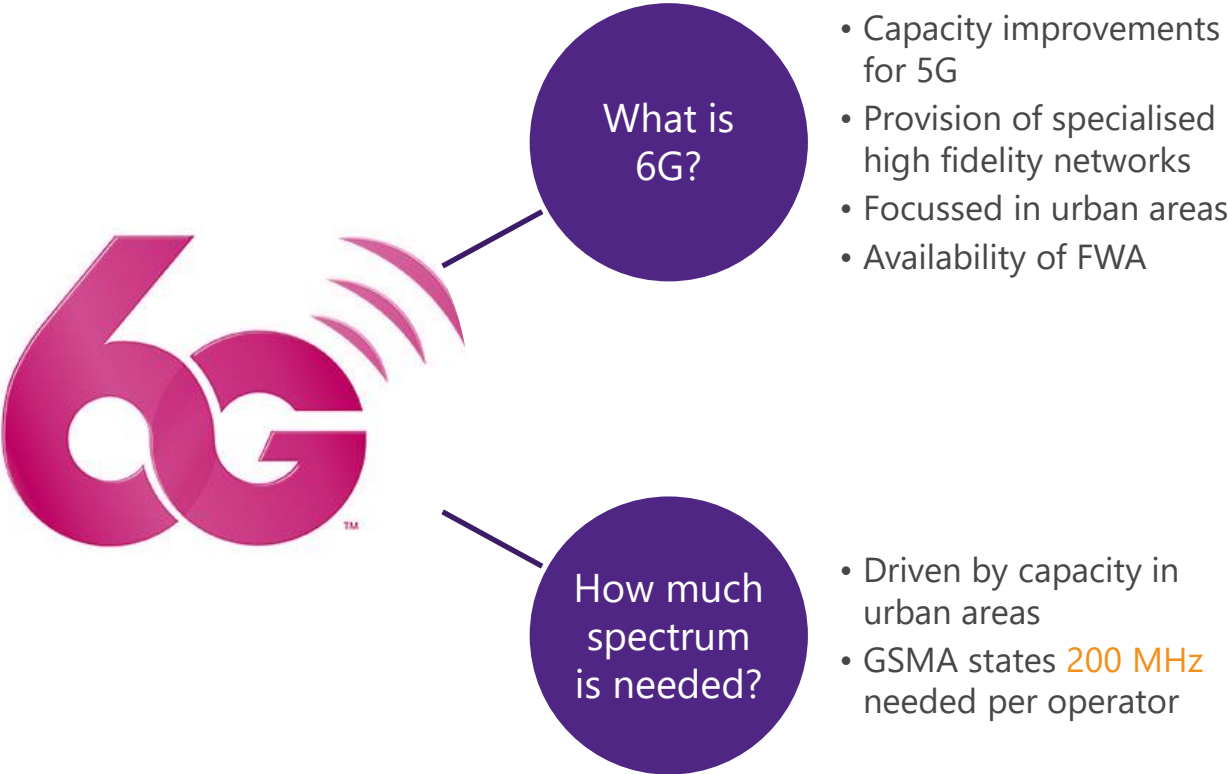
Tim Miller, Plum Consulting

The long-term future for IMT in the upper 6 GHz band

- RSPG Opinion allocates 540 MHz to mobile now, with potentially more to come
 - In 7125-7250 MHz if identified by WRC-27
 - In the lowest part of the upper 6 GHz band if no identification made by WRC-27
- UK consultation runs on similar lines but includes information on AFC control



Spectrum requirements for 6G

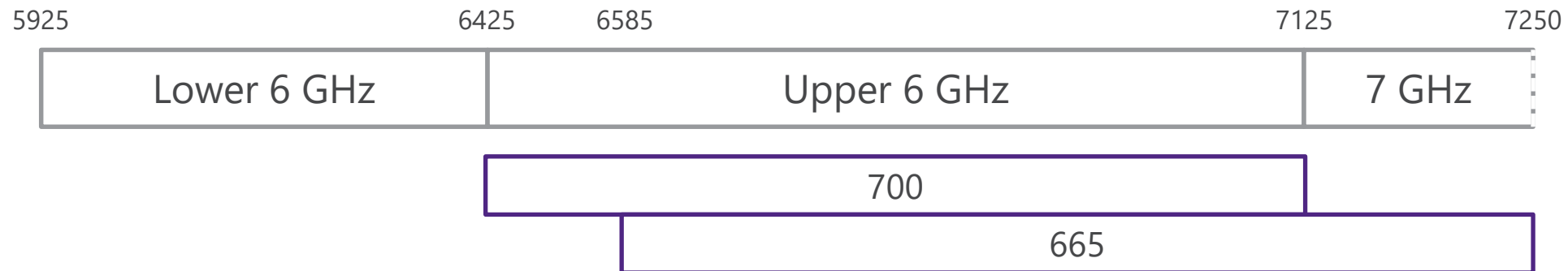


Where will 6G be needed?		
Ultra high definition video	15-25 Mbps	In reality 5G networks can suffice; even 8K video at 25 Mbps should be possible, although virtually never used.
Cloud gaming	25 Mbps, latency <20ms	Requirements for low latency, although radio latency is a small part of network latency.
Generative AI	40 Mbps in small bursts	Use cases requiring high bandwidths – such as video editing, AR video annotation, or translation services – will be specialised.

To be conservative we have assumed a need for 200 MHz per operator based on GSMA figures – these have not been assessed or validated, and may overestimate demand

Applied maths: is there room for more than 3×200 MHz ?

- Assume that each operator needs 200 MHz
 - Two operators would need 400 MHz
 - Three operators would need 600 MHz
 - Four operators would need 800 MHz
- The RSPG advocates a maximum of 700 MHz (if the full upper 6 GHz is identified)

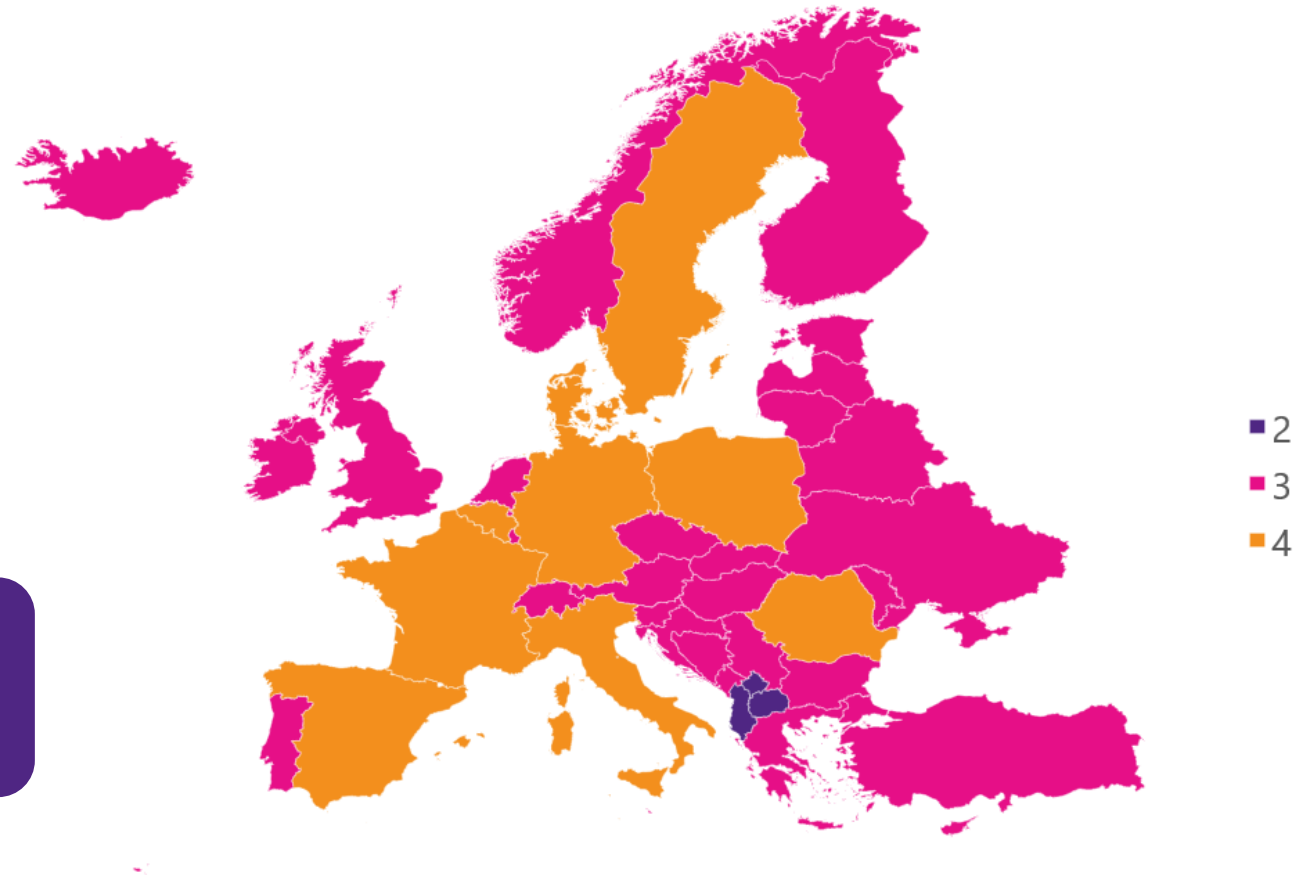


Therefore there is not enough spectrum for four operators to have 200 MHz each

European market structures: how many operators are in each country?

- Vast majority of countries have three operators or less
- Only nine European countries currently have more than three operators
- Increasing movements towards consolidation – such as in France

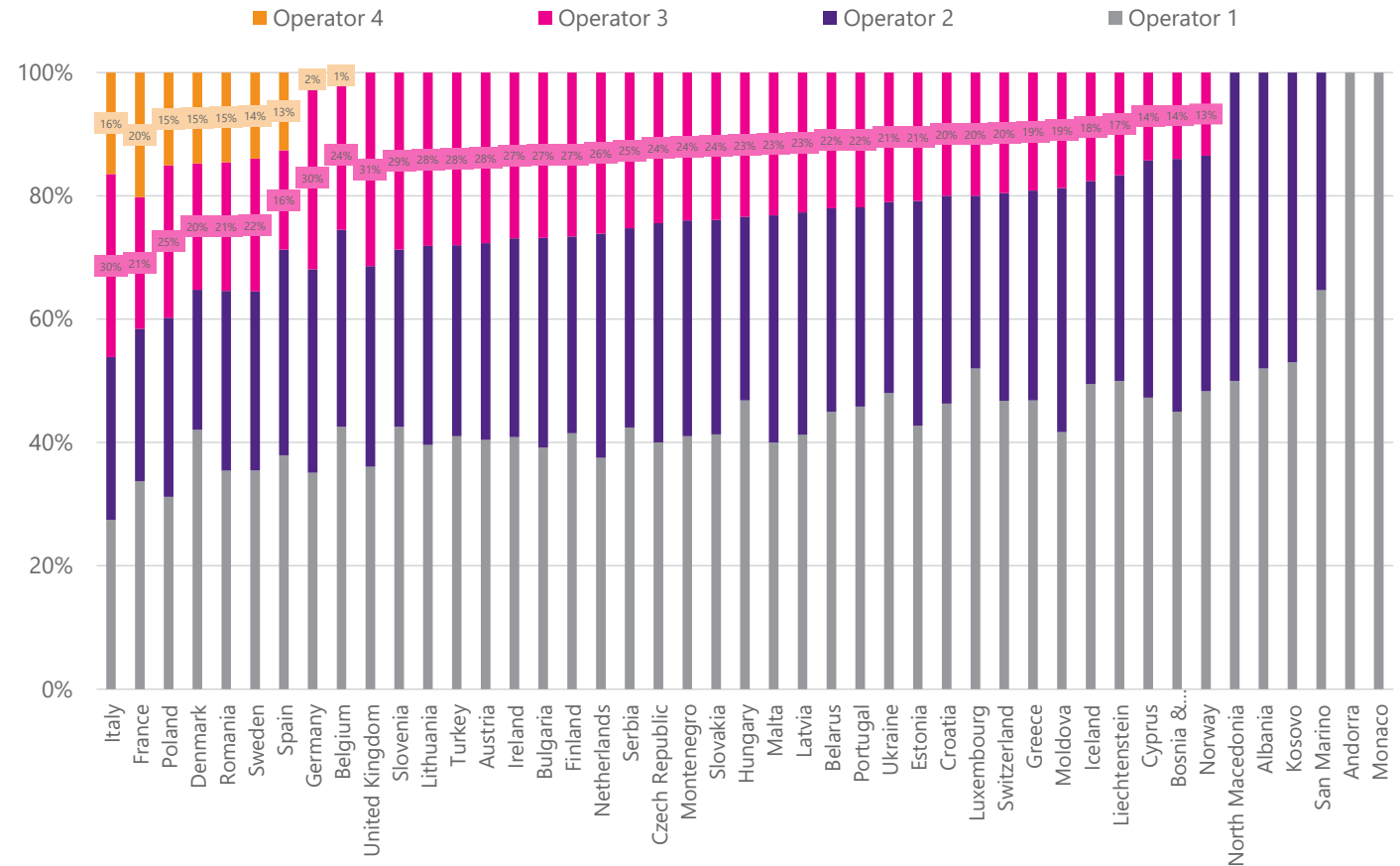
For the majority of European countries, 600 MHz will accommodate all mobile network operators



European market shares

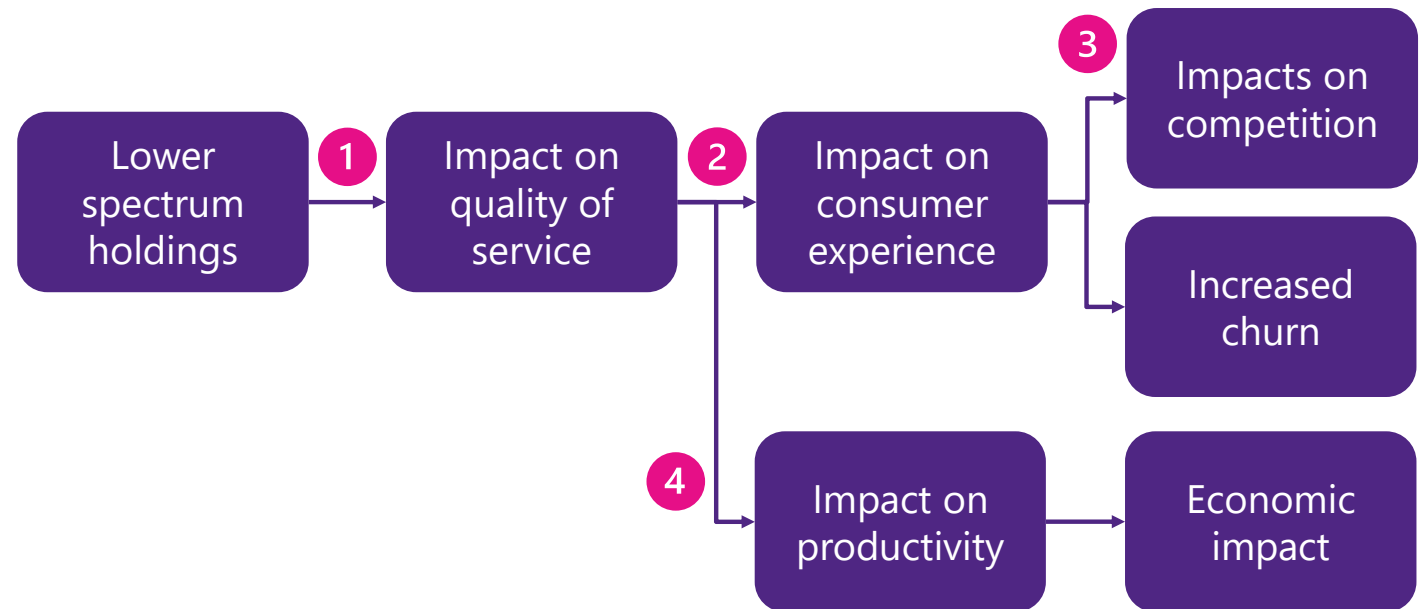
- In countries with four operators, it is typical to have two larger and two smaller
 - France and Italy are exceptions
- How can this be considered when allocating spectrum?

Regulators should reflect market shares in spectrum holdings – especially for capacity



Analytical framework

- In countries with four operators, the two smallest could share 200 MHz
 - Through RAN and spectrum sharing agreements
 - By having 100 MHz each
 - Through a third party lease
- What impacts does this have?
- Does IMT need more than 600 MHz?



Results of analysis

4

Lower service quality would lead to negative macroeconomic impact

3

Negative impacts on competitiveness of smaller operators if consumer experience worsened

Overall consumer welfare reduced with lower competition

2

Consumer experience is directly related to network service quality

BUT

1

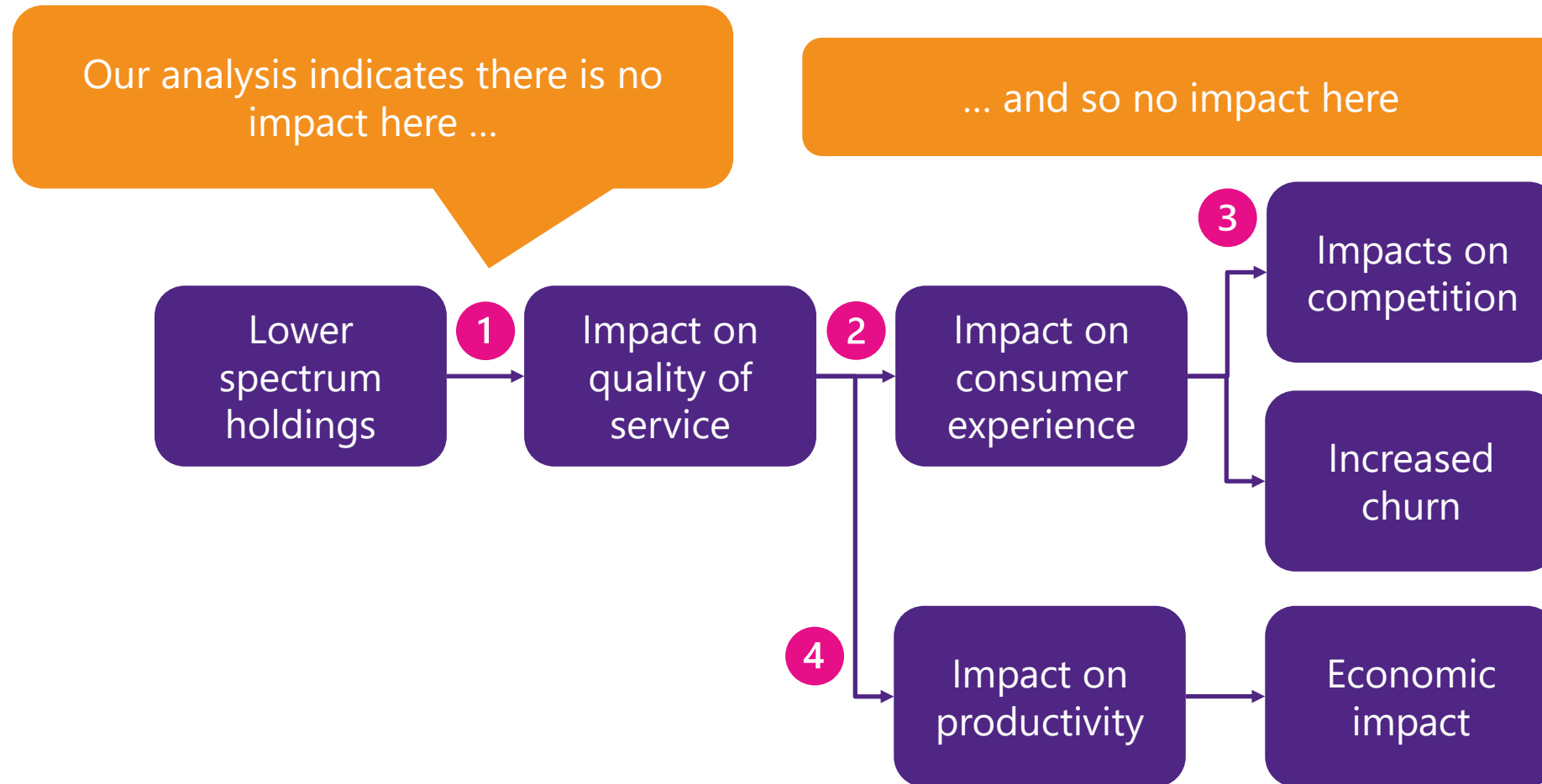
For capacity spectrum, capacity is linearly related to spectrum bandwidth

No clear indications of capacity requirements but 6G efficiency and unused 5G capacity (and mmWave) should cover

Some minor impacts on latency from 100 MHz blocks, but this is a small part of total latency

RAN and spectrum sharing could overcome any technical issues or efficiency losses

Sharing spectrum between smaller operators has no impact



Conclusions

1

For the majority of European countries, all operators can use 200 MHz

2

In nine (soon to be eight) countries, smaller operators can share 200 MHz blocks with no impact on service quality

3

There is no need for more than 600 MHz of spectrum to be identified for IMT

4

Regulators should optimise spectrum for all technologies, aligned with the RSPG Opinion

- If WRC-27 identifies 7125-7250 MHz to IMT, if 600 MHz is given to European operators this will allow an additional 160 MHz for other technologies, and an extra 65 MHz to sort coexistence issues

Report available now

Tim Miller
tim.miller@plumconsulting.co.uk
+44 7904 971056

