UK Communications Review: Spectrum.

Mark Falcon, Three.

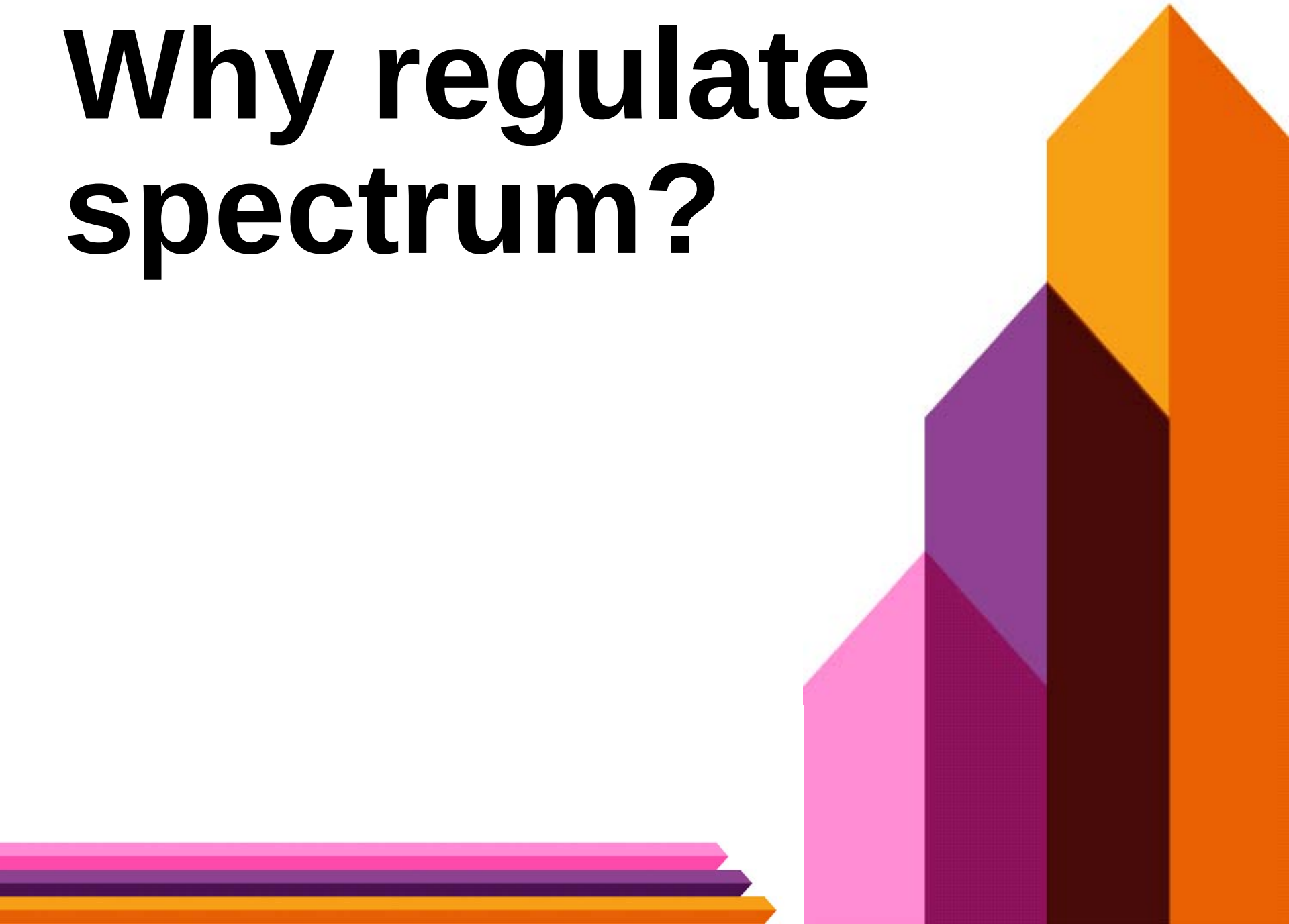
IIC UK Chapter Event, 13 Dec 2011.

Three.co.uk

About Three.

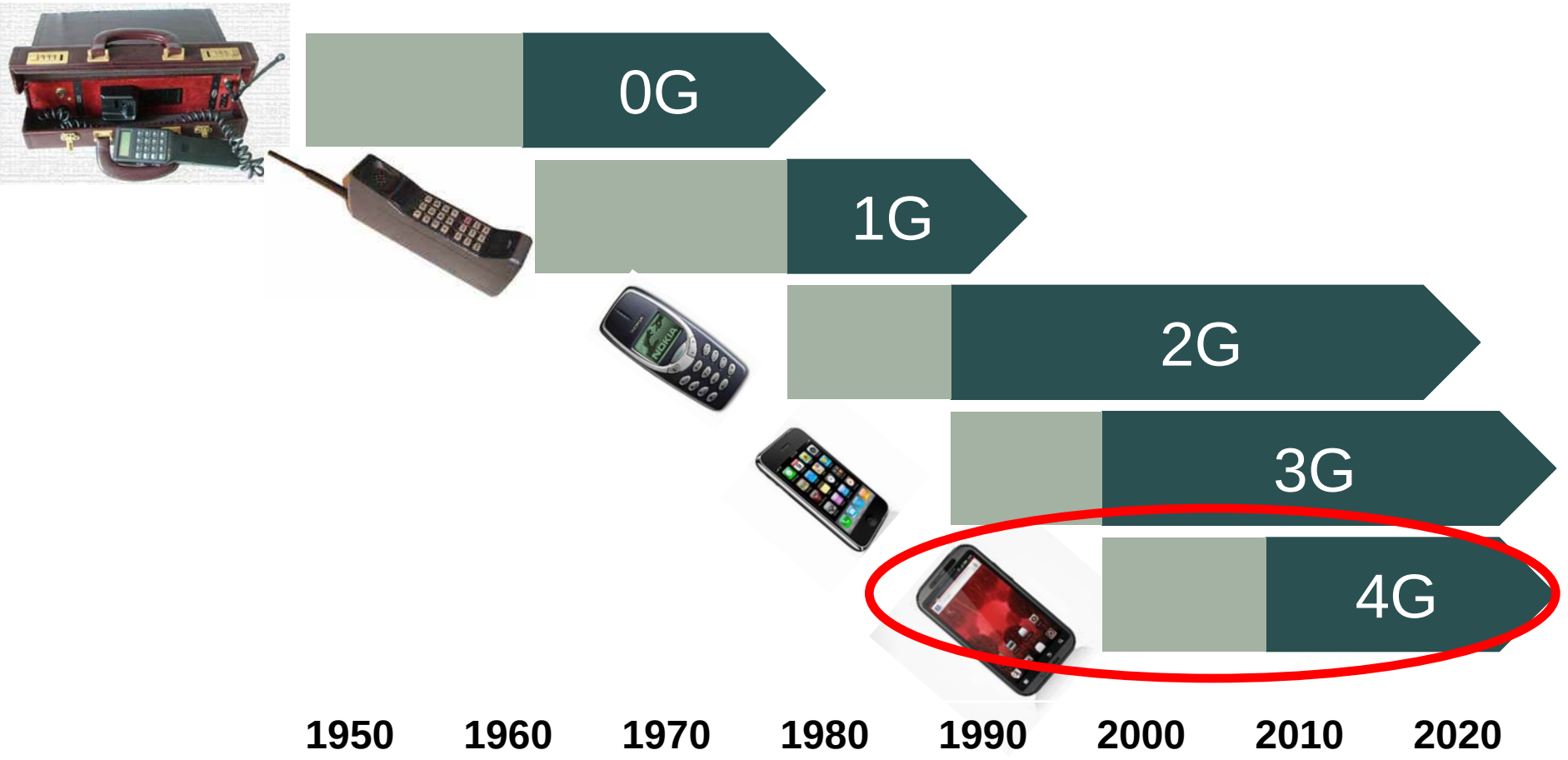
Hutchison Whampoa Ltd

Why regulate spectrum?



Economies-of-scale.

Need to foster global industry standards...



Source: International Telecoms Union (2011).

And promote globally harmonised spectrum.

4G spectrum	Americas	Asia Pacific	Europe: Eastern	Europe: Western	MEA	US/ Canada
700MHz						
800MHz						
850MHz						
900MHz						
1700MHz						
1800MHz						
1900MHz						
2100MHz						
2300MHz						
2600MHz						

Note: Majority market share spectrum use by 2015. Source: Wireless Intelligence (2011).

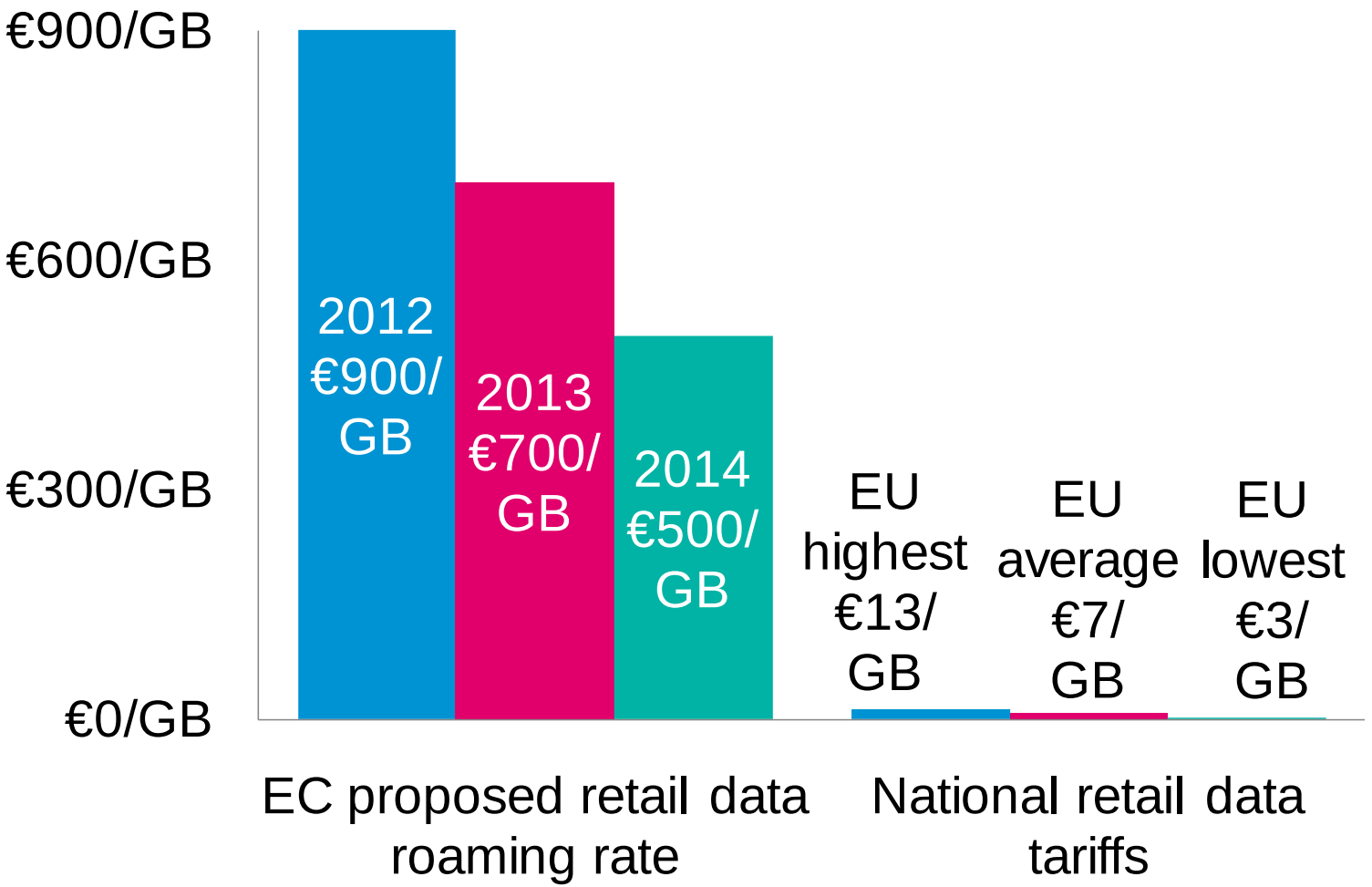
Network effects.

Consumers want to use everywhere.

Home

Abroad

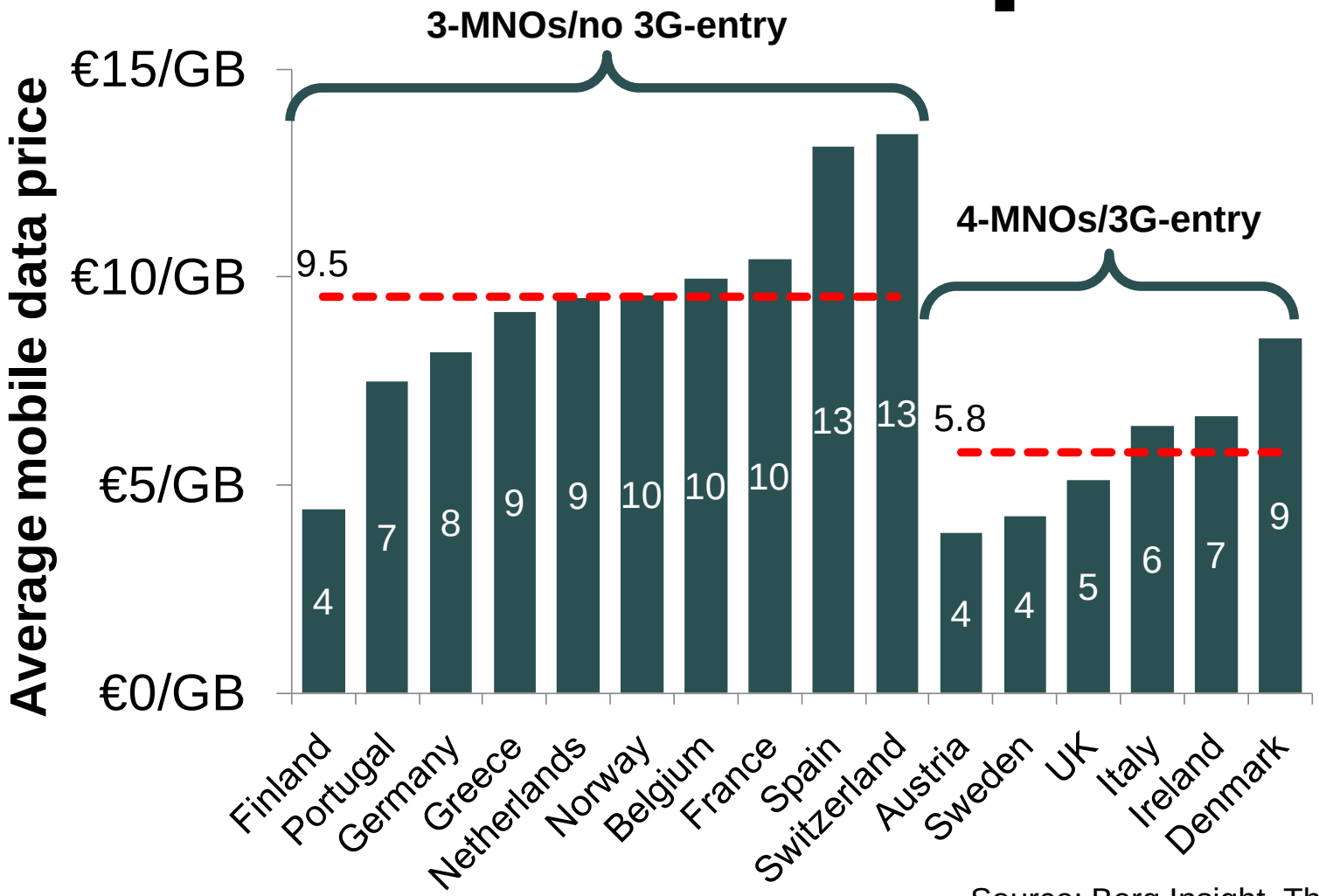
Ineffectual roaming regulation not helping.



Source: Berg Insight (2011), European Commission (2011).

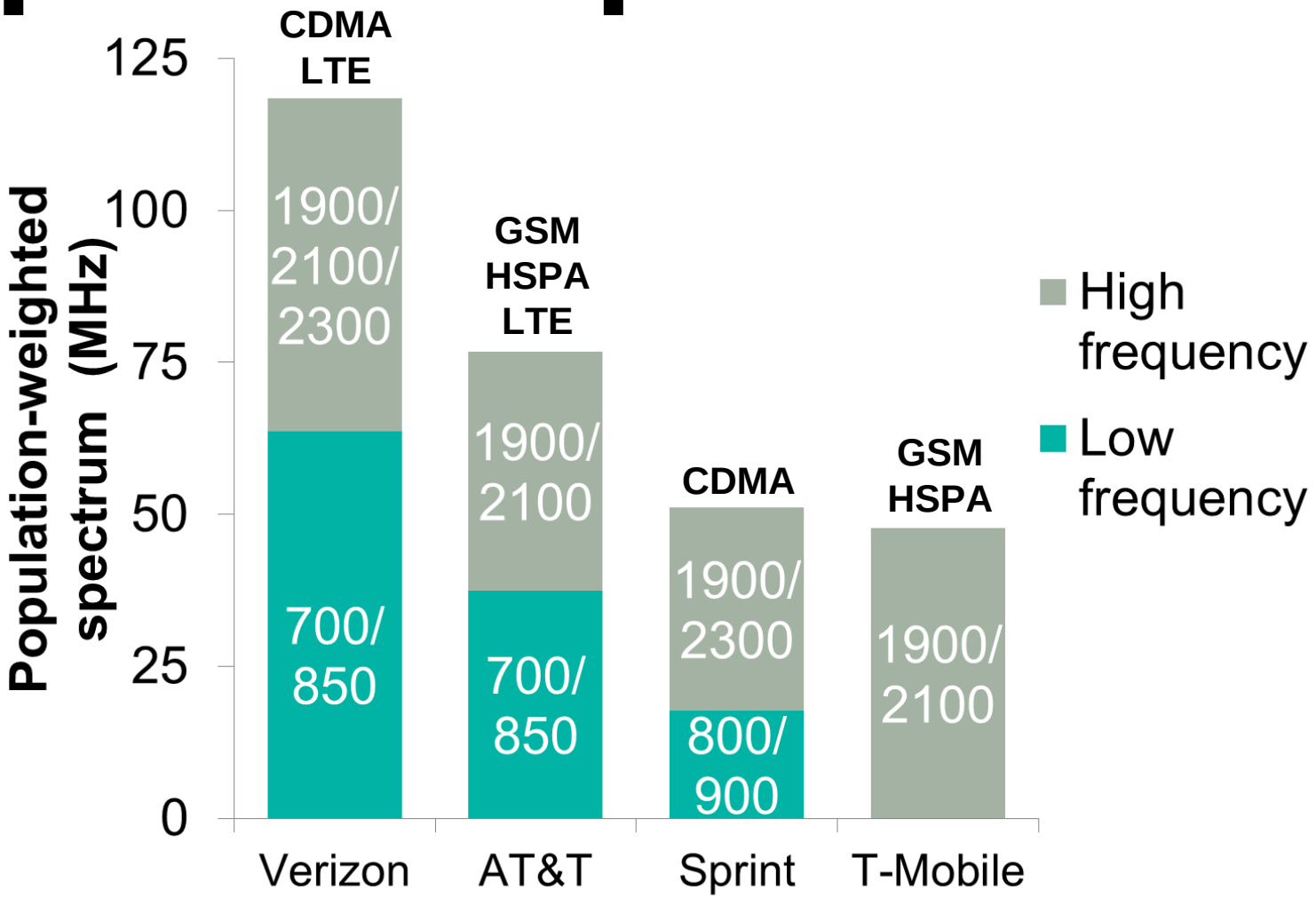
Rent-seeking.

Spectrum allocation critical to lower prices.



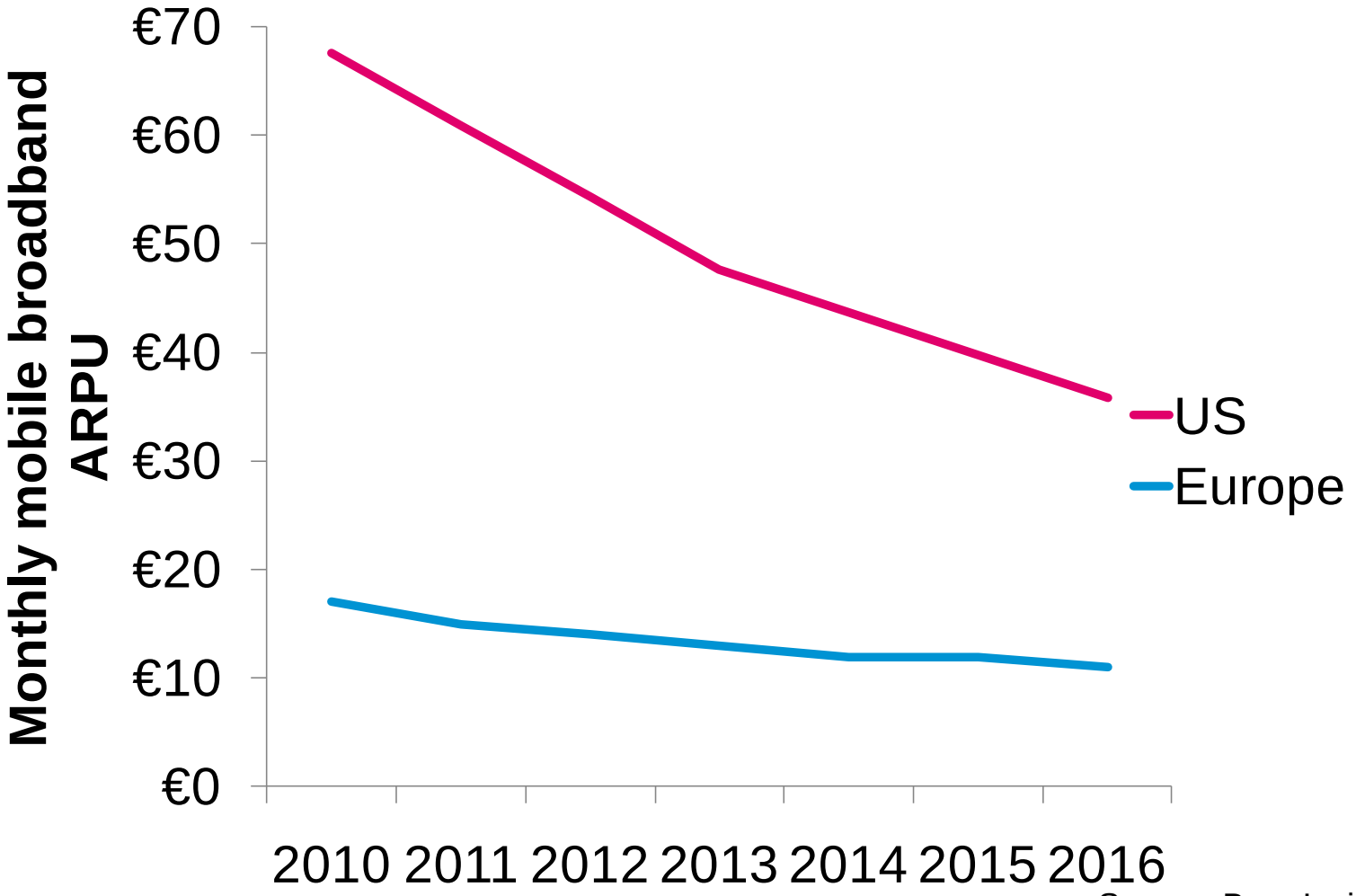
Source: Berg Insight, Three (2011).

US suffers from every spectrum problem.



Source: AT&T, FCC, Verizon (2011).

US spectrum failure: 4x higher prices.



Source: Berg Insight (2011).

Thank you.

Three.co.uk

IIC UK Chapter Event – UK Communications Review: Spectrum, 13 December 2011

1. Thank you Emanuela. Hello. It's a great pleasure to be here tonight.

2. First, as background, who is Three?

- Three is part of the 3 Group, a mobile network operator in six countries in Europe, owned by Hutchison Whampoa of Hong Kong.
- 3 Group the only successful mobile network entrant in Western Europe in last 10 years.
- The last entrant before 3 Group was Orange, also founded by Hutchison Whampoa.

3. Why regulate spectrum?

- My instructions from Emanuela to talk more widely about spectrum than just the UK mobile auction.
- Will address why regulate spectrum in context of the Communications Review.
- Why regulate spectrum is ultimately about how to make the most efficient use of a scarce natural resource.
- This question is well-rehearsed by Ofcom, for example, in its Spectrum Framework Review, but good to remind ourselves – and look at recent evidence.
- Being surrounded by lawyers and engineers, I would like to address from an economist's perspective!

4. The first big reason is economies of scale.

- Industries that use spectrum are often very capital intensive, with large economies of scale.
- For example, in mobile communications, these include very large R&D in new technology, handsets and network equipment, plus large capital expenditure in networks and retail and distribution.
- Large economies of scale are present in all other spectrum-using industries, such as broadcast and aeronautical.

5. What this means is that regulators should try to foster global technology standards.

- The mobile industry has been around for almost 50 years now, from the first phone-in-a-suitcase “mobiles”, but 4G is the first time is single standard to be adopted globally.
- So one of the biggest benefits of 4G LTE is the prospect of much lower network equipment and handset costs through economies of scale and competition.

6. However, even with 4G, technological harmonisation is being undermined by continuing spectrum fragmentation.

- There are already 10 different 4G spectrum bands.
- By 2015, operators will have deployed LTE in 38 different frequency combinations.
- This does not help achieving economies of scale and competition in network and user equipment.
- So a key regulatory responsibility is to promote harmonised spectrum, through international co-ordination and through prioritising bands that are already being used in other countries, rather than creating entirely new spectrum bands.

7. The second big reason for regulation is what economists call “network effects”.

- This is the consumer angle, rather than the industry angle.
- It means that consumers want a use a service wherever they go.
- It means harmonisation and interoperability of technology. There are still large parts of the world where mobile handsets only work one network technology and have no roaming capability.

8. It also means that regulators need to encourage common technical standards, but also to intervene to correct major market failures.

- Although it is technically possible to roam while travelling across the EU, 9 out of 10 consumers switch off data roaming because of the prohibitive pricing. The huge benefit of smartphones while travelling is completely wasted.

- And regulators are being very ineffective about this. While not directly a spectrum issue, ineffective roaming regulation is undermining the benefits of spectrum and technology harmonisation.
- In summary, the EU Digital Agenda states that **"The difference between roaming and national tariffs will approach zero by 2015."**
- The European Commission is nevertheless proposing retail price caps of €900/GB from next year – over 100 times average EU national retail data tariffs.
- So far we believe that regulators seem to have got GBs and MBs mixed up.

9. The final big reason for regulating spectrum is rent-seeking.

- Spectrum is a highly valuable and scarce resource, obtainable only from governments.
- This creates strong incentives for existing spectrum holders to hoard existing spectrum and to prevent new entrants and competitors getting hold of it – and large lobbying to achieve this.

10. The evidence in this slide shows the impact of effective competition on mobile data prices.

- On the left, Western European countries that typically only have three mobile network operators and no 3G-entrants and on average mobile data prices almost twice as high, at €9.5/GB, as countries with four MNOs and 3G-entrants, where mobile data prices are on average €5.8/GB.
- This demonstrates the importance of spectrum regulation to competition and to consumer prices.

11. As a case study, the US mobile market is the worst of all worlds – it suffers from every spectrum problem.

- First, the US has a complete mess of different technology standards, meaning little interoperability of handsets between networks and internationally, and much higher network and handset costs. This particularly creates a disadvantage for smaller network operators.

- Second, few of the US mobile spectrum bands are standard international bands. This creates further problems of interoperability and handset costs. For example, T-Mobile USA, the 4th largest US operator, has no iPhone because the production cost is too high for T-Mobile alone.
- Third, after industry lobbying, the US abolished spectrum caps ten years ago, and this has led to huge consolidation of spectrum among the two largest network operators, AT&T and Verizon, especially for valuable low frequency spectrum.

12. My final slide shows part of the price that US consumers are paying for this: 4 times higher mobile data costs than Europe.

14. Thank you.

So, I am delighted now to pass over to the next speaker.