



Spectrum valuation in delivering broadband objectives

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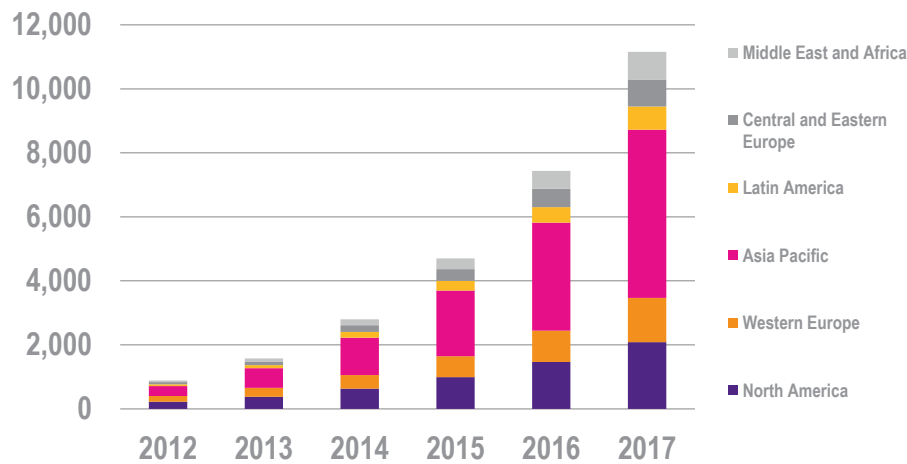
- **More spectrum is needed for mobile broadband**
- **Challenges in freeing up more spectrum**
- **Providing incentives for change**
- **Approaches to spectrum valuation**
- **Assigning the spectrum**
- **Conclusions**

More spectrum is needed for mobile broadband – 1720MHz* by 2020?



Cisco:

Mobile data traffic, PB/month



Source: Plum Consulting, Cisco

Qualcomm:

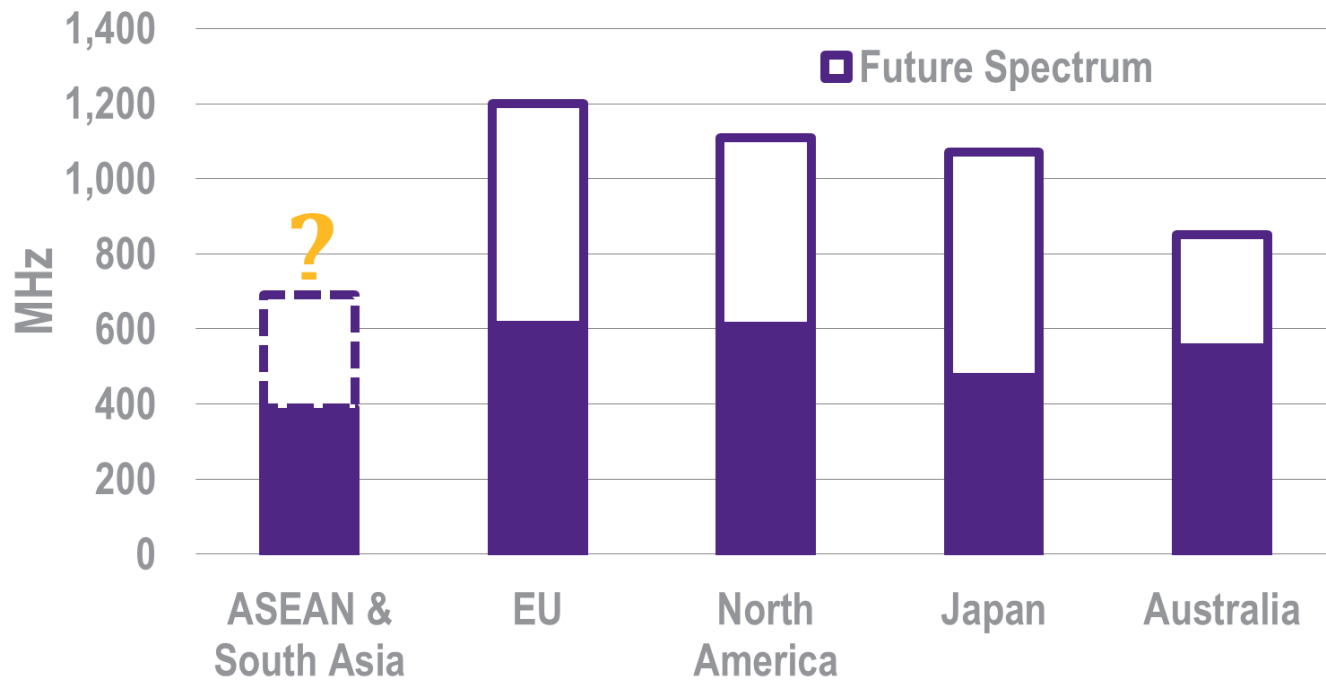
1000x data challenge

* Source ITU-R – M2078

National/regional targets for spectrum release are ambitious



Spectrum assigned to mobile by 2020 (up to 4GHz)

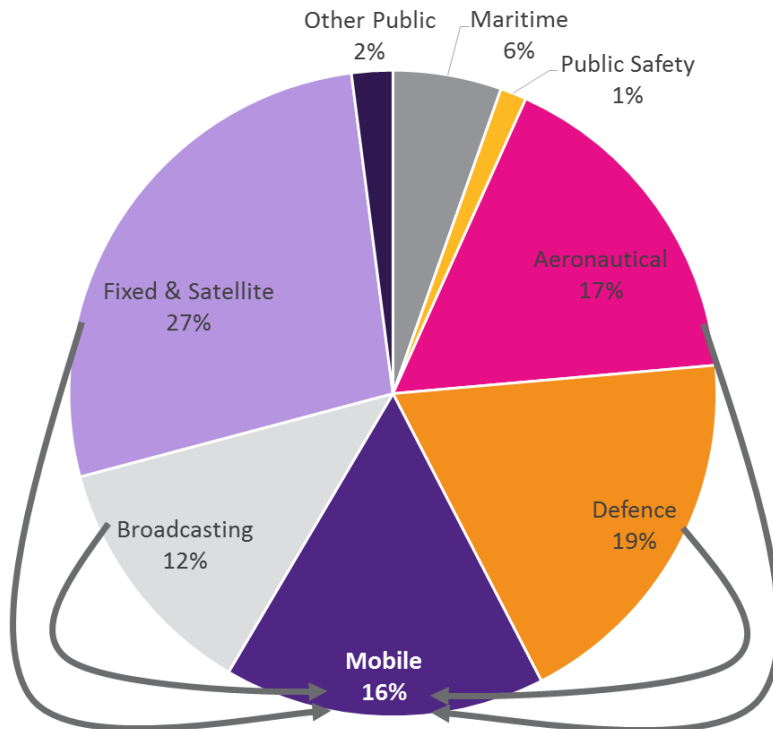


Where will the spectrum come from?



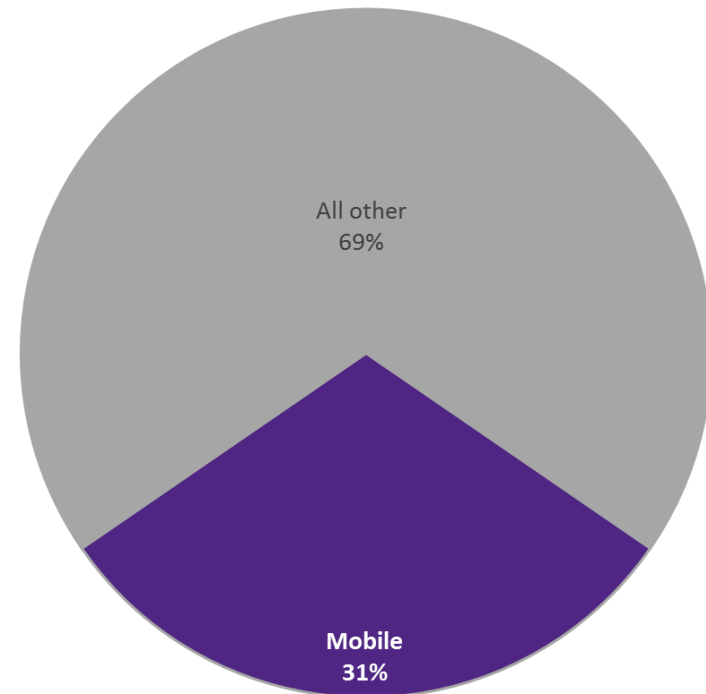
Today

Allocations under 4GHz - Europe

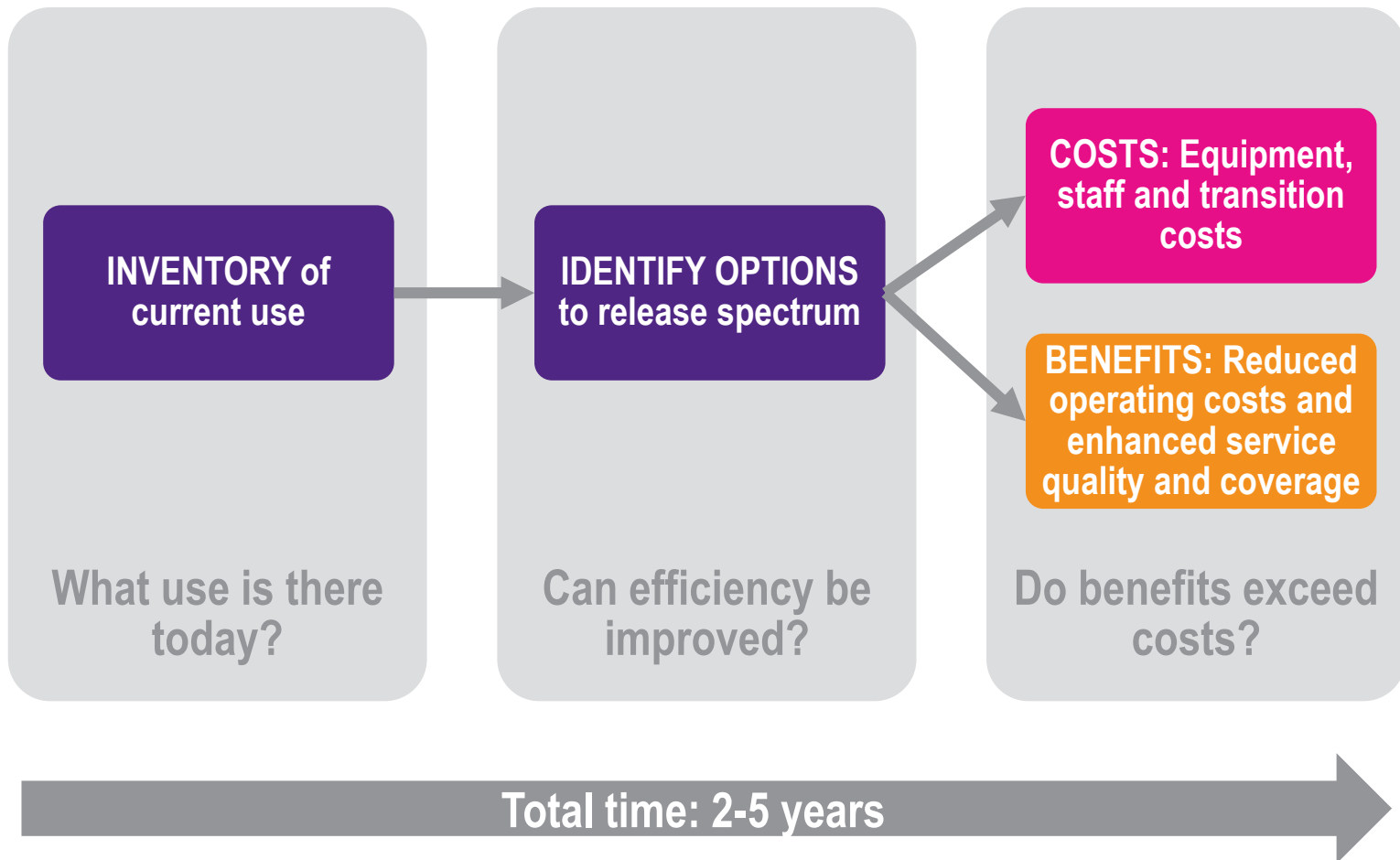


2020

Allocations under 4 GHz - 2020



Challenges in releasing the spectrum

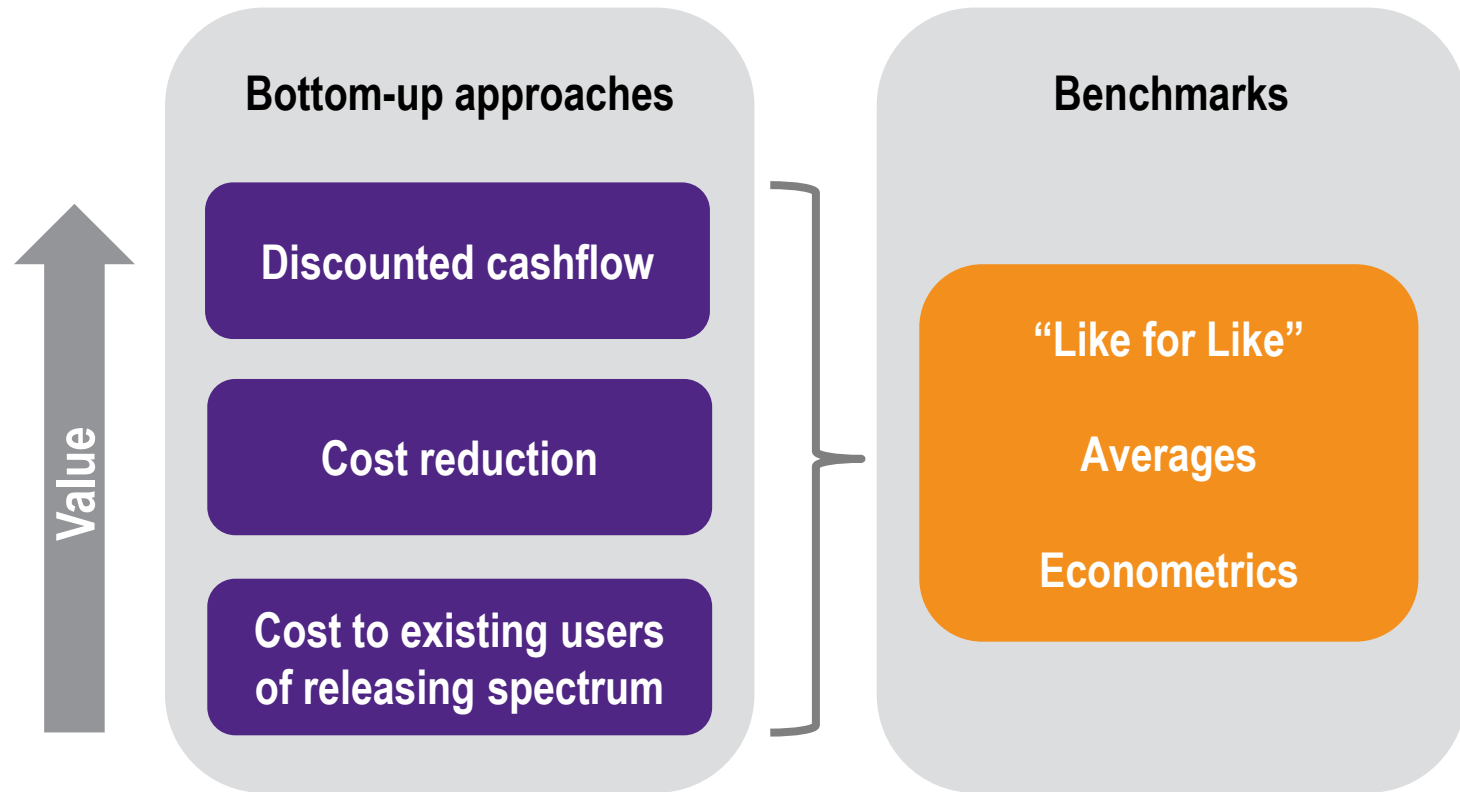


Providing incentives for change



- **Demonstrating the benefits exceed the costs in Europe**
 - Digital switchover costs and benefits
 - Reallocate 2.6 GHz from MMDS
 - Reallocate 1.4GHz from broadcasting
- **“Carrots”**: **Financial compensation**
 - United States: \$1bn paid to Defence for releasing AWS bands
 - France has a refarming fund – recent payments to defence and broadcasting for releasing 800MHz & 2.6 GHz
 - UK – Defence is selling 2.3GHz and 3.5 GHz by auction in 2014
- **“Sticks”**: **Spectrum Pricing**
 - UK – pricing for most uses including defence

Mobile spectrum valuations are often based on a mix of approaches



Uncertainty of bottom up approaches vs wide range for benchmark values



Assigning the spectrum – some basic requirements

- Auctions generally perform better than beauty contests in terms of efficiency, transparency and objectivity
- Auctions can accommodate numerous public policy objectives – coverage, competition, new entry and so forth
- Whether auction, beauty contest or a hybrid is used the spectrum will need to be valued and fees set
- And operators need flexibility over the licence term (15-20 years) to cope with technology and market changes
 - Release on a technology neutral basis
 - Blocks large enough to support future mobile broadband services
 - Make spectrum tradable

Conclusions



- **Efficient and sustainable decisions about reallocating spectrum to mobile services require spectrum valuations**
- **Spectrum values are needed even when governments do not set spectrum fees for mobile operators e.g. the US where operators have tradable perpetual licences**
- **All valuation methods are imperfect: a mix of approaches should be used and there is merit in setting values conservatively, so that spectrum is not left idle**

Thank you!



Plum Consulting is a global leader in spectrum regulation and policy.

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References



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