



# Discussion paper: TV White Spaces – Managing the spaces or better managing inefficiencies?

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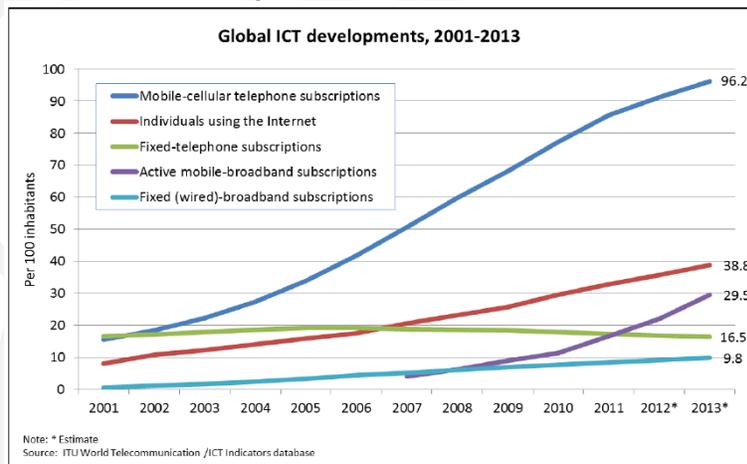
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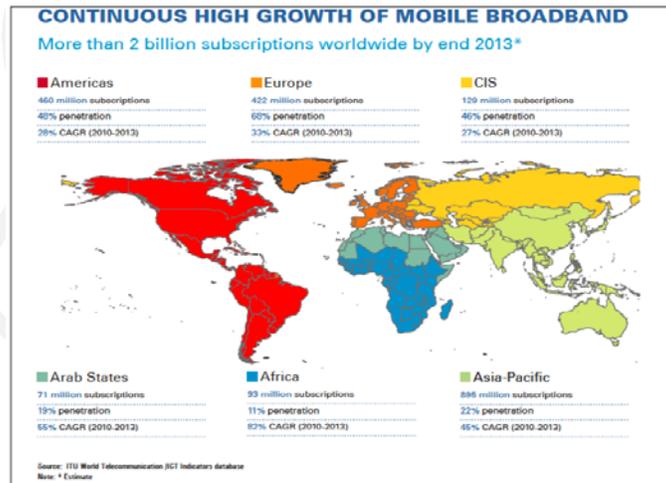


## Why looking for more efficient spectrum use?





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## TV White Spaces: what are they and how they are being used?

- In TV frequency bands, currently idle frequency channels: “white spaces” used in an opportunistic manner & low power
- UHF spectrum is highly valued limited resource: more coverage, cost effective (the “sweet spot of spectrum”)
- Useful for wireless technologies other than broadcasting: opportunity for wireless broadband
- Currently, there are on-going trials and some commercial deployments are emerging.
- Proposed as a *license-exempt* application: low power non-interference/non protected basis (like Wi-Fi). Must not interfere with the primary service (broadcasting)

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*TV White Spaces: what are they and how they are being used?*

TVWS low power BS  
(consults DB for TV  
available channels)

**Delivery of fixed &  
mobile broadband  
by opportunistically  
using TV spectrum**

TV  
Broadcasting  
(transmits using  
channels X, Y in  
a given region)

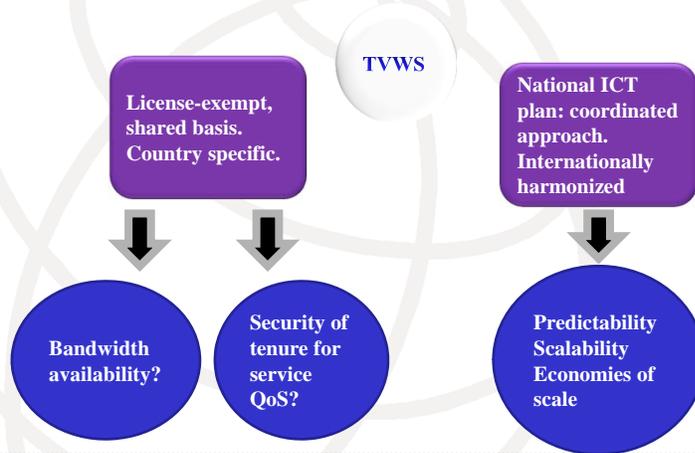


*TVWS: Managing the spaces or better  
managing inefficiencies?*

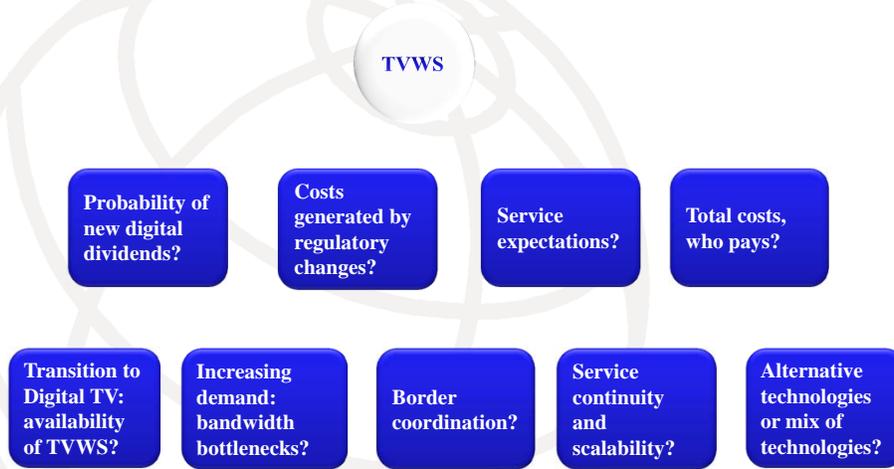
*Discussion paper highlights*



## TVWS: Managing the spaces or better managing inefficiencies: short-term? long-term?



## Considerations for implementing TVWS





## *Conclusions from the paper*

- Spectrum sharing as an alternative to address efficiency.
- Long-term strategy is needed to benefit from spectrum sharing without incurring in future increased costs.
- Potential for expansion of Digital TV and future changes in the nature of the current primary service can limit and/or exclude opportunistic TVWS services in UHF TV spectrum bands.
- There is a need to consider aspects of security of tenure and market harmonization in order to achieve long-term benefits from TVWS in the UHF TV spectrum bands.
- The paper provides a regulatory checklist as a set of questions for regulators to consider when assessing TVWS.