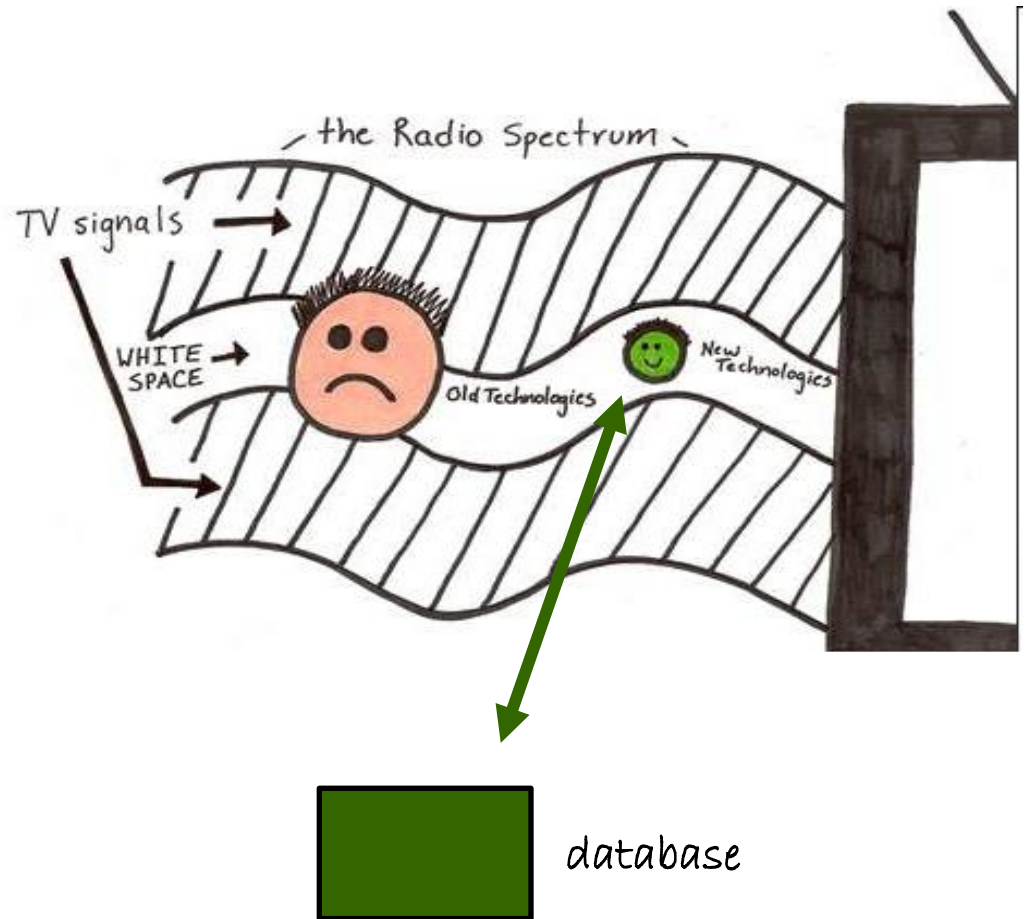


# Some wireless thoughts ...

Paul Sutton  
CTVR / the telecommunications research centre  
Trinity College,  
University of Dublin,  
Ireland

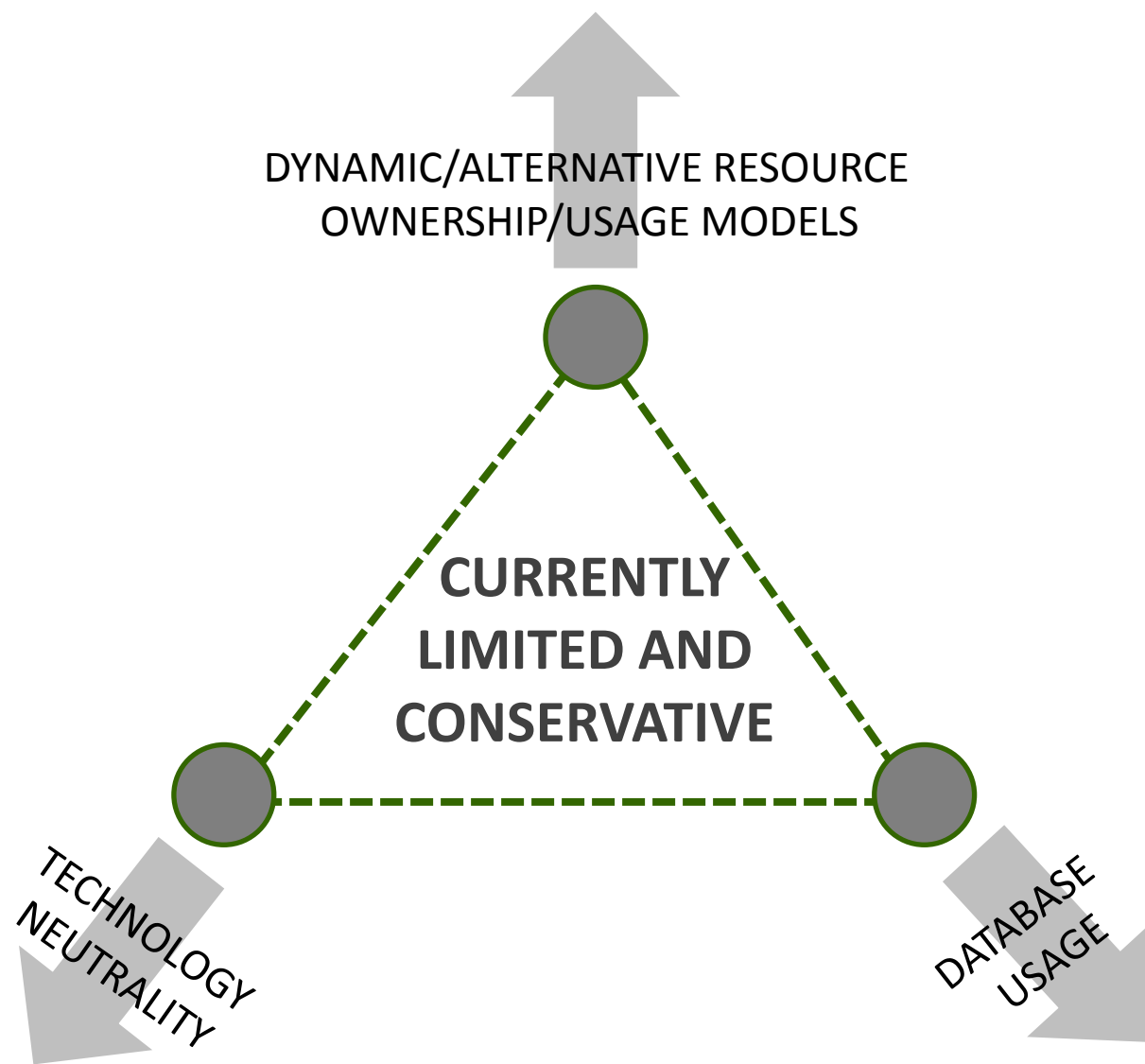
# TV White Spaces

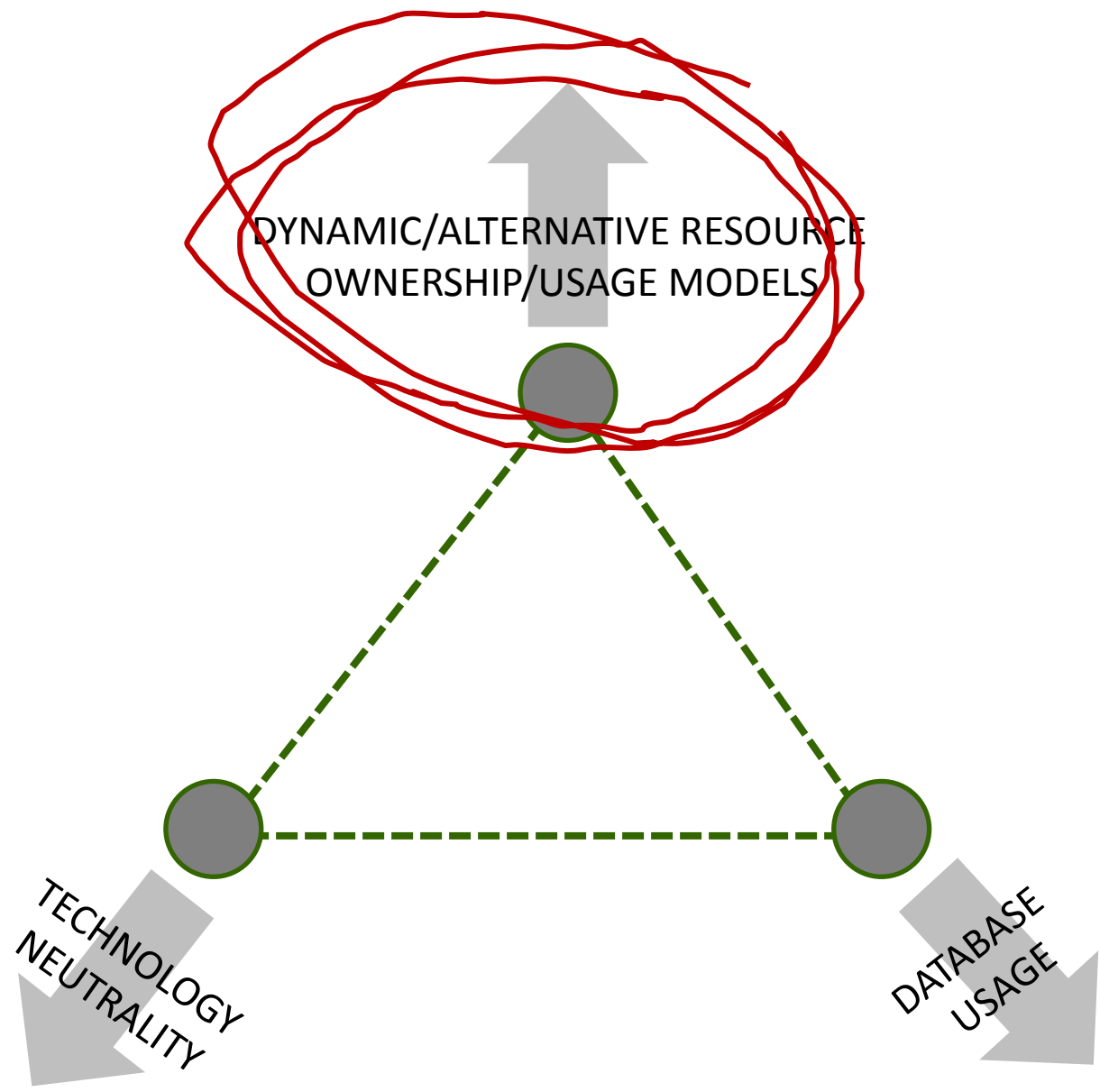


TV White Space in and of itself not that interesting ...

# ... BUT INTERESTING *SHIFTS* HAVE COME OUT OF IT ALREADY

- 1 The idea of making some **spectrum resources available dynamically** has become somewhat acceptable
- 2 The notion of a **geo-database/map** as part of the communication process has become a 'normal' way to think
- 3 The **technology neutrality** approach has gained more of a real foothold





DYNAMIC/ALTERNATIVE RESOURCE  
OWNERSHIP/USAGE MODELS

TECHNOLOGY  
NEUTRALITY

DATABASE  
USAGE



**mast/site  
sharing**

**capacity  
subleasing**

**process  
sharing**

# THE NEW DRIVERS OF SHARING

75% of respondents predicted their sharing of physical objects and spaces will increase in the next 5 years.

## TECHNOLOGY

— Online sharing is a good predictor of offline sharing. Every study participant who shared information or media online also shared various things offline — making this group significantly more likely to share in the physical world than people who don't share digitally.

— 85% of all participants believe that Web and mobile technologies will play a critical role in building large-scale sharing communities for the future.



## COMMUNITY

— 78% of participants felt their online interactions with people have made them more open to the idea of sharing with strangers, suggesting that the social media revolution has broken down trust barriers.



— Moreover, most participants (78%) had also used a local, peer-to-peer Web platform like Craigslist or Freecycle- where online connectivity facilitates offline sharing and social activities.



PHOTO BY OLIVER SCHLEIBER

This study's data supports the four primary drivers of sharing as originally outlined by Rachel Botsman, co-author of *What's Mine Is Yours: The Rise of Collaborative Consumption*

## ENVIRONMENTAL CONCERNS

— More than 3 in 5 participants made the connection between sharing and sustainability, citing "better for the environment" as one benefit of sharing."



PHOTO BY KEVIN MAZUR

## GLOBAL RECESSION

— Over the past few years, the tenuous state of the economy has heightened awareness around purchasing decisions, stressing practicality over consumerism. Participants with lower incomes were more likely to engage in sharing behavior currently and to feel positively towards the idea of sharing than did participants with higher incomes. They also tended to feel more comfortable sharing amongst anyone who joins a sharing community.

— Regardless of income, more than 2/3 of all participants expressed that they'd be more interested to share their personal possessions if they could make money from it.

— The two most popularly perceived benefits of sharing (67% each) were "saving money" and being "good for society," echoing the "we + me" mentality now popular amongst Millennials; saving money needn't come at the expense of helping the environment or society.

Symbols convey that the following subgroups were significantly linked to the corresponding data point:

- Gen Y (ages 20-29) High Income (\$100k+)
- Tech-oriented Has Children
- Politically Liberal Low Income (<\$50k)
- Smartphone Owner

\*Response options were not mutually exclusive.



# WHAT'S MINE IS YOURS

THE RISE OF COLLABORATIVE CONSUMPTION

Rachel Botsman and Roo Rogers



## 20TH CENTURY

CREDIT

+

ADVERTISING

+

INDIVIDUAL OWNERSHIP

=

HYPER CONSUMPTION

## 21ST CENTURY

REPUTATION

+

COMMUNITY

+

SHARED ACCESS

=

COLLABORATIVE CONSUMPTION





SPECTRUM

POWER

BACKHAUL

access  
points/basestations

processing  
capabilities

STORAGE

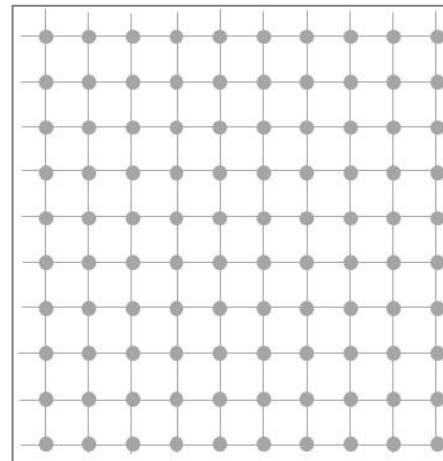
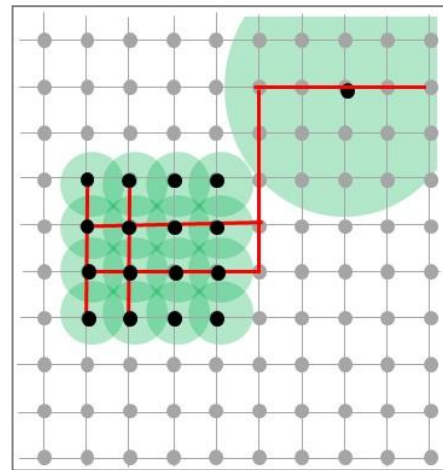
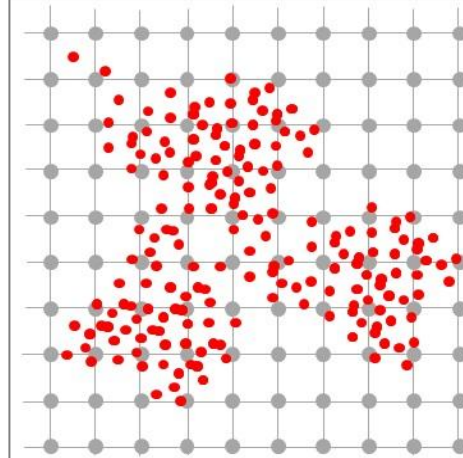
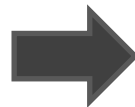
MANPOWER

DATA

APPLICATIONS

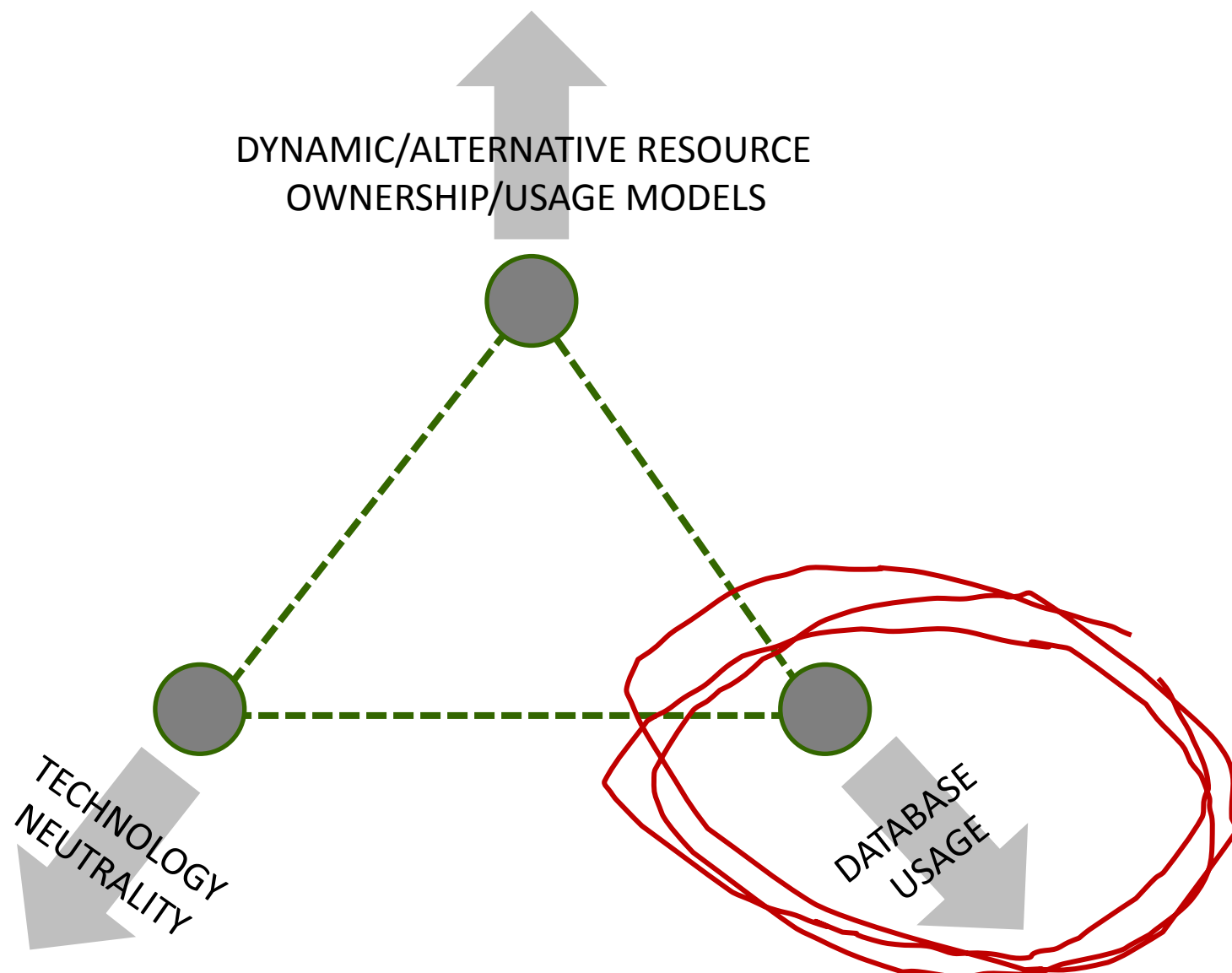
DECISION-ENGINES

OWNERSHIP/ RESOURCE ALLOCATION MODELS

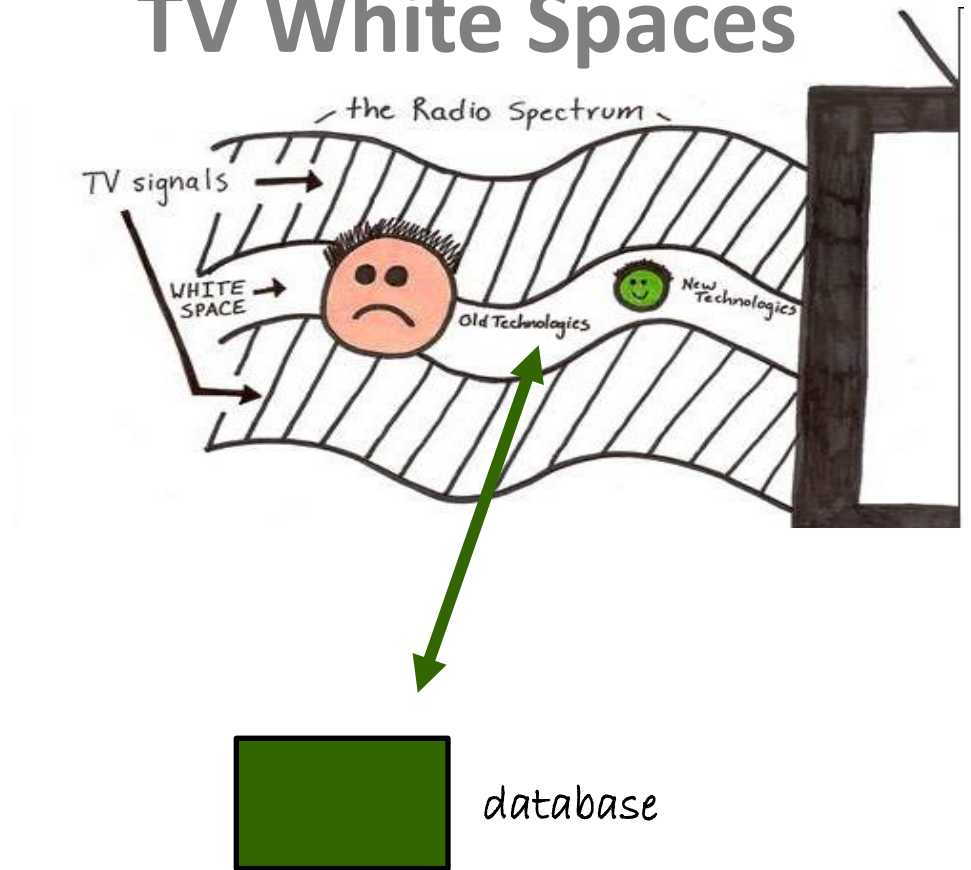


bit pipes + bit crunchers + smarts



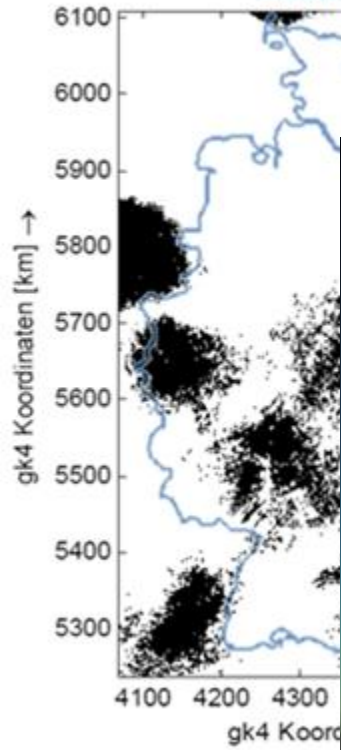


# TV White Spaces



Let's think about the discussion we just had about resources

### Germany Ch53



SPECTRUM

POWER

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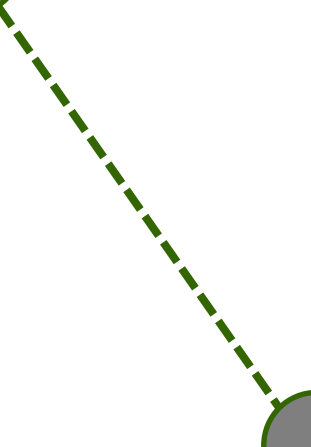
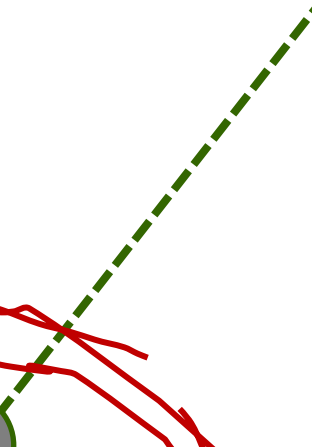
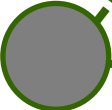
ONS

OWNERSHIP/ RESOURCE ALLOCATION MODELS

DECISION-ENGINES

courtesy of R&S  
the FP7 COGEU P

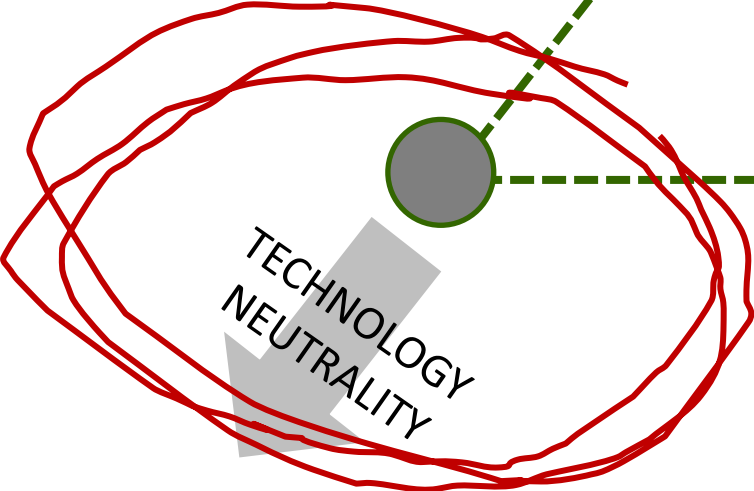
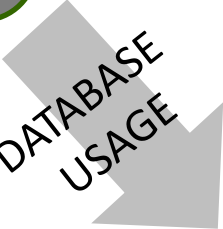
DYNAMIC/ALTERNATIVE RESOURCE  
OWNERSHIP/USAGE MODELS

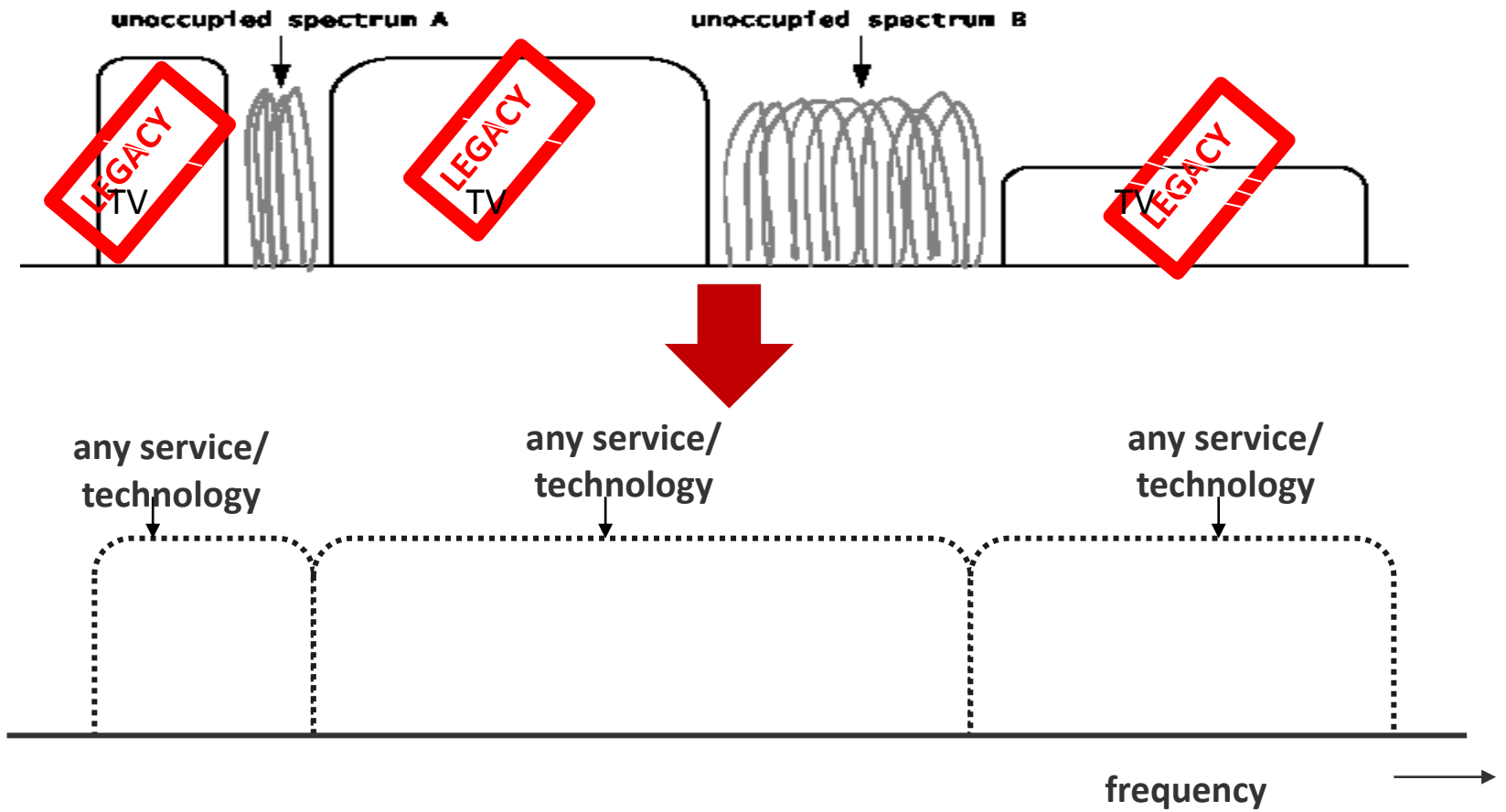


TECHNOLOGY  
NEUTRALITY

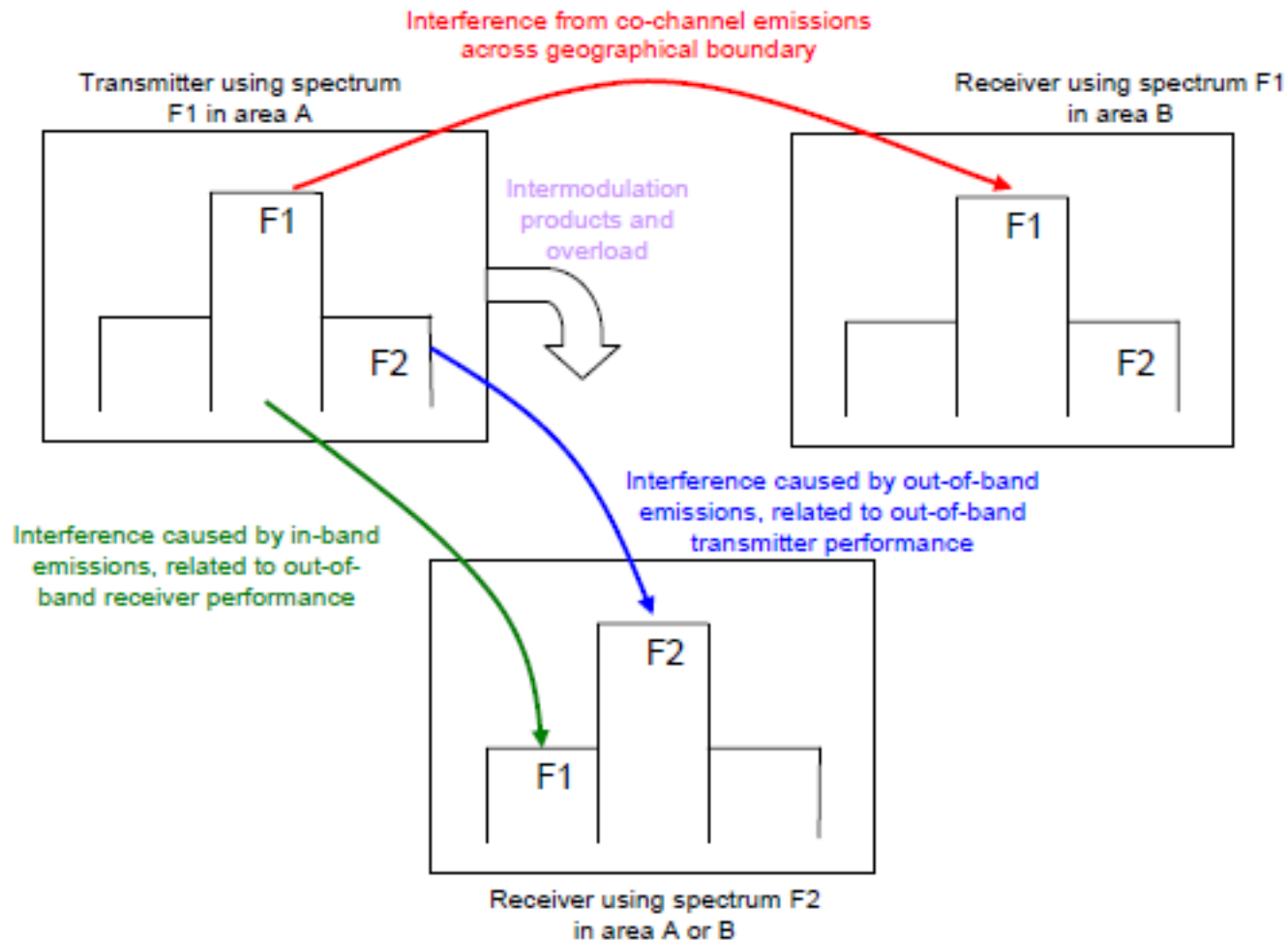


DATABASE  
USAGE

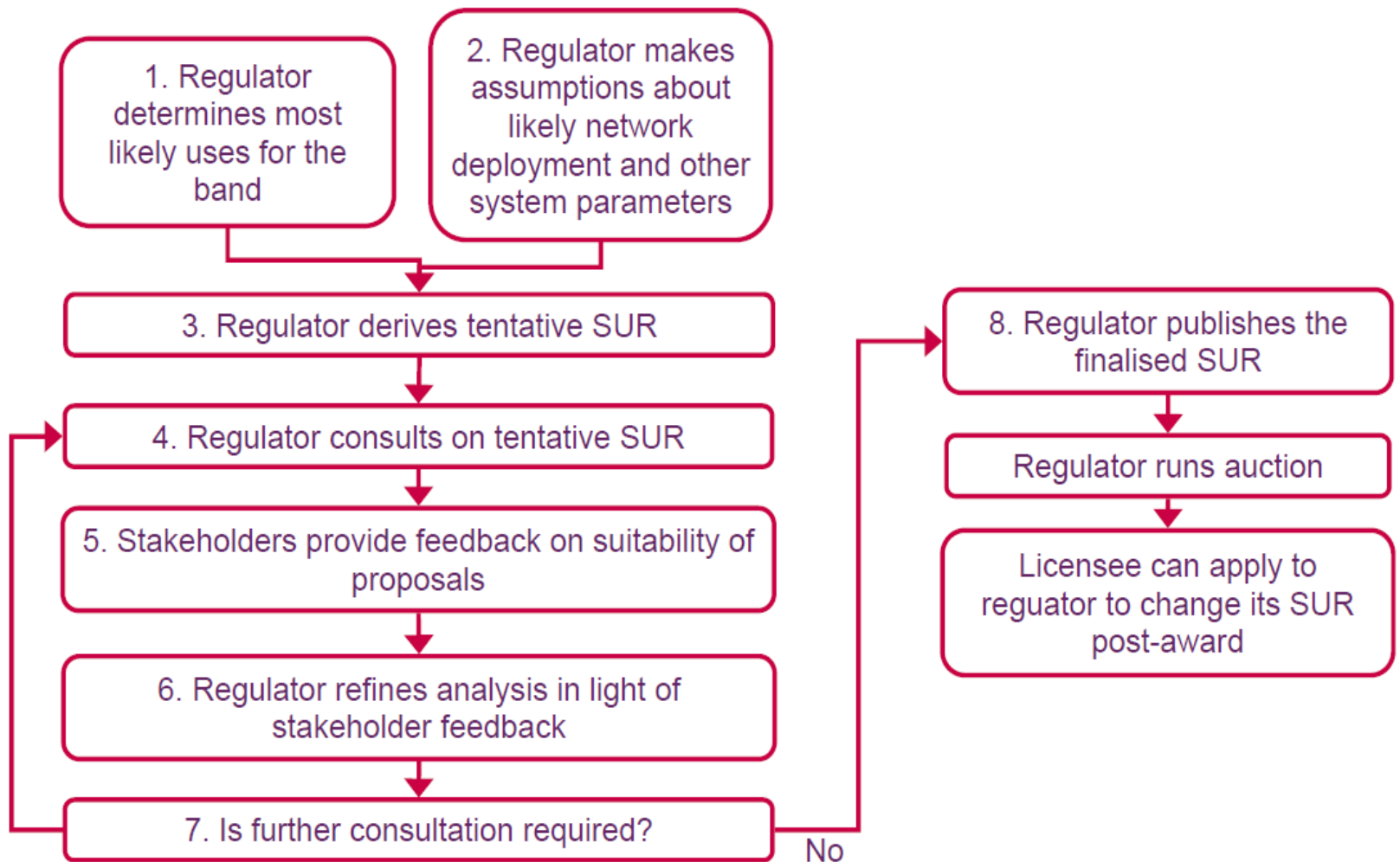




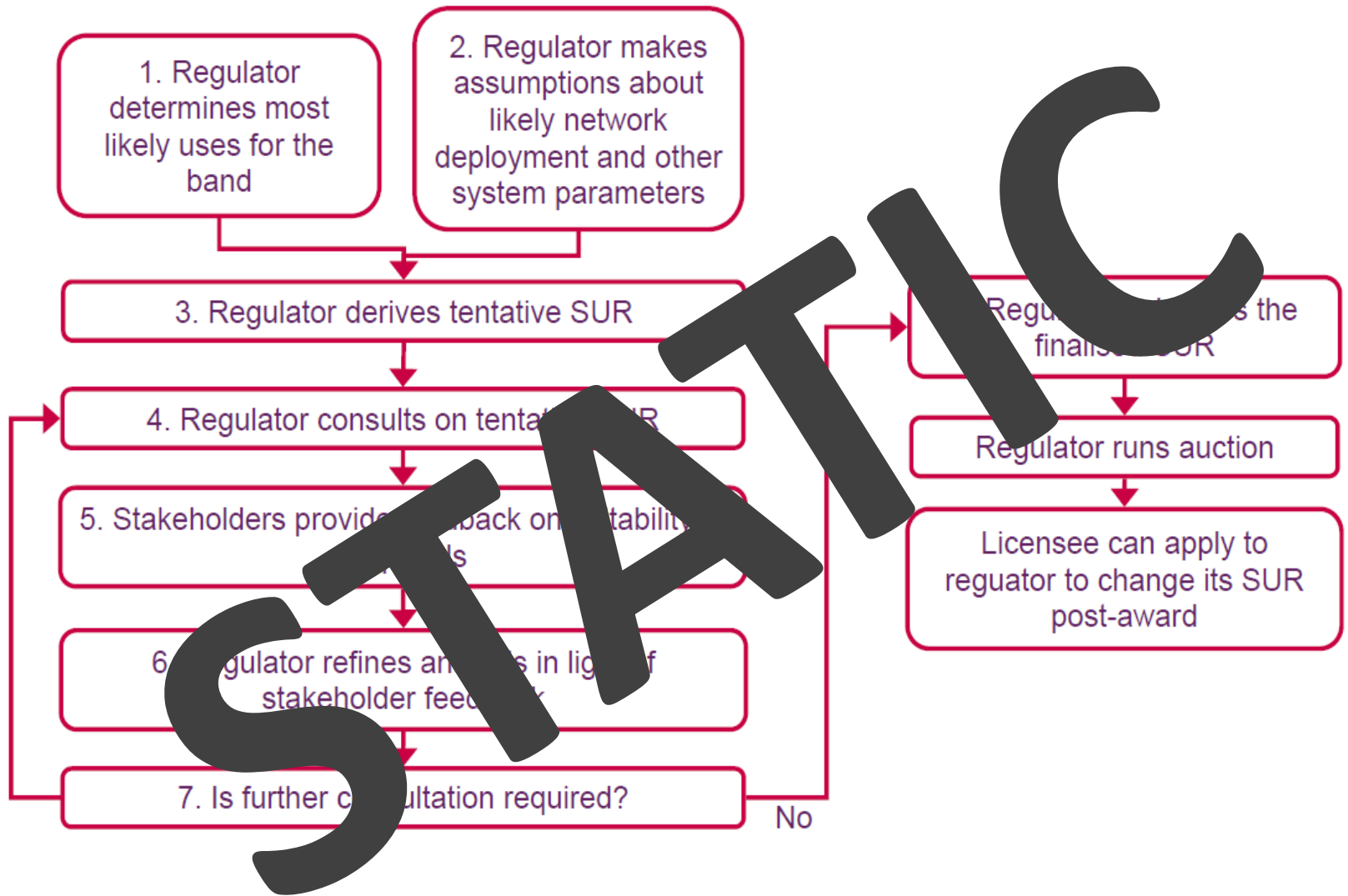
In motion to a better place?



reproduced from Ofcom Spectrum Usage Rights online reports







# SO

constant challenging of resource ownership and resource access models is ongoing in many domains

+

tipping around the edges in terms of emerging technologies  
– database/cognitive engines/collaborative techniques

**rethinking of these holistically will allow us to see the way forward** (LTE and LTE advanced would be a subset of this future ...)

# implications !!!

the days of the traditional network operator may be numbered

a shift may happen in the point at which standardisation occurs  
... perhaps we will standardise how capabilities are expressed  
and how services/networks are constructed rather than the  
capabilities themselves

even the role of the regulator may change from a body that  
makes rules to manage interference to a body that manages  
databases and allows the rules to be constructed!

Thanks

[WWW.CTVR.IE](http://WWW.CTVR.IE)

Ideas from Linda Doyle, Paul Sutton, Tim Forde, Baris Ozgul and Irene Maclusa