Regulation 360º

Protection of end users &

Security (cyber security and resilience/integrity)

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How will the future differ from the past?

- The fourth industrial revolution: Disrupting technologies like networked Artificial Intelligence (AI), robotics, BlockChain *etc* will change our societies dramatically

- *BigData/Artificial Intelligence-supported* approach will replace/enhance virtually all current services

- Large scale *vertical services* will emerge and enlarge the market substantially (cars, healthcare, smart cities, security, ...)

- Need for enhanced *mobile coverage* almost everywhere, including landmass and oceans

- Connectivity (including 5G) for *things* as important as for *humans*. Connected *things* will by far outnumber *humans*

- Switched networks will be phased out and *all-IP networks will dominate*. Network slicing and network virtualization

- *Remuneration* (payment) for services will have various forms
  - Payment by providing *information* as well as *money*. "*Money*" will change also (*BitCoin, BlockChain*, etc)

Cyber security and resilience of networks

NOW

- Nations are increasingly dependent on communications networks
- Cyber threats put businesses and consumers at risk
- We have a long way to go – but the journey has started!
- Security is a priority agenda item for the EU
- Preparing for GDPR and NIS
  - NIS is only for critical infrastructure
- Unclear definition of security parameters for networked consumer equipment
- Natural disasters are a growing concern
- Resilience of networks is undefined and no minimum set of requirements applies for integrity of networks

FUTURE

- Nations very dependent on communications networks for most segments of society
- Cyber threats put almost all segments of society at risk
- Implementation of GDPR and NIS will pave the way, but may take considerable effort
- EU Cyber security agency & EU certification scheme
  - Mandatory co-operation and information sharing
- Regulation will cover both critical infrastructure as well as businesses and the consumer markets
- Preparedness for natural disasters enhanced
- Resilience of networks is defined and meets auditable minimum requirements

Protection of end-users

- NOW
  - Scope of the regulation based on a solid foundation of ECS and conveyance of signals
    - Stipulates various means to protect end users using ECS and ECN
  - OTTs not regulated
  - Roam Like At Home (RLAH) implemented
  - USO is focused on voice. Functional Internet definition is unclear
  - End user protection is not harmonized across the EU
  - Bundles are a major trend
  - Network Neutrality protects the open internet
  - GDPR geared to protect personal data as a market commodity

- FUTURE
  - Scope of the regulation is enhanced to cover e.g. Internet Access Services and perhaps M2M
  - Light-touch regulation on OTTs
  - No decision on intra-EU mobile and fixed international calls
  - USO: Functional internet definition enhanced. Removal of mandatory inclusion of legacy services. Social tariffs may apply.
  - Harmonization of end user protection across the EU
  - End user rights apply to all elements of bundles if the bundle consists of at least one ECS
  - Horizontal regulation, like GDPR and Cyber Security regulation, is extending end-users protection for OTT services and security