



White Paper - How to master Europe's digital infrastructure needs?

Lisbon Council
23 April 2024

Peter Stuckmann
DG CONNECT

Europe's connectivity infrastructure – we are late

Fibre coverage

- 56% of all households, 41% in rural areas;
- Slow copper switch off;
- Low take up of at least 1 Gbps broadband (at 14% in 2022 at EU level), just above half of the EU households adopted at least 100 Mbps broadband.

5G

- 5G: Basic coverage at 81%, 51% in rural areas;
- high-quality (3.6 GHz) only at 41%, stand-alone just beginning;
- it took 8 years to license spectrum in all Member States;
- 5G auctions cost €24bn to EU operators between 2015 and 2021.

Massive investment needs for underlying infrastructures and transformation of telcos' business model

- Digital Decade: at least €200 billion investment needs for fibre and full 5G (6G requires further network densification)
- Need to become credible cloud players (Telco Cloud) in partnership with large cloud players in telecoms and beyond

Vision: Telecom sector facing unprecedented transformation

Technology

- **Enabler** of telemedicine, automated driving, predictive maintenance of buildings, precision agriculture
- New model of network and service provision relies on complex **computing continuum** of cloud, edge, content, software and component suppliers, AI (traditional boundaries blurred).
- **Massive investment needs** for underlying infrastructures and transformation of business model

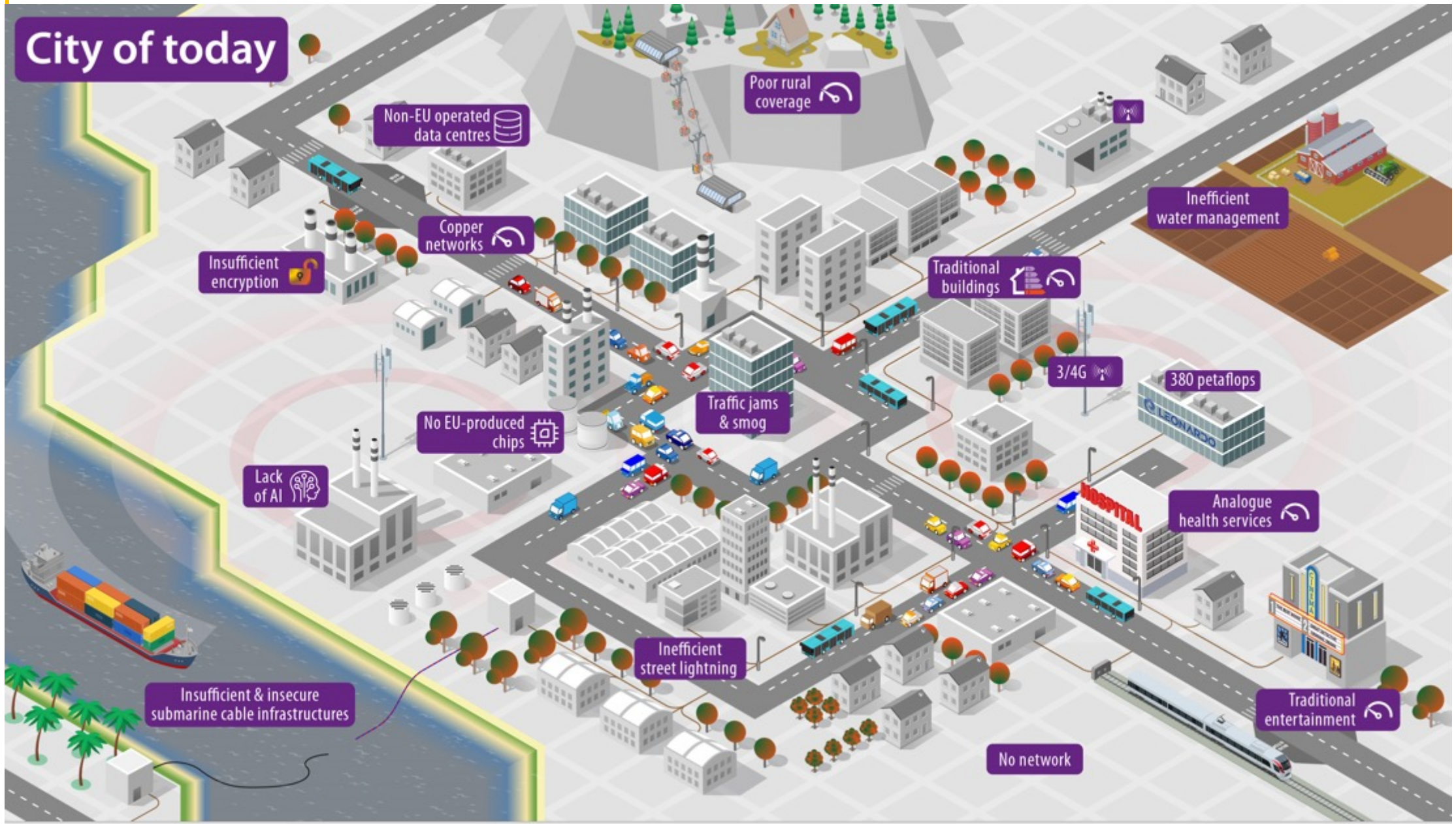
Scale - based on Single Market

- Focus on core network and operation cross-border/CoO provisions to address fragmentation and obstacles to the single market
- Service platform at European scale in balanced position with OTT content platforms
- EU-level spectrum licensing model for satellite services

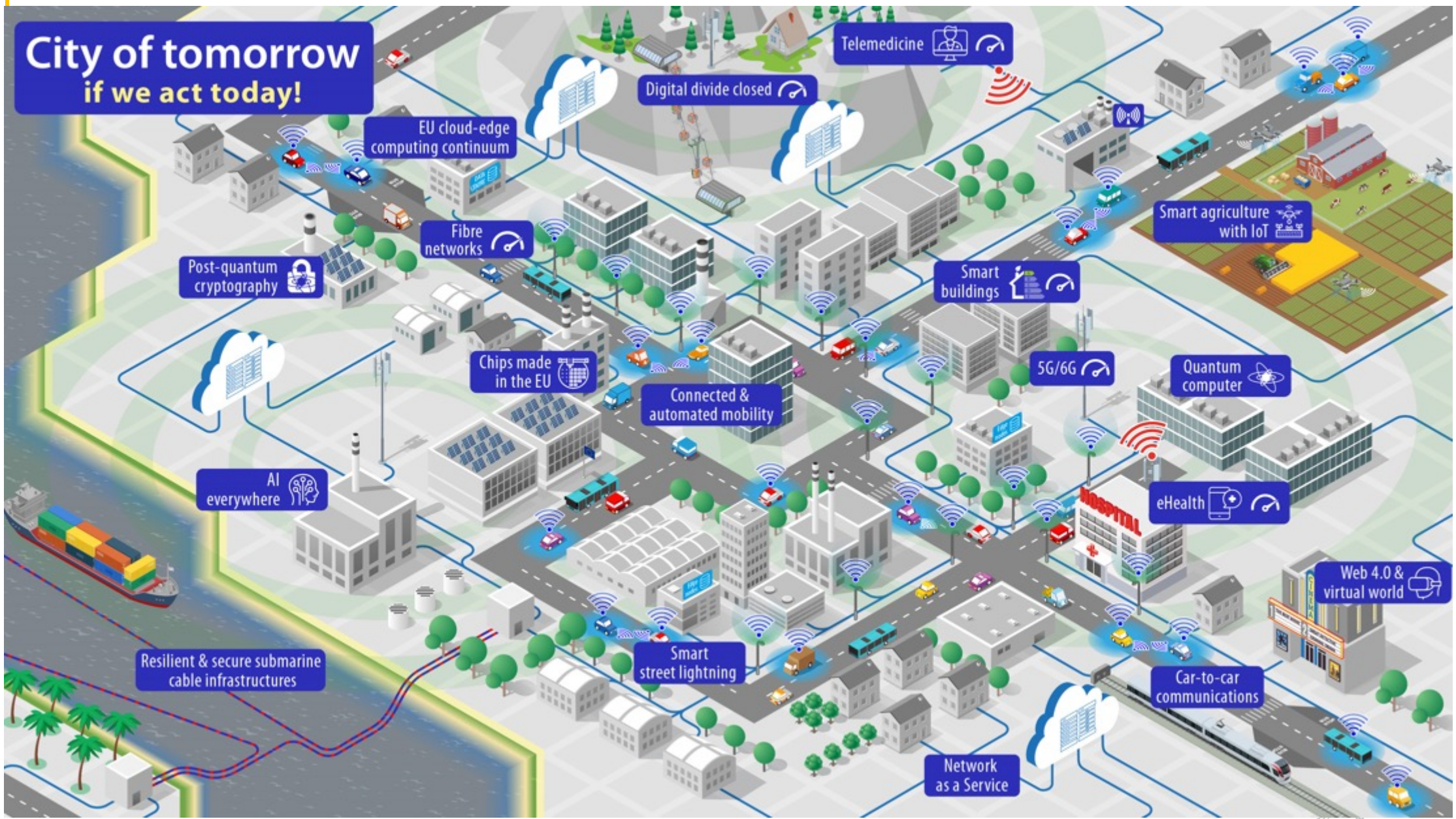
Security - Europe to face geopolitical change

- Trusted suppliers
- Secure and resilient submarine cable infrastructures
- Post Quantum Cryptography

City of today



City of tomorrow if we act today!



White Paper - How to master Europe's digital infrastructure needs? (1)

Pillar I: Creating the “Connected Collaborative Computing” Network (“3C Network”):

- **Large-scale pilots** that set up end-to-end integrated infrastructures and platforms for telco cloud and edge
- Possibility of a **new infrastructure-focussed IPCEI**
- **Different options to frame the massive investments** required into a simplified and coordinated support framework for a truly digital single market drawing on European and national, public and private investments (incl. possibility to assign to the Smart Networks and Services Joint Undertaking (**SNS JU**) a **coordinating role**

White Paper - How to master Europe's digital infrastructure needs? (2)

Pillar II: Completing the Digital Single Market

- **Adapt regulatory framework:** realise full potential of digital single market
 - rethink scope of application and objectives
 - ensure regulatory level playing field (equivalent rights and obligations for all actors and end-users of digital networks)
- **EU core network operators:** leverage full potential of single market
 - application of a single set of rules (Country of origin)
 - change to access policy (EU wholesale access product; no markets for presumptive ex ante regulation)
- **Spectrum:** more integrated governance at EU level; more aligned authorisation and selection conditions
- **Copper switch-off:** measures to accelerate it by 2030
- **Sustainability:** all players to contribute to efficiency of networks and services as well as transparency on the emissions related to service usage

White Paper - How to master Europe's digital infrastructure needs? (3)

Pillar III: Creating secure and resilient digital infrastructures for Europe

- On **submarine cable infrastructures**:
 - Reinforcement of advanced **R&I activities** for new fibre and cable technologies
 - **Joint EU governance system** on submarine cable infrastructures
 - **Harmonised security requirements** in international fora, potentially dedicated EU certification scheme
 - **Delegated Act under the Connecting Europe Facility** on CPEI list and related labelling system
 - Review of available funding and financing instruments, incl. **possible equity fund**
- Recent Recommendation on **Post Quantum Cryptography**

Next Steps

- **White Paper:** [Open for feedback](#) until 30 June 2024
- **Cable Recommendation:** Establishment of the Expert Group and invitations to appoint Member State representatives