6G FLAGSHIP
UNIVERSITY OF OULU

CHANGES IN MOBILE BUSINESS ECOSYSTEMS

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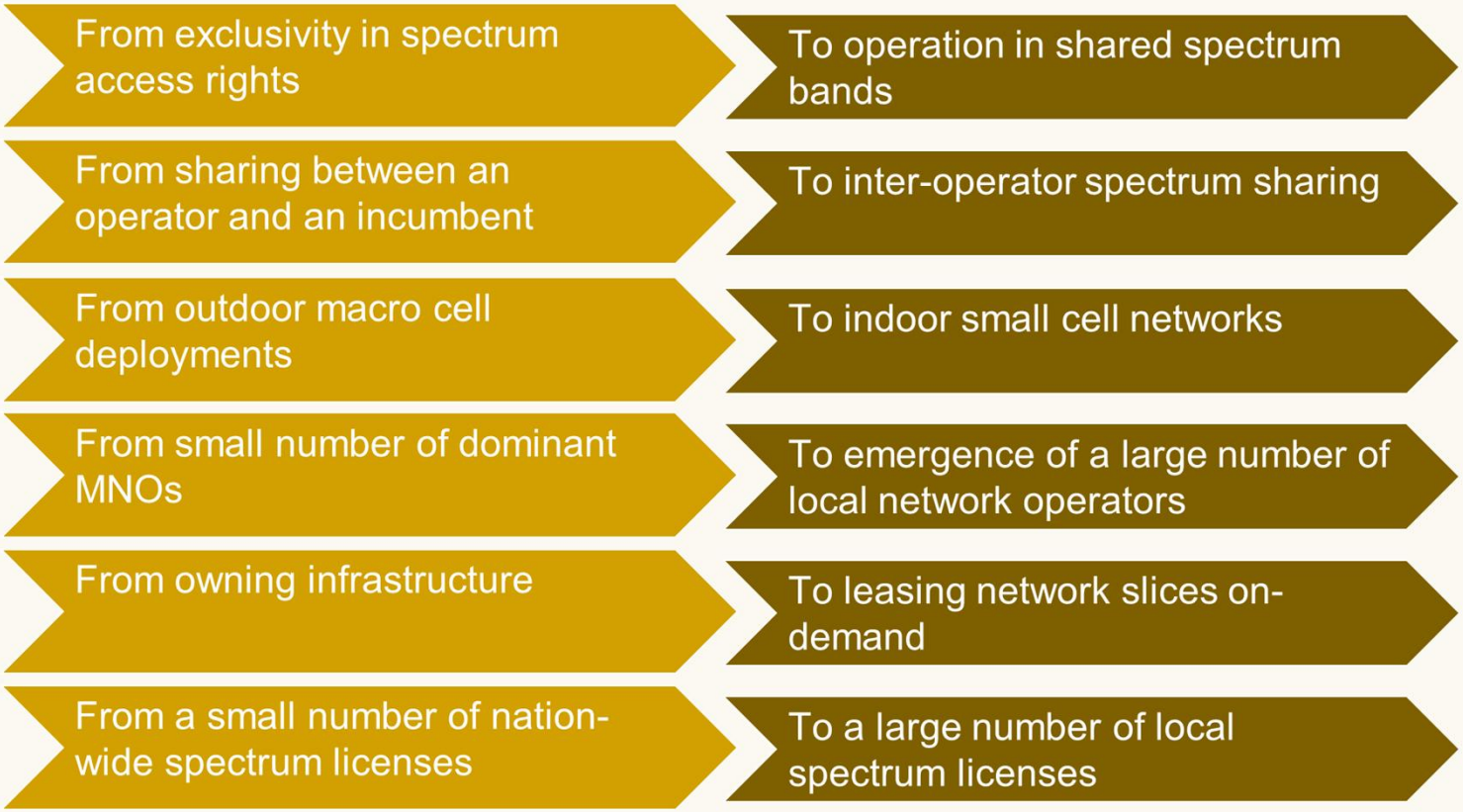
Introduction

- Policy makers have recognized the importance of widespread deployment and timely take-up of very high capacity networks as the key enabler for digitalization.
- The role of 5G is emphasized in revolutionizing the traditional mobile business ecosystem to serve vertical sectors' specific needs.
- This is based on dense small cell network deployments in specific areas – still by the traditional mobile network operators (MNOs).

Trends of change



Matinmikko, M. Latva-aho, P. Ahokangas, and V. Seppänen. On regulations for 5G: Micro licensing for locally operated networks. Telecommunications Policy, vol. 42, no. 8, pp. 622-635, Sept. 2018.

Emergence of a large number of local networks

- Vertical sector specific local cellular networks are gaining increasing interest but are still rare today.
- Majority of 5G research considers MNO driven deployments.
- University of Oulu has actively promoted the emergence of local 5G networks deployed by different stakeholders to serve verticals' specific needs (aka. micro operators).

Local 5G micro operators can operate a closed network for its own customers, act as neutral host for MNOs' customers, or serve both.

Role of regulation

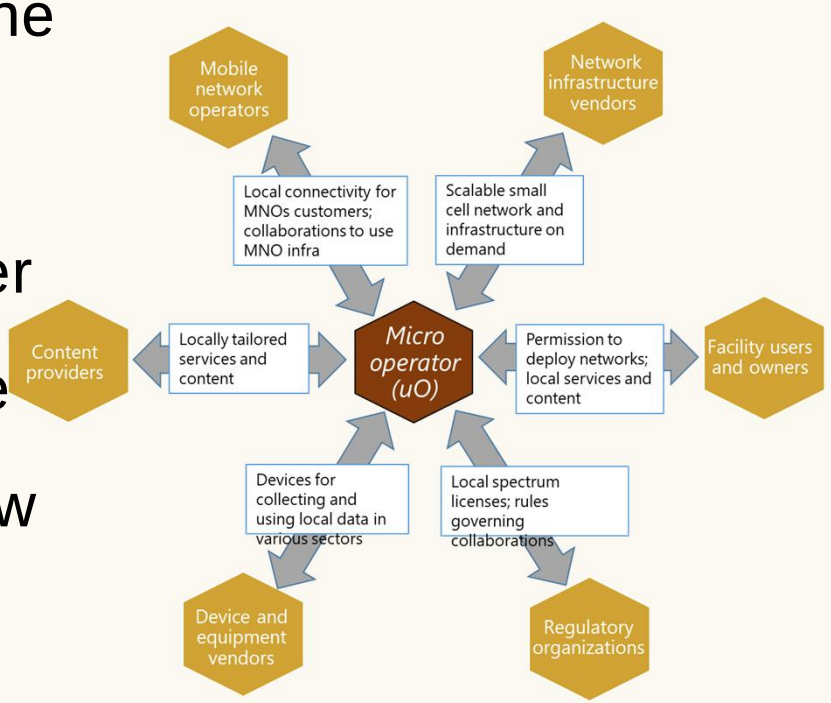
- Regulation is in the key position to shape the business ecosystem by promoting or stopping any development.
- Mobile operator business is highly regulated especially through the awarding of specrum licenses. There are differences between countries.
- In principle, stakeholders' conflicting views are brought together in regulation to promote innovation and competition. In practise, the dominance of MNOs prevails.

Role of spectrum regulation

- Wide range of spectrum in 5G – lots of new spectrum becomes available.
- Most of the first 5G spectrum decisions in 3.5 GHz (e.g., Finland, Italy, UK) follow traditional path giving rights to deploy cellular networks only to MNOs.
- Some countries (e.g., Germany) allow local vertical specific service provider networks to emerge through local licensing.

Business ecosystems

- MNOs' traditional voice and text services have been replaced by mobile data making them bit-pipes. Role of Over-The-Top (OTT) services has grown.
- There will be a wide range of new business ecosystems emerging around the specialised verticals such as industries already in 5G. The stakeholder roles will change.
- 6G development should early on consider the emergence of a large number of locally deployed cellular networks where the users can easily move between the networks. This would result in totally new business ecosystems around 6G.



Conclusions

- 5G was expected to change the mobile business ecosystem with local vertical specific networks but still the MNOs remain the major stakeholder. However, new vertical specific ecosystems will emerge in 5G.
- Starting point in 6G should be to allow different stakeholders to deploy their own local networks to complement MNO offerings.
- Spectrum access rights in 5G/6G should cover a range of sharing-based approaches to allow locally deployed networks.
- As a result, totally new 6G business ecosystems will emerge.

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