



Vertical Specific Service Provider Networks

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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.
- 5G is expected to revolutionize the traditional mobile business ecosystem to serve vertical sectors' specific needs. This development will be increasingly based on local dense small cell network deployments in specific (indoor) areas.
- 6G development will consider the emergence of a large number of locally deployed cellular networks where the users can easily move between the networks.

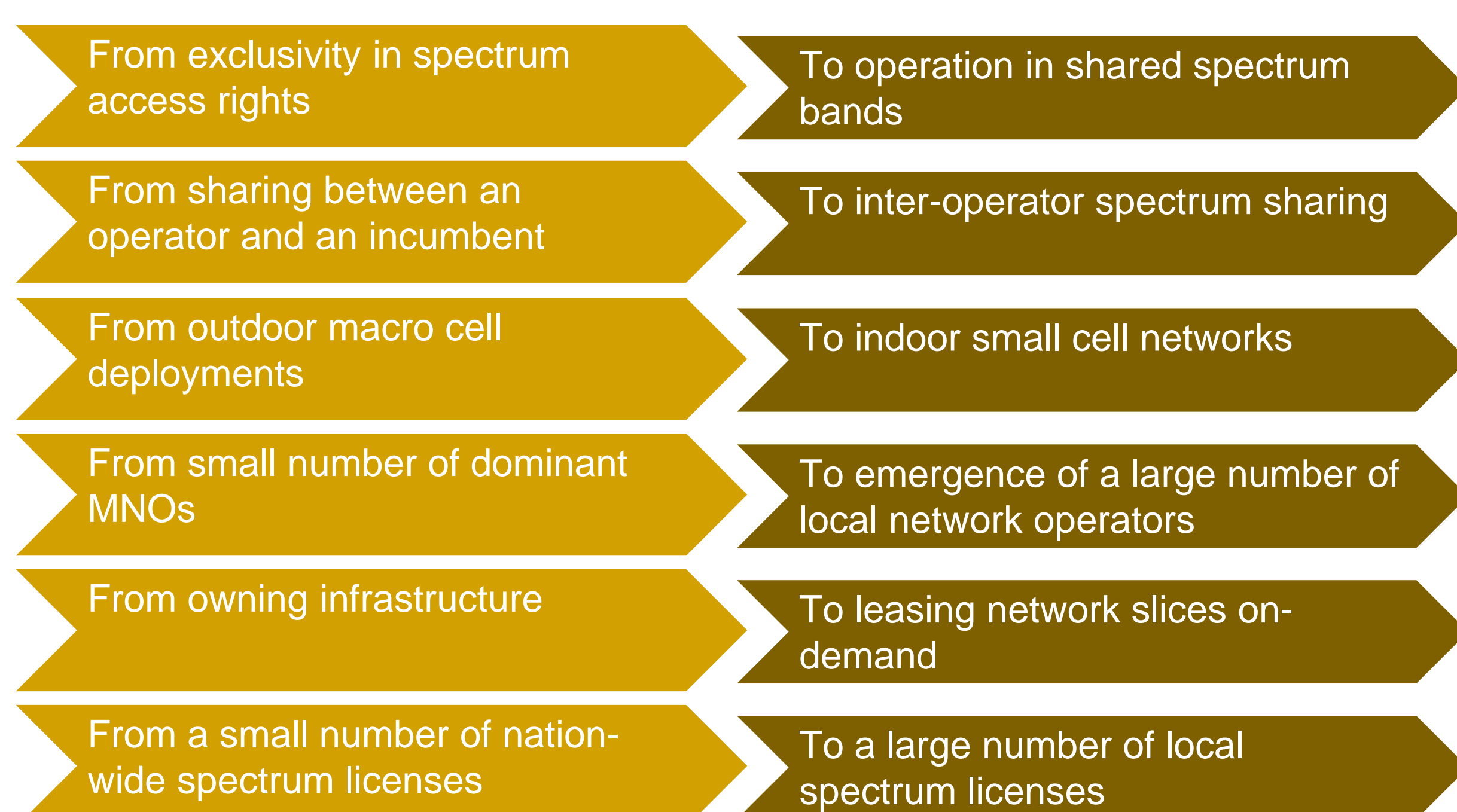


Figure 1: Trends of change in mobile communications.

CHANGING MOBILE BUSINESS ECOSYSTEM

- Mobile business ecosystem is shaped by regulators' decisions on who is allowed to deploy and operate cellular networks.
- Today, only a small number of mobile network operators (MNOs) can deploy cellular networks through long-term spectrum licenses awarded by the national regulators giving them dominant position.
- Mobile communication business ecosystem will change through the introduction of location specific high-quality wireless networks that can be operated by different stakeholders to complement MNOs' offerings.

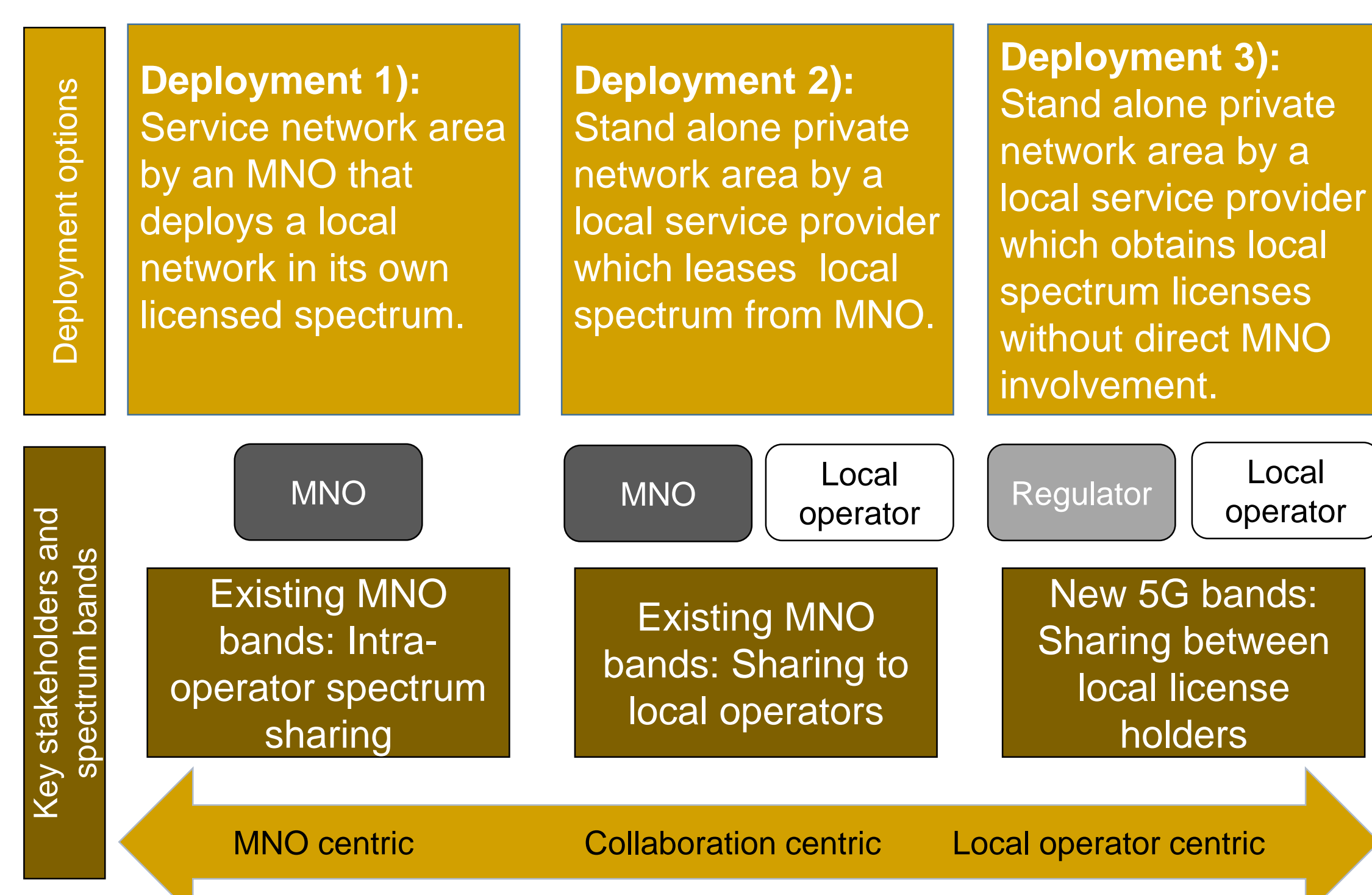


Figure 2: Deployment options for vertical specific service provider networks.

WHAT IS NEEDED FOR LOCAL SERVICE PROVIDERS?

- Viable business models to offer tailored services to various customer groups.
- Regulations to promote the establishment of local networks by vertical specific service providers.
- Local guaranteed access to spectrum with interference coordination between local networks.

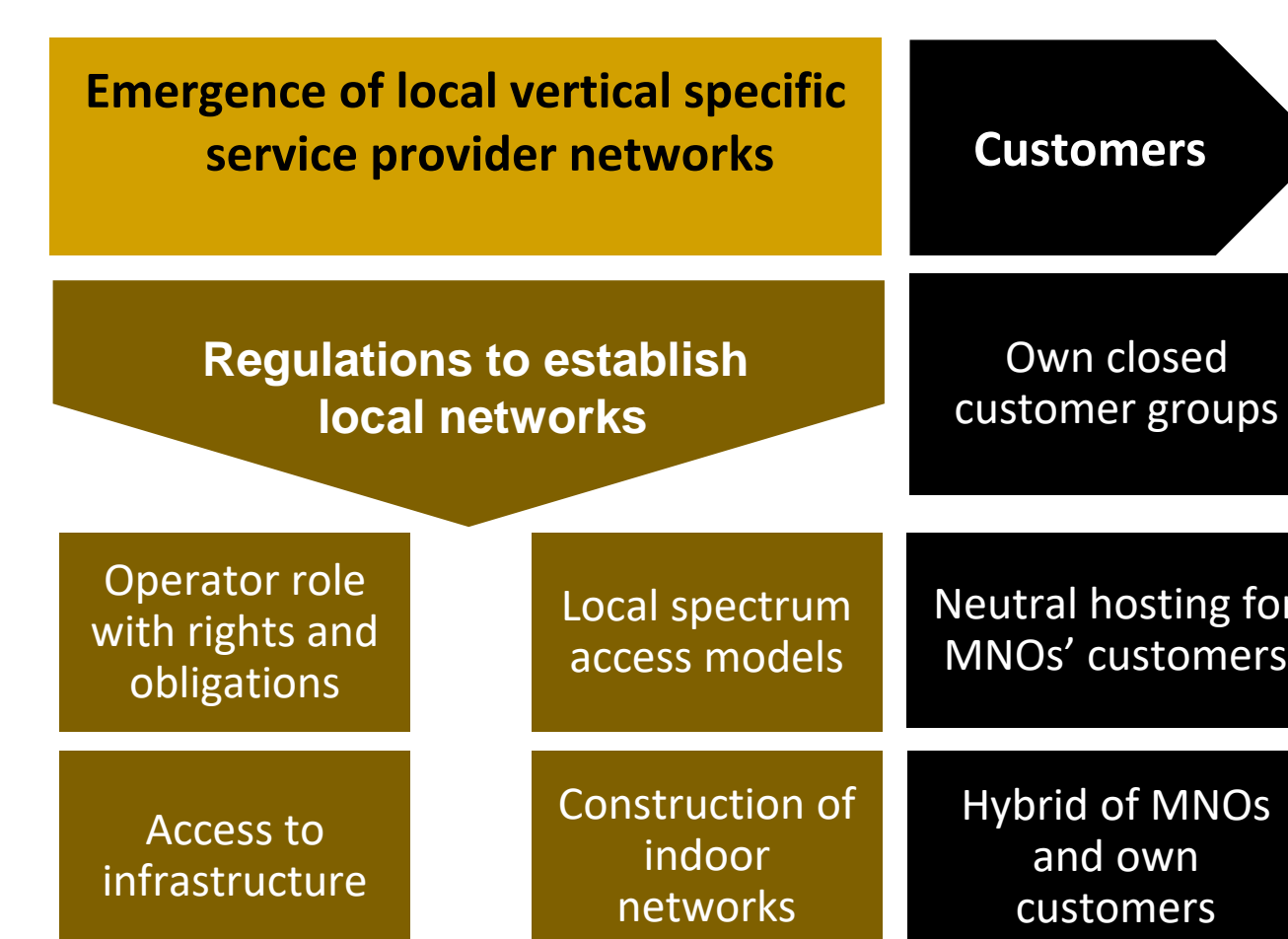


Figure 3: Regulation and customers for local networks.

EMERGENCE OF LOCAL SPECTRUM ACCESS RIGHTS

- Spectrum management decisions aim at maximizing the value of spectrum, its efficient utilization and benefits to the society. They should be done in a fair and transparent way to promote competition and innovation.
- Spectrum sharing solutions that allow several radio systems to operate in the same frequency band are critical in making new spectrum available for mobile communications while protecting incumbent spectrum users' rights in the long term.
- Most of the first 5G spectrum decisions made by national regulators (e.g., Finland, Italy, UK) follow a similar path as 3G and 4G and give rights to deploy cellular networks only to MNOs. Some countries (e.g., Germany, USA) allow local vertical specific service provider networks to emerge through local licensing.
- Spectrum access rights in 6G should cover a range of sharing-based approaches to allow local establishment of 6G networks.



Figure 4: Spectrum access options.

FURTHER READING

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