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Sharing telecommunication resources in Sharing economy concept

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Sharing economy

Sharing economy – *economic model based on collaborative consumption and sharing underutilized assets*

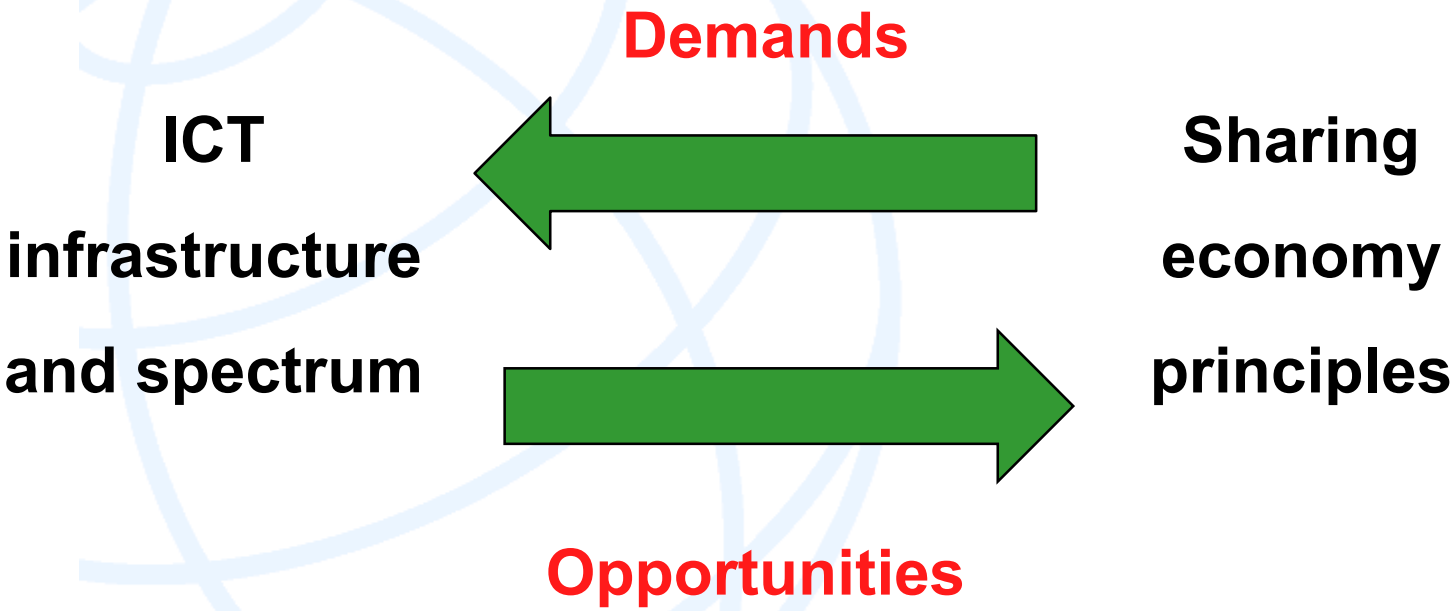
Opportunities of sharing economy model

- P2P interaction
- Effective use of online-platforms
- Reduce operational costs
- Competition

Challenges of sharing economy model

- Regulatory complexity
- Uncertain quality of service
- Unable on Digital Divide
- Necessity of Digital inclusion

Sharing economy and ICT resources



Sharing infrastructure and spectrum resources

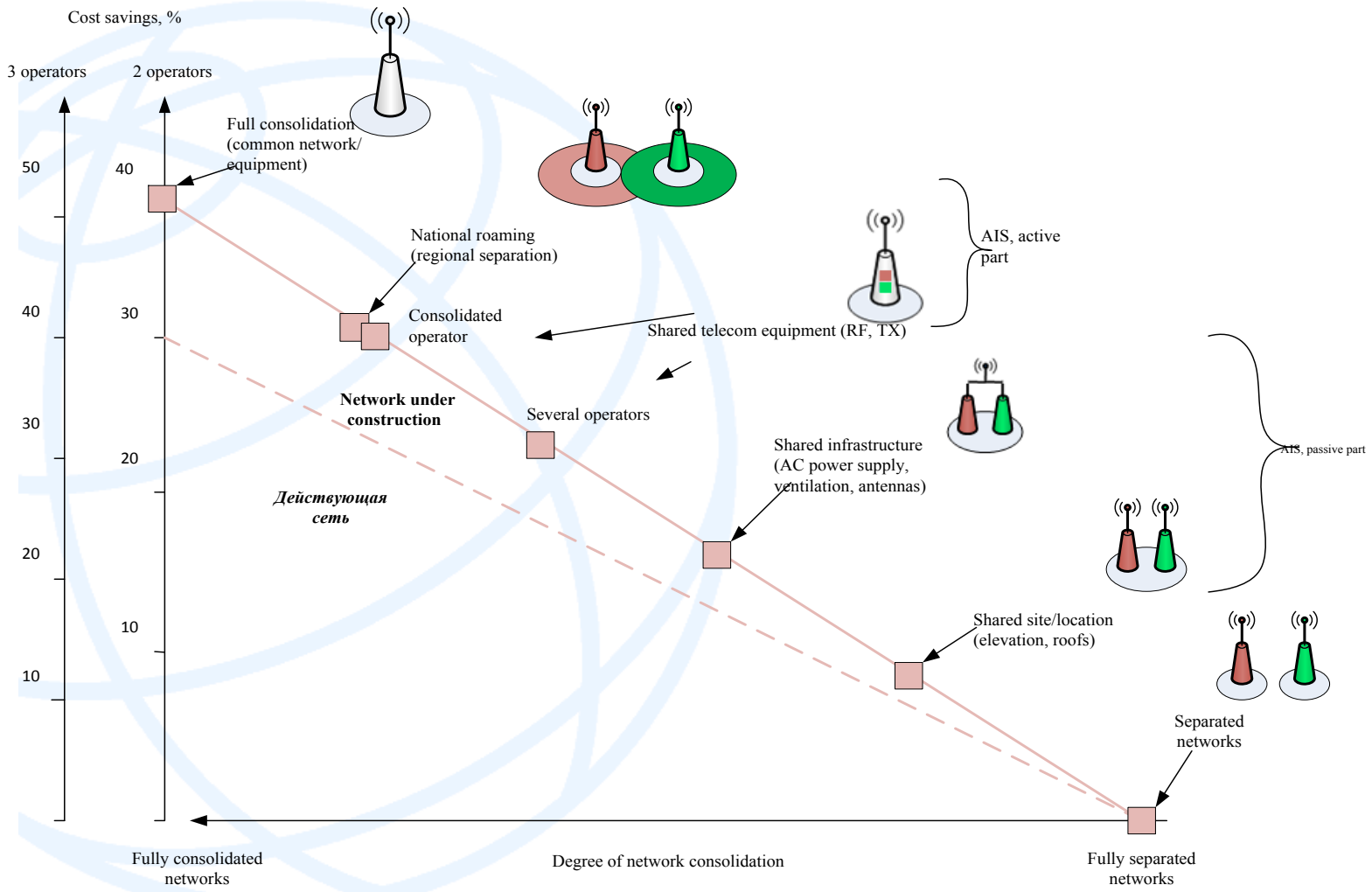
- Infrastructure and spectrum sharing
- Mobile virtual network operators

Infrastructure and spectrum sharing

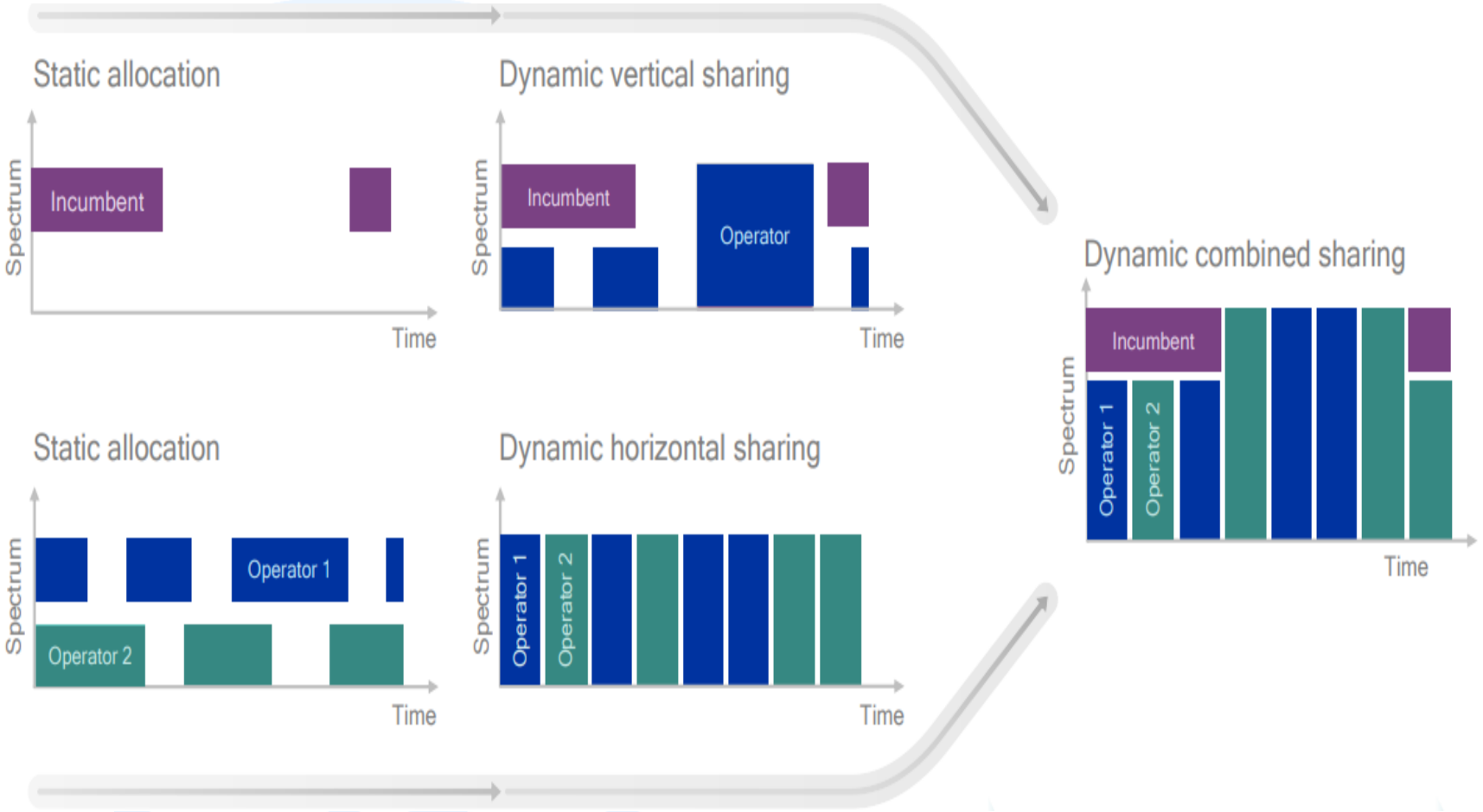
- **Active infrastructure sharing - sharing of radio access network (RAN) elements (antenna, BTS and RNC)**
- **Passive infrastructure sharing - sharing of passive elements of the network infrastructure (masts, containers, towers, power supply and air conditioning equipment)**
- **Spectrum sharing - aggregation of frequency bands assigned to operators**

Source: ***Draft new Recommendation ITU-T D.264 on "Shared use of spectrum and telecommunication infrastructure as possible methods for enhancing the efficiency of telecommunications"***

Infrastructure and spectrum sharing



Priority



Source: https://www.qualcomm.com/invention/5g/5g-unlicensed-shared-spectrum

Mobile virtual network operators

- MNO – mobile network operator. Owns infrastructure and spectrum, provides services to customers and to business
- MVNO – mobile virtual network operator. Not own spectrum, partially own/not own infrastructure, provides limited types of services to customers
- MVNA - mobile virtual network aggregator. Aggregates small MVNOs to interacts with MNO on infrastructure and spectrum matters . Provides such service to business (MVNO)
- MVNE – mobile virtual network enabler. MVNA with better capabilities (can provide services to such as billing, network element provisioning, administration, operations, support of OSS/BSS to MVNOs)

MVNO models

	Radio access	Core network	Applications & Services	Customer care	BSS	Handset management	Marketing and sales
Full MVNO		+	+	+	+	+	+
Service provider				+	+	+	+
MVNE		+	+	+	+	+	

Reseller MVNO

A virtual operator "Reseller MVNO" can potentially offer its own value-added services (VAS), but otherwise has no assets in partnership with the underlying operator MNO. In particular, the Reseller operator does not receive ownership of the subscriber, infrastructure or SIM cards. This model also prevents the virtual MVNO operator from setting prices. The proprietary reseller model allows MVNO to take advantage of working under its own brand (or in conjunction with MNO). The reseller is responsible for branding, sales and distribution costs and shares revenue with an MNO partner.

E*xample of Reseller MVNO – Non-telecommunication enterprises*

Service provider MVNO

A virtual operator "Service provider MVNO" does not own the infrastructure; such an operator can own network subscriber management control platforms, application platforms, and billing platforms. This production activity scenario provides for the possibility of owning a SIM card and setting tariffs (prices for services) regardless of the tariffs set by the base MNO operator.

The brand of such a virtual operator, as in the model "Reseller", can be independent or jointly issued with the base operator MNO. In this scenario of production activity, MVNO also provides for the ownership of its own subscriber base, so the income received can come directly from the outgoing traffic for the provision of services. The virtual operator is responsible for the structure of wholesale tariffs for services, as well as for the costs of its IT platforms (in addition to the costs of branding, sales and the network of sales of services that MVNO pays for the Reseller scenario).

Ex*ample of Service provider MVNO – DTV broadcasters*

Light MVNO

A virtual operator "Light MVNO" does not have the ability to own the entire network infrastructure, but this model gives ownership of the client and the intelligent network platform — and even partial ownership of the VAS platform. The virtual operator's revenues come from both incoming and outgoing traffic, and in this scenario, the MVNO operator is responsible for the same expenses that are paid according to the model of the service provider — for example, tariff structures, IT platforms, branding, sales and distribution.

Ex*ample of Light MVNO – local/ethnic operators*

Full MVNO

All of the business advantages of the owner of the core network of a mobile operator, and also covers the costs of creating and operating all elements of its own core mobile network (CN). When choosing the Full MVNO model, the virtual operator must also provide the required level of network performance (NP) and service provision (QoS) in its network.

Ex*ample of Full MVNO – big operator coming to the new national telecom market after all of the frequencies were already auctioned*

Full MVNO

Indicators	MVNO models			
Abonents	MNO/MVNO	MVNO	MVNO	MVNO
Max project funding, USD	4-6	7-12	15-20	10-15

International Telecommunication Union

Thank you very much!!!