Complementary Mobile Operator Business Models to Facilitate Fast Emergence of Digitized Society

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Background

• Growing digitalization requires that versatile location and case specific requirements are met in different environments with high traffic densities particularly in indoors.

• Today, the wireless connectivity market is dominated by big mobile network operators (MNOs) whose business model is to offer services to the masses.

• This model becomes insufficient and various verticals and services cannot develop without rapidly responding to case-specific, increasing and versatile local traffic requirements.
Verticals for 5G deployments

- ICT
- Health
- Manufacturing
- Finance & Trade
- Utilities
- Education
- Construction
- Media & Entertainment
- Transport & Logistics
- Food
Need for indoor small cells

• As growing amount of mobile traffic originates from local indoor usage, serving the high traffic hot spots with traditional cellular networks becomes insufficient as building penetration losses limit the indoor connectivity.

• Construction of indoor small cell networks should be made easy, cost-efficient and flexible to meet the facility owners and customers’ local case-specific needs in different verticals.
Changing business logic

Today:

• Big MNOs dominate the wireless connectivity market and offer the same services.

• Entry barrier to the mobile market is high due to high investments needed and limited availability of spectrum licenses which are high-cost, long-term and have coverage obligations.

Future:

• Convergence of telecom and internet domains and changes in regulation disrupt the traditional mobile market and open it to new entrants.

• New local connectivity market is established where different verticals have versatile requirements for fast and scalable deployment.

• Sharing economy approach emerges where the assets currently owned by some stakeholders, are shared and used by others to make new revenues.
Micro-operator (uO) concept

- We propose the concept of micro-operators (uO) to build indoor small cell communication infrastructure and offer local context related services and content to complement existing mobile connectivity with the help of emerging 5G technology and locally issued spectrum licenses.
Micro-operator (uO) business model

- Operate local small cell network(s) for efficient delivery of tailored services at a given location with guaranteed quality.
- Own infrastructure to support any MNO customers for efficient local service delivery.
- Offer context related services and content in local areas by combining connectivity data with customer data into unique and local service offerings.
- Allow rapid development cycles in verticals.
What is needed for uO?

- **Regulation** that assigns local licenses for uOs and makes building of indoor connectivity feasible
- **Business models** that are scalable across different verticals
- **Technology** for local small cell deployments and leasing of the required infrastructure on-demand
Supporting 5G features

• Higher carrier frequencies facilitating more efficient frequency reuse and local licensing
• Virtualized network functions for separating the required network capabilities for local players
• Mobile edge computing capabilities for local service provisioning

> New 5G network functions become a platform for uO to take full advantage of the localized shared spectrum and telecommunication cloud resources with rapid content processing delivering ultra-responsive experience.
Emergence of new stakeholder roles

- Facility constructors
- End user devices vendors
- Application developers
- Infrastructure constructors
- Regulatory organisations
- (IoT) Equipment vendors
- Infrastructure vendors
- Standardization organisations
Finnish 5G trial ecosystem at University of Oulu

- Finnish 5G trial ecosystem is open for the emergence of new stakeholder roles by bringing together regulators, industry, operators, facility owners, application developers and end users to design and demonstrate a fully operational uO concept.

http://www.tekes.fi/5thGear
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