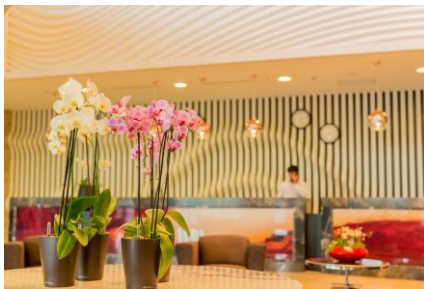# The Business Case for MulteFire

Stephan Litjens

Board Chair, MulteFire Alliance
VP, Innovation Steering, Nokia

MulteFire Enables Innovation and New Business Opportunities

- Delivers LTE-like performance with Wi-Fi-like deployment simplicity

- Allows anyone to create, install and operate their own private or neutral host MulteFire network

- Creates new business opportunities that allow existing and new market verticals to deploy and benefit from the LTE technology and ecosystem

MulteFire Delivers Key Performance Advantages

Capacity
Low to high data rate applications, large number of devices

Coverage
Superior range, both indoors and outdoors

Seamless mobility
Seamless handovers, high mobility devices, service continuity with WAN

Industry-grade reliability
Customized QoS classes guaranteed latency

LTE-based security
Both SIM & non-SIM credentials, locally routed traffic for privacy

Future proof
Rich LTE roadmap: VoLTE/voice, IoT optimizations like eMTC

MulteFire Deployment Models Serve New Business Opportunities

Allows more entities to deploy and benefit from the LTE technology and ecosystem

Neutral Host Access Mode

Traditional Access Mode
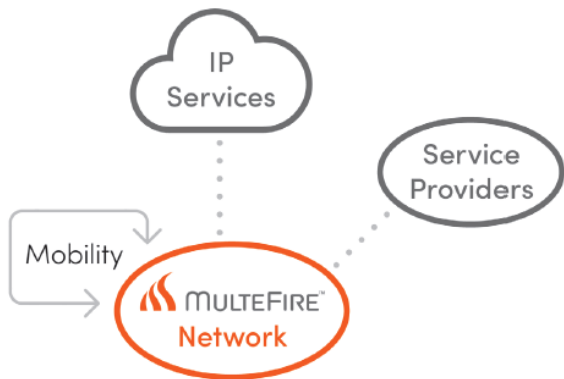
Self-contained, single deployment
can serve multiple operators
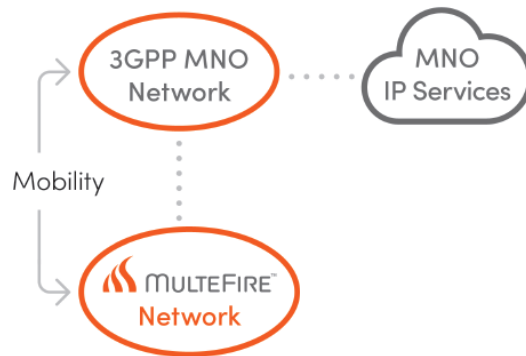
Single network operator,
e.g. private IoT Network or MNO

Neutral Host Enterprise Example – Challenges for a Hotel Chain

Capacity/Coverage : wide area network cannot fully serve all geographically dispersed sites

Cost sensitivity: Partnership with MNO deployed DAS/small cell at all locations not always cost-effective

Reliable wireless required: robust wireless connectivity is a required amenity—serving any user

Neutral Host Enterprise Example – Benefits for an Airport

Enhanced voice and data cellular access for passengers, guests and MNO subscribers

Dedicated access to business tenants such as restaurants, bars, lounges, etc.

Secure wireless to airport operating agencies, support staff and government agencies

Additional IoT services: wireless surveillance, monitoring of assets and IoT devices

Enterprise – MulteFire Cost Structures and Revenue Streams

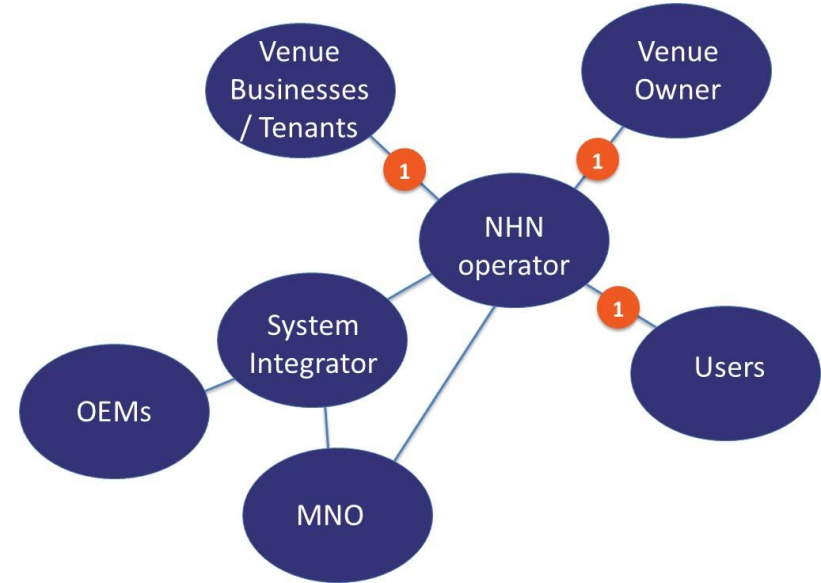Hotels

Airports

One-time costs
Survey and design labor
Hardware and software infrastructure
Installation, construction, labor

Recurring costs
Circuit and backhaul
Monitoring, maintenance labor
Break/fix

Revenue streams (potential clients)
Solution provider
Airport business group/airport owner
Service provider
MNO

Multiple business models possible

1. Non-MNO is the Neutral Host Network Operator
2. System Integrator is the Neutral Host Network Operator
3. Venue Owner is the Neutral Host Network Operator

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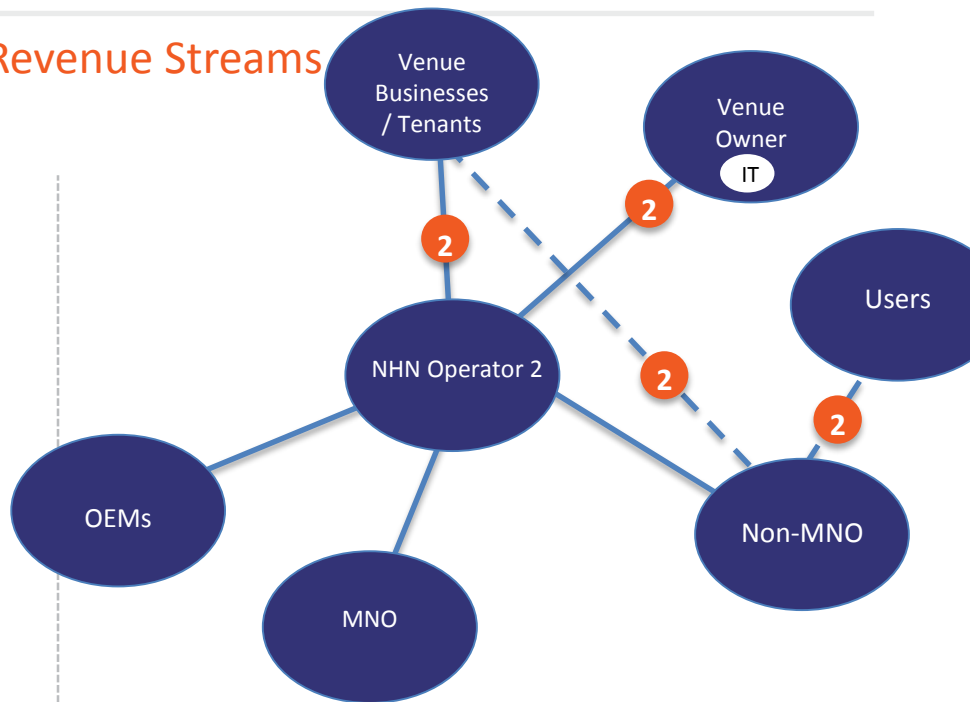
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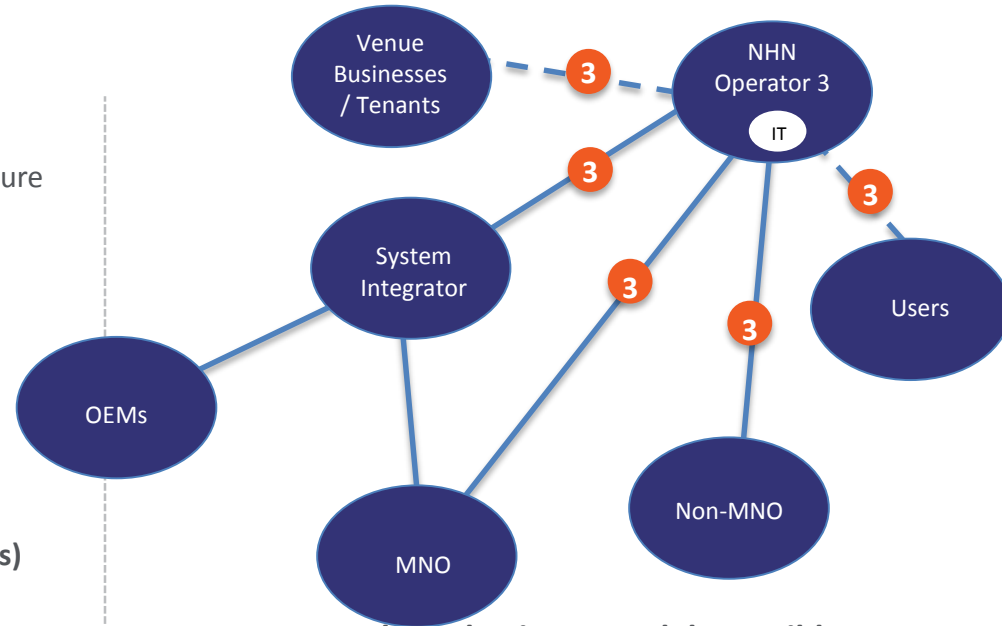
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Revenue streams (potential clients)
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Airport business group/airport owner
Service provider
MNO

Venue Businesses / Tenants

NHN Operator 3

IT

System Integrator

Users

OEMs

MNO

Non-MNO

Multiple business models possible

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Industrial IoT Example – Challenges for a Port

Capacity: Hundreds of Wi-Fi access points are deployed to accommodate multiple-services; adding more APs increases interference and decreases capacity

Coverage: Signal blocked by complex surroundings (containers, cranes, trucks) that interrupt connectivity links

Mobility and Reliability: Requires low latency (<100ms), high link stability with high mobility 24/7

Port Services that MulteFire Supports

- ***Control and command***: Automated Guided Vehicle
- ***Task dispatching:*** Tallyman/Crane Terminal Operating System, Trunking
- ***Broadband data:*** Crane controller video transmission, surveillance
- ***IoT services:*** Robotic Container Management System, Truck status monitoring
- Co-existence with Wi-Fi

Private MulteFire Networks Enable New IoT Deployment Scenarios

Wide-area fallback

Locally controlled

Dedicated LTE equipment, independent of surrounding cellular network

Optimized

Network tailored for industrial applications, e.g., quality-of-service, latency

Readily deployed

Unlicensed/shared spectrum available, hosted or self-contained EPC, self-organizing network

MulteFire Enables Innovation for New Vertical Markets

- Enhanced coverage, capacity, seamless mobility, reliability and security

- Leverages LTE features—Release 1.1 will add further IoT optimizations

- Supports both neutral host and single operator deployments

- Neutral host enables new business models

- Exciting opportunity for 'Private networks' – especially in the Industrial IoT area

Thank You