

# Network sharing and 5G: A turning point for lone riders

Network sharing will be a key lever to reduce cost and make 5G deployments feasible.

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Network sharing has become a standard part of the operating model for mobile operators, and the trend is accelerating. Operators have been able to reduce the total cost of ownership by up to 30 percent while improving network quality through sharing a variety of both active and passive equipment. 5G will be no exception, with operators eyeing new ways of accelerating the deployment of an otherwise daunting investment.

The cost savings potential for network sharing is even stronger with 5G, as greenfield deployment is better suited for sharing because it avoids the cost of network consolidation. For example, the cost of small cell deployment can be reduced by up to 50 percent if three players share the same network. But the rationale for sharing extends beyond cost, as it could solve many practical roadblocks of 5G deployment in urban areas, such as the potential for urban disruption and visual pollution from the installation of excessive equipment and fiber.

Given these arguments for network sharing, operators will need to have strong commercial rationale to justify stand-alone deployment of 5G, rather than sharing a common 5G network. Although such cases may exist for certain operators in particular markets, for many operators, sharing will be a necessity and requires preparation now.

#### 5G deployment: Increased cost and disruption to cities

As operators gear up for the next wave of infrastructure investments to support innovative 5G use cases and ever-growing customer demand for mobile broadband, the numbers look more daunting than previously expected. To proceed alone, network investments would have increased by up to 60 percent with a significant increase in operating expenses, doubling total costs from 2020 to 2025, according to one of our analyses in

a European context. This is much more expensive than many in the industry expect. This investment would be required for the deployment of a new, countrywide 5G IoT macro layer, small cells in urban areas, and the evolution of and capacity upgrades to the existing 4G macro network. (See the related article, “The road to 5G: The inevitable growth of infrastructure cost”).

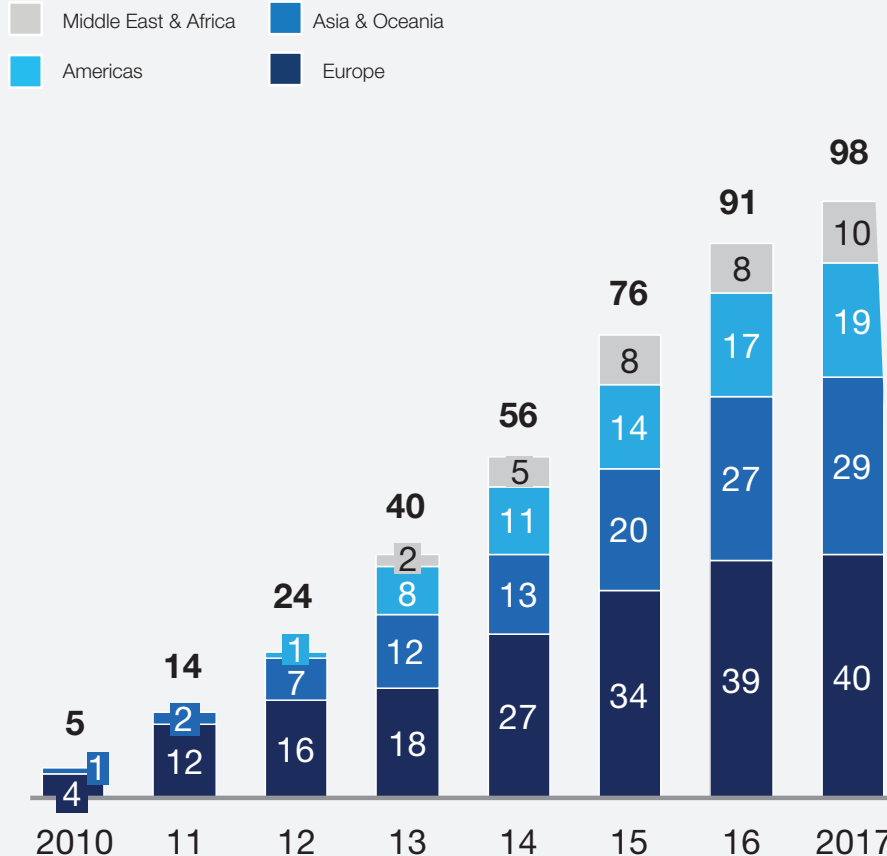
In addition to the financial challenges of operating alone, which include the risk of limited revenue upside, operators will face increasing physical constraints when densifying their networks in urban areas. A simulation of a 5G build-out from 2018 to 2025 showed that the number of macro sites needed would increase by approximately 20 percent, in addition to new small cells, equal to 100 to 150 percent of the current number of macro sites. Installing the equipment and underground fiber lines required for this level of densification would involve a massive physical disturbance, primarily in already cramped urban settings.

#### Network sharing is compatible with different 5G strategies

Operators are already contemplating their options for 5G deployment. The approach typically falls into two groups: market leaders that believe in commercial acceleration and the price premium of network superiority, and cost-effective attackers that compete on other dimensions. In Europe, where active network sharing is frequent, we have seen that sharing can be applied in both situations, although with different strategic rationales. Two market leaders in a four-player market might be willing to share a superior network to polarize the market, for example, or two attackers might join forces to improve network quality and compete jointly against the market leader. In fact, network sharing has become increasingly common since 2010 (Exhibit 1).

**Exhibit 1 Active network sharing has become more common worldwide.**

**Cumulative number of active network sharing agreements announced 2010 – 2017**



Source: GSMA Intelligence; Ovum; McKinsey analysis

Like in previous generations of sharing, 5G network sharing can be further adapted to support competitors' different needs, such as through depth of sharing (small cell versus 5G IoT macro layer), or setting up different sharing models in competitive urban markets versus rural coverage areas. Tailoring deals to specific situations allows operators with different needs to find common ground and uncover new savings.

In the most extreme cases—to maximize benefits—a single 5G network could be built in

which all players in the market gain wholesale access. Entry to the market would still be controlled through spectrum ownership, and competition for services would remain unchanged. Some regulators, such as in Australia and Singapore, are promoting this idea of fixed networks.

Many players in the value chain have already started betting on network sharing. Tower companies, for example, are predicting densification in urban areas and have already

started securing access to lampposts and rights of way, and buying up fiber infrastructure.

#### Design standards and regulators can enable network sharing

With 5G standards still not yet finalized, the telco industry has pushed for native design for network sharing. The 5G technologies will build on

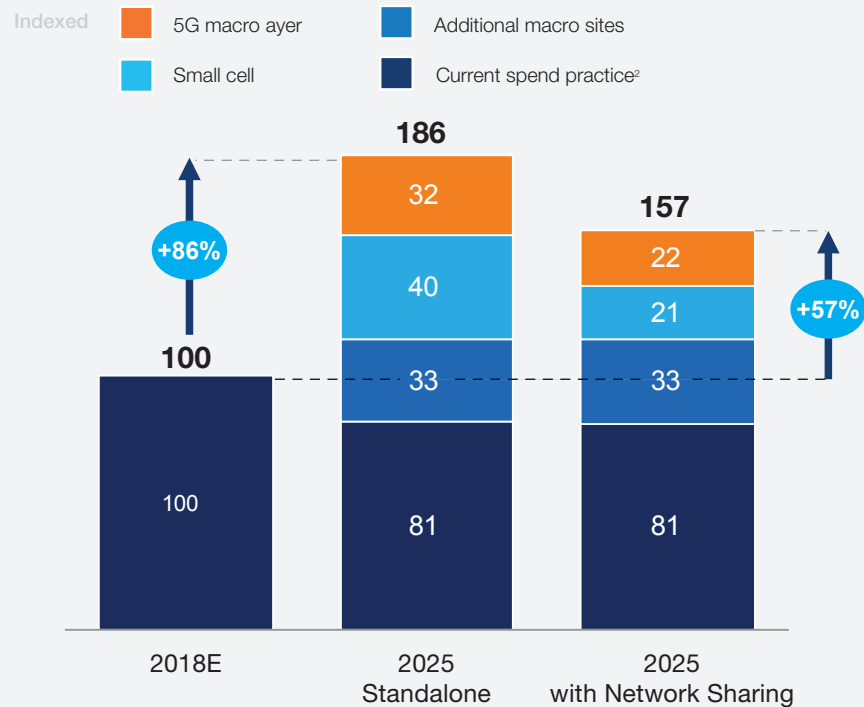
existing sharing models from the prior generations (MORAN , MOCN ) but will be supplemented with new features such as network slicing, which allows dynamic resource allocation to specific traffic or use case groups among operators.

Network sharing also is a means to accelerate 5G deployment, and to minimize disturbances from

### Exhibit 2 Network sharing can reduce 5G cost by more than 40 percent.

35% Annual traffic growth assumed

#### Access network TCO<sup>1</sup> evolution



**Network sharing is a lever that can reduce ~40% the cost of 5G related access network domains (small cells and 5G macro layer)**

<sup>1</sup> Total cost of ownership includes both operational and capital expenditure.

<sup>2</sup> Total cost of ownership of current network footprint, including capacity LTE & LTE-Pro upgrades.

Source: McKinsey analysis

construction work and visual pollution. While telco mergers are often blocked or approved only with significant remedies, network sharing deals have been approved in most cases, and are even encouraged in many markets. Given that we are still in the early days of 5G, operators have the opportunity to participate in regulatory dialogue on alternative development paths and conditions for deployment.

### Compelling case: Possible 5G cost reduction of more than 40 percent

The strongest rationale for sharing will be cost savings and improved network quality. This is especially true for greenfield deployments such as small cells, where three operators can save up to 50 percent each through sharing, according to our research. Simulations from one case showed that by sharing 5G small-cell deployment and building a common, nationwide 5G IoT macro layer, operators could reduce 5G-related investments by more than 40 percent (Exhibit 2). At the same time operators could also reduce the risk of their build-out plans by sharing access to capacity and paying accordingly.

### Now is the time to start negotiations

The cost of exploring network sharing is relatively low given the scale of the opportunity. Achieving a network sharing agreement is a complex and timely matter. The time from initial discussions and feasibility analysis to a signed contract can easily be six to nine months. If operators plan to meet expectations for 5G deployment before 2020, or act before they are forced into 5G deployment by competitors, they need to start now.

### SUMMARY

The expected costs involved with building out 5G technology are higher than anticipated, according to our research, with network investments for

new uses going up as much as 60 percent, along with a significant increase in operating expenses. Network sharing offers strong potential for cost savings. Yet operators must act now to participate in decisions that could accelerate—or impede—network sharing for 5G. ■

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