The New Reality of Network Cooperation

Mobile Network Operators Should Partner While the Window of Opportunity Exists

Mobile operators are increasingly turning to active Radio Access Network sharing, especially on 3G and LTE, in order to manage new CAPEX requirements and to achieve new levels of business performance.

Successful deals in infrastructure partnership in many markets are evidence of a new business reality. Market players see significant economic benefits from Radio Access Network (RAN) sharing, although a variety of strategic issues must be addressed and regulators may scrutinize any indication of reduced competition. However, the best partnering options are finite and those who move first have the most to gain, while simultaneously limiting options for followers.

What is triggering the surge in cooperation?

Maturing markets are forcing operators to find new ways to reach financial targets – and the financial crunch only brings more pressure to better manage CAPEX to sales ratios. Despite years of cost reductions and various levels of site sharing, there is increasing recognition that more significant and sustainable cost-base redesign is now required. This can be achieved through structural reforms and deeper RAN cooperation.

Spectrum is being reallocated and new frequencies are being awarded through auctions. In addition to raising cash for governments, the objective of these auctions often include extending broadband in rural areas or re-balancing operators' spectrum ownership, especially at lower frequencies. For this reason, these auctions are being designed to allow, and even encourage, bid consortiums. Bid consortiums enable the sharing of license costs, and can also increase chances of winning valuable spectrum.

New investment requirements in latest technology are necessary to address the explosion in data traffic. Global LTE infrastructure investment, for example, is estimated to reach $14 billion by 2015. Such investment in a climate of already low and decreasing retail prices presents a challenging business case in stand-alone scenarios. Partnerships offer the opportunity to share the significant CAPEX and OPEX involved.

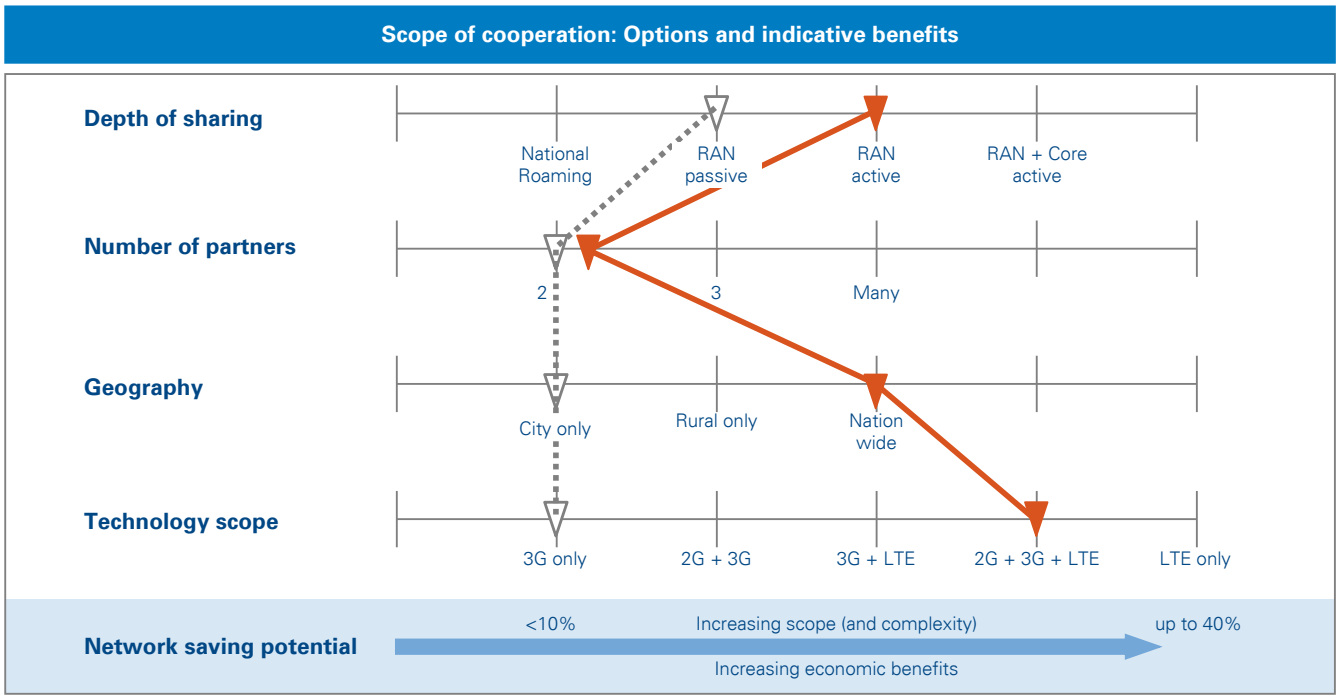
Technology is maturing to a point where multiple frequencies, technologies and operators can be served out of one "box" making active RAN sharing increasingly realistic. While there are still limitations in terms of the number of bands, technologies and operators that can be supported by current equipment offerings, there is motivation to resolve these constraints by the time LTE takes off significantly, expected in 2012-2013.

Vendors look towards becoming managed services providers and are increasingly imaginative in their offers for new contracts, presenting MNOs another opportunity to redesign their cost base. Additionally, *Private Equity* firms are eyeing opportunities in new generation access, given the rising demand for high speed data. Harbinger Capital is a case example with their plans for a hybrid terrestrial / satellite LTE network providing wholesale capacity to multiple operators across the United States.

Why partner? In search of better economics

The most obvious benefit to partnership is the economic sharing of investment and operational costs. The scope of cooperation determines the extent of achievable benefits. Figure 1 (overleaf) illustrates the scope of cooperation together with indicative network savings potential.

Figure 1. Scope of cooperation and potential economic benefits



Source: Arthur D. Little

The depth of sharing from passive to active RAN through to core systems yields significant CAPEX sharing. The geographic extent of the partnership determines the volume of sites that can be pooled and increases opportunities for site rationalization. Further gains can be made if spectrum is pooled where it yields increased utilization of jointly available frequencies. Cooperation can focus on specific technologies and frequencies, or consolidate retrospective technology and new deployments. It should be noted however that absorbing retrospective technologies such as 2G and 3G will require additional investment to facilitate the rationalization. Operator CAPEX can be further reduced either by extending the cooperation beyond two operators, or by including equipment vendors or financial investors.

The benefits of RAN sharing extend beyond investment sharing and cost reduction, and can include the faster deployment of HSPA or LTE, better coverage, and better quality of service with higher speeds and capacity. There is also the opportunity to adjust P&L structures through pricing arrangements between the cooperation entity and the MNO owners. For example, a joint venture can offer its MNO shareholders risk sharing with volume commitments, virtual access pipes and other contractual arrangements, such as the hedging of longer term data capacity, in a similar way as heavy energy users secure their longer term energy needs with a variety of supply contracts.

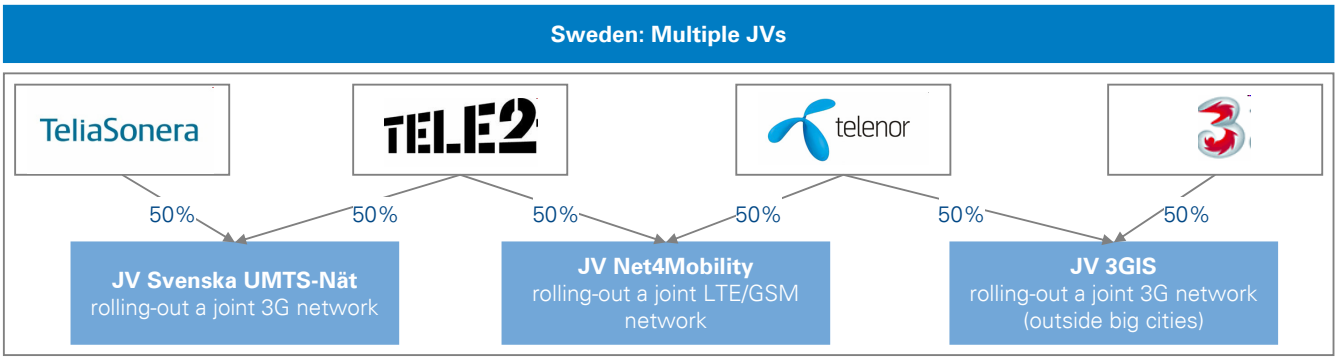
Who should partner?

Beyond the economics of partnership lie strategic opportunities. For example, leading operators in a market often see logic in cooperation with challengers in specific areas such as roll-out of new shared LTE networks. In the UK, the T-Mobile / Orange merger upturned the market dynamic and took these 3rd & 4th players to pole market position. There are also opportunities for economies of scale, such as increasing the potential for exclusive deals for devices and content. Indeed, many markets offer a range of possible motivations for cooperation and an impressive number of potential partnerships. In Sweden, for example, four operators have managed three joint ventures, as shown in Figure 2 overleaf.

Partnerships may also present other opportunities. For example, many mature MNOs have ongoing transformation programs. Partnerships and asset-owning joint ventures, in particular, offer new scope for organizational redesign, outsourcing opportunities and the reassessment of retrospective technologies and associated operational cost.

New partnerships also offer significant opportunities for equipment vendors to extend their portfolio into managed services and re-draw past sales maps with new vendor swap-out opportunities.

Figure 2. Sweden – A joint venture for every occasion



Source: Arthur D. Little

Lessons learned to increase the chances of success

There are many examples of MNOs that have reaped significant economic benefits from deep RAN cooperation, while other partnerships have failed to take off. Based on analysis and casework, Arthur D. Little offers insights into key considerations that impact the chances for a successful partnership.

The first and foremost consideration is the choice of the right partner. Partnerships will have the best chances for operational success and yield the greatest benefits when the two parties have complementary characteristics. Top of the list might be how each potential partner views their radio access assets. Are they considered predominantly revenue differentiators or opportunities for cost reduction? If one operator has a unique frequency allocation, then it will most likely consider it a revenue differentiator and view any cooperation with a different set of financial goals from the other operator which may be thinking purely in terms of cost reduction.

Moving to more operational issues, specific technical parameters, such as geographic and capacity needs, frequency bands, needs of product portfolios including quality of service parameters and vendor choices (current and future) will also shape the complexity of future operations.

It is also important for the potential partners to have an aligned view of business parameters, such as levels of funding, timing of investments, current restructuring projects or other existing or pending cooperation deals.

Any partnership must be designed and implemented from legal, commercial, technical and organizational perspectives:

- *Infrastructure cooperation* has to be distinctly separated from retail competition to avoid regulatory objections. Asset ownership and transfers need to be considered, except in the case of a virtual partnership. Many possible constraints also need to be addressed, such as restrictive site agreements or ongoing commitments related to equipment.
- *Commercial models* should be designed to be as pragmatic and simple as possible. Managing traffic asymmetry and establishing rules for the triggering of new capacity investment is a key topic. If both parties see significant benefits in cooperation, it is not necessary to balance and cross charge each other for every peak loading event. Virtual asset models, while appealing from a legal perspective, can result in more complicated commercial and operational processes later; care is required to balance ease of set-up with ease of subsequent operation.
- *At the technical level*, the choice of equipment vendors for installed and planned equipment is key. While latest technology enables MORAN and MOCN (Multi Operator RAN / Core Network), the combination of different bands, the range of technologies being absorbed in the cooperation and the number of operators being served by the platform will likely meet limitations in the equipment eventually. Multiple equipment vendors can be retained in the overall network, adding a level of complication, but going to multiple suppliers for multiple operators in one region exceeds the capabilities of equipment, such as Radio Network Controllers. In short, not all combinations work and only a few suppliers can manage specific scenarios. Operators in a partnership need to carefully design their technology integration plan.
- *At an organizational and governance level*, a key success factor is the mutual trust in the partnership platform. In the case of a joint venture, recruiting the top management externally or from both companies may help significantly. The neutrality of the JV is essential to overcome difficult decisions, such as the alignment of business priorities, procurement, ensuring shareholders meet investment obligations and that investments are made in mutually agreed areas and meet the needs of all parties. In any case, exit clauses need to be defined in the Joint Venture Agreement with as much design and planning effort as the cooperation itself. This should not be perceived as pessimistic; flexibility for future reconfiguration has to be considered an essential part of the cooperation.

Conclusions

Mobile operators need to recognize that the economics of their industry has changed and that historic independence at every level needs to give way to smarter economic structures and partnerships, especially in terms of infrastructure. Regulators, which have successfully fostered competition to reduce prices, need to recognize and tolerate operators' increasing need to collaborate on infrastructure. Vendors can play a key role by proactively supporting, and even driving, partnerships, especially in LTE. With their interests in managed services and the opportunity to re-draw past sales maps, they have reason to also consider financial participation in joint ventures.

Technology improvements continue to make deeper active sharing increasingly feasible. While technical aspects need detailed joint design and planning, a partnership's greatest challenges relate to the legal structure, valuation, commercial models and operational management. Joint ventures often offer a path to the most significant and substantive cost base redesign, but significant benefits can be achieved through a variety of partnership vehicles and there are many models from which to choose. Good options do not necessarily require elaborate design; partners can benefit even from smart reciprocal deals.

Finally and most strategically, when a potential cooperation is considered in detail, the best partnering options are reduced quickly. First movers stand to benefit most, while simultaneously limiting options for followers in that market. Now is the time to be smart on partnerships. And whilst we are still in early days of this new game, great opportunities exist in most markets.

Acronyms

3G – 3rd generation mobile technology

CAPEX – Capital Expenditure

HSPA – High Speed Packet Access

JV – Joint venture

LTE – Long Term Evolution

MNO – Mobile Network Operator

MOCN – Multi Operator Core Network

MORAN – Multi Operator Radio Access Network

OPEX – Operating Expenses

P&L – Profit and loss

RAN – Radio Access Network

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Arthur D. Little

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