

WHOLESALE NETWORK SHARING

EVOLVING THE MODEL

New ways are needed to address the issues of spectrum availability, a shortage of licenses, tougher competition in the telecom sector and global financial pressure. A wholesale network-sharing model based on cooperation with a third party could unlock added value for operators, stimulating competition and overall market growth.

THE EVOLUTION OF NETWORK SHARING

A well-established business model in the telecom industry, network sharing has existed in various forms more or less since the mobile phone began to take a global foothold in the 1980s. Many operators reap significant rewards from including some form of network sharing in their business model. This may involve roaming or site sharing, and may even go as far as the sharing of radio assets and the core network.

As industries mature, their focus on improving asset efficiency tends to increase – and this is the case today for the telecom industry. Driven by factors such as deregulation, capex, high levels of competition and significant fixed costs, this tendency has also been seen in the utilities and airline industries, for example. To obtain targeted efficiency gains, these industries have modernized their business models by splitting up the value chain into specialized segments; this has led to economies of scale in terms of assets, and supported a shift of focus and resources to the core business.

To drive operational efficiency and obtain other benefits beyond cost savings, most of today's operators use some level of outsourcing. In the next step of the industrialization process – the wholesale model – operations and assets are shared among multiple players through a third party, resulting in greater savings and further increasing efficiencies in opex and capex.

Wholesale network sharing is an evolved form of the network-sharing models that have been used in the industry so far. This model supports shared network coverage and capacity based on Service Level Agreements (SLAs) and Key Performance Indicators (KPIs), and brings the necessary economies of scale. The wholesale model is flexible as each operator can maintain differentiation through specific coverage- and capacity-expansion agreements that help them to reach their business goals.

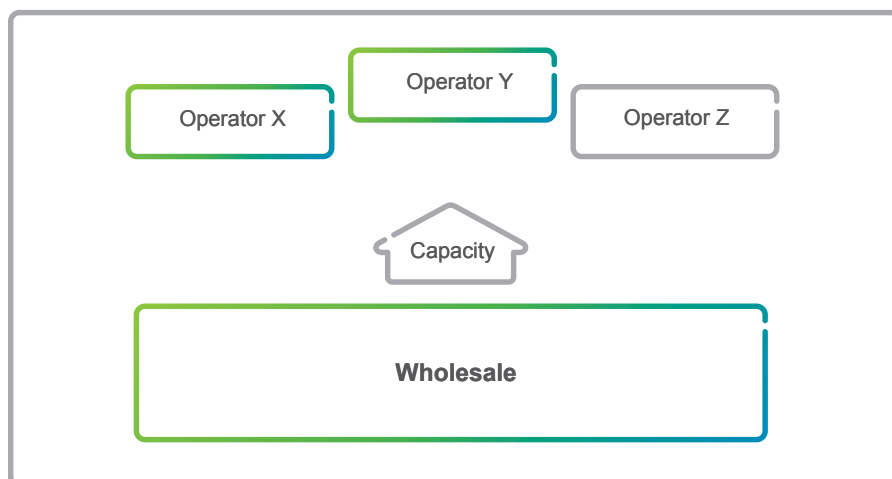


Figure 1: The wholesale network-sharing model.

DRIVERS FOR A WHOLESALE MODEL

Wholesale network sharing is considered by telecom operators as an alternative to the joint-venture (JV) models they are using when they are faced with serious challenges such as a lack of licenses, tough market conditions and financial issues.

LIMITED RESOURCES

License shortages and a lack of available spectrum are two significant factors driving operators to find new ways of sharing networks based on cooperation with a third party.

In many markets, licenses for new technologies, such as LTE, are about to be launched. To use new spectrum in a way that is efficient from a technical perspective, competitive and of maximum consumer benefit, especially when it comes to LTE on the sought-after 800 MHz band, no more than three operators tend to be granted the rights to use new bands to offer competitive services – leaving some without the possibility of differentiating themselves with new services. Those excluded from the market in these situations are then forced to launch new technologies through shared networks.

In markets such as Western Europe and India, regulators today tend to take a liberal view of the sharing of newly issued licenses, stimulating increased competition – and thus facilitating the wholesale approach.

COST EFFICIENCY

Tougher competition increases the pressure on profit margins, affecting the ability to generate revenue from user services. One way to relieve this pressure is to increase opex and capex efficiency, which is supported by the wholesale model through:

- > Sharing of operations and assets by multiple parties.
- > Reselling excess capacity.
- > Maximizing the utilization of existing networks.
- > Eliminating the need to build yet another radio-access network (RAN) when expanding into new technologies.
- > Adopting a lighter operational model in terms of assets (an asset-optimized model).
- > Improving cash flow, through tighter coupling of cost and revenue, coverage and capacity, expansions can be made on a just-in-time basis to meet subscriber demands.

FREEING UP CAPITAL

Divesting assets to a third party can generate cash that can be used to deleverage the business or direct funds to other investments. Capacity can be subsequently leased from the third party and the network can be consolidated with those of other operators to form a shared platform for common build-out.

Such third parties can in some cases commercialize and optimize a network from a financial perspective to a greater extent than a single operator could. Naturally, this increases the operator's motivation to adopt a wholesale model and partake in savings created with additional operators.

COMPARING MODELS

Figure 2 includes five possible network-sharing models. Of these approaches, active sharing of assets occurs in the active (and passive) operator JV model as well as the third-party wholesale model. Bringing in a third party into active sharing is similar to the TowerCo model for passive sharing that has evolved over the past 10 to 20 years.

Traditional network-sharing models, such as active and passive JV, can contribute to the creation of added value for the operator through improved opex and capex. However, as discussed in a previously published Ericsson white paper – A structured approach to network sharing^[1] – it is not always easy for competitors to reach an agreement on how to share, or how to leverage best practice.

In the active and passive JV model, operators share the passive parts (such as sites, towers and power) as well as the active parts (the radio network, backhaul and core) of their networks. Typical agreements cover about 10 percent of an operator’s passive asset base and 10 percent of active network assets, with a combined total of around 20 percent. With the effective implementation of a wholesale model and off-load assets to a third party, this figure can double by off-loading to a third party.

Model	Asset savings	Cash-flow improvement
Roaming	N/A	N/A
Passive JV	~10%	Up to 13%
TowerCo	~20%	Up to 17%
Active and passive JV	~20%	Up to 23%
Wholesale	~40%	Up to 31%

Models including active sharing

Figure 2: Financial benefits of network sharing.

Implementing a wholesale model is largely about optimizing the efficiency of the passive and active parts of the network and operations – bearing in mind that different parts of the network have varying characteristics in terms of lifespan, capital requirements, and technology complexity. When optimizing scale as well as operational and capital efficiency, it is natural to divide a wholesale-model business into two parts: a TowerCo/FiberCo model for sharing of passive capacity; and a NetCo model for sharing active capacity. This approach is illustrated in Figure 3.

To ensure that such a model meets the needs of the participating operators in terms of managed coverage and capacity, partners need to be able to guarantee services and performance across their passive and active network-elements. This can be achieved through end-to-end SLAs and KPIs.

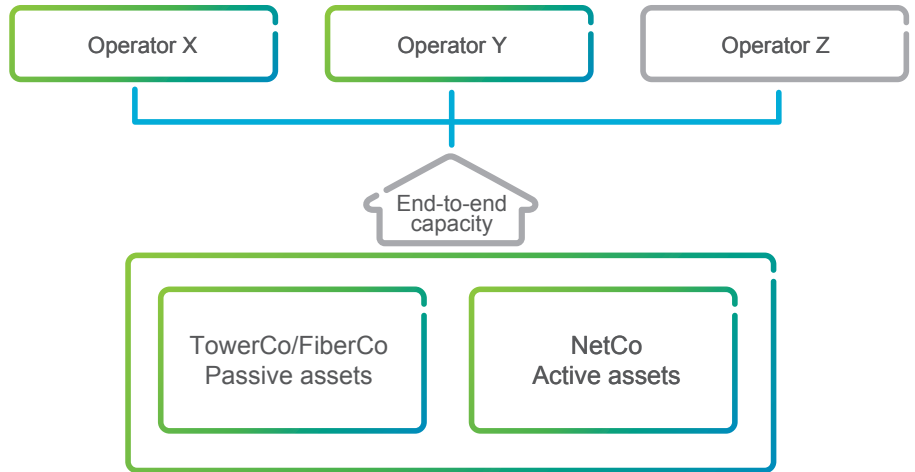


Figure 3: Optimized set-up for passive and active network sharing.

WHOLESALE BENEFITS

The implementation of new business models in a maturing industry with a view to achieving improved efficiency is ultimately all about scale. Ericsson's experience indicates that increasing scale in terms of assets and operations, and optimizing capital costs over a much larger subscriber base, can be financially beneficial to everyone involved in the sharing process.

The financial drivers for a wholesale model include: freeing up cash from existing assets (as an opportunity in itself, or in response to a financial constraint); addressing the need for predictable opex and capex savings; and improving the cash-flow situation.

Cash flow can be improved by linking cost and revenue more closely. To achieve this, the wholesale business model creates the flexibility needed in order that coverage and capacity may be assigned to match demand.

With this model, operators can typically reduce their asset base by up to 20 percent, and increase cash flow by about 8 percentage points as compared with the traditional network-sharing model.

An additional positive side effect of adopting this model is that an operator with a substantially lighter fixed-asset base can potentially achieve an improved market evaluation as a result of a perceived better risk-reward distribution, which more accurately reflects retail business.

GREATER FLEXIBILITY

Some operational factors support the attractiveness of the wholesale model; these include the benefits of being more specialized, more flexible, and able to differentiate. For example, this model reduces the technological risk associated with launching and scaling up new technologies. Operator differentiation can be focused on the individual operator's unique marketing targets and expansion plans, allowing operators to focus on services rather than on infrastructure issues.

STIMULATING COOPERATIVE COMPETITION OR 'COOPTITION'

From an overall market perspective, the wholesale model stimulates competition by improving the position of sub-scaled operators and market entrants. Utilizing spectrum and infrastructure assets more efficiently makes room for more players and facilitates an increased focus on services offered to users. The wholesale model fosters cooperation among operators; using a third party for governance can reduce the impact of cultural barriers that might otherwise present challenges. Compared with JVs and mobile virtual network operator (MVNO) relationships, the wholesale model simplifies business interactions and enables greater influence over services provided and the ability to differentiate.

CHECKS AND BALANCES

Some special considerations need to be addressed as the wholesale model evolves. To unlock the additional value, industry players need to work together, with each player making a contribution based on its key capabilities (see Figure 4).

ALIGNING REGULATORS

To enable the use of a wholesale model, regulators need to allow license owners to sell network capacity to other operators. Regulations must allow third parties to own active assets and sell shared capacity, and it's essential that regulators maintain their positive view of infrastructure sharing. New regulations and telecom acts are currently being discussed and implemented in markets such as Western Europe and India, but it is important for this discussion process to become more widespread.

ALIGNING OPERATORS

The continued success of network sharing requires operators to share a greater part of both business commitments and commercial risks.

ALIGNING VENDORS

Vendors can provide a number of important capabilities, including:

- > The use of governance models that provide strategic, business and operational management, so that operators can retain the appropriate level of control over the network to reach their business goals.
- > Transparency of performance and processes preventing sensitive commercial information from being shared.
- > Shared operational risk. This is associated with operating and securing the economic efficiency of a shared network.
- > Shared technical risk, which is enabled by guaranteeing modernization of coverage and capacity and long-term performance improvements.

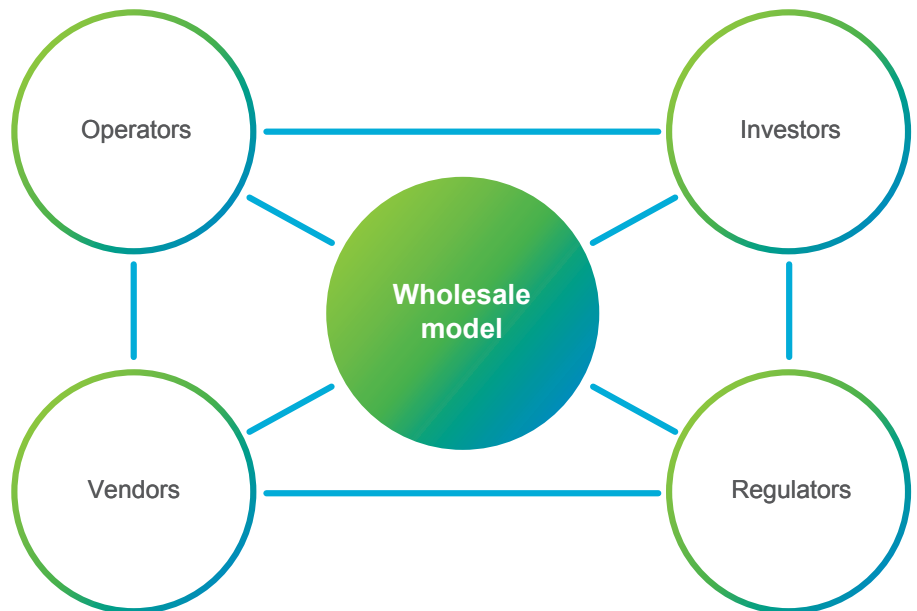


Figure 4: The wholesale ecosystem.

ALIGNING INVESTORS

When it comes to infrastructure, the tendency is for investors to have a long-term perspective and limited appetite for technology risk. When it comes to investing in a shared environment, stakeholders tend to finance passive infrastructure over active assets. A greater proportion of the value chain could be captured if both the passive and the active components in a partnership could be combined, hence sharing out the risk associated with the active infrastructure.

The use of a wholesale model presents a number of investment opportunities, as it:

- > Provides access to guaranteed long-term revenue streams.
- > Combines the lower risks of brownfield asset investments with the attractiveness of potentially higher returns from greenfield assets.
- > Opens new avenues for business in markets where licenses and spectrum availability are limited.

The wholesale model presents a way for investors to expand into active sharing from a portfolio of passive infrastructure investments. The telecom community needs to invite investors into the discussion to help stimulate the evolution.

TYPICAL SCENARIOS

The following three scenarios illustrate when the wholesale model could be used to advantage. While not an exhaustive list (and there are many possible variations of each scenario), these are representative of the circumstances in which operators tend to consider wholesale options.

SCENARIO 1 – SHORTAGE OF 4G LICENSES

Trigger: in many countries, there are fewer 4G licenses available than the number of existing operators, leading to a situation in which some operators are left without access to dedicated 4G spectrum.

In this scenario, a newcomer is moving into the telecom industry; it has won a 4G license, and in parallel with its retail business, is exploring the possibility of offering wholesale mobile broadband to operators in the region without a 4G license, and to operators outside the region. The operator can capitalize on surplus spectrum, align costs with revenues and achieve faster repayment of the license investment.

SCENARIO 2 – ASSET TRANSFER

Trigger: the opportunity to deleverage the business through divesting the active and passive network.

In this scenario, a wholesale company acquires the assets from the divesting operator and sells network capacity back to the operator as a service. This creates an opportunity for additional operators to achieve savings by consolidating their networks, and to base any future expansion on a shared platform.

SCENARIO 3 – INCREASED COMPETITIVENESS

Trigger: several sub-scale operators in a given country have the opportunity to roll out a 4G infrastructure to satisfy consumer demand for mobile data and to remain competitive in the market.

In this scenario, the operators use a network-sharing model, which allows them to secure sustainable scale against stronger incumbent players and provides greater flexibility and influence than is possible under their existing roaming arrangements.

Wholesale models are being considered in many other types of situations. Each scenario is different, driven by commercial needs, geographical conditions, and the government and regulatory agendas of each individual market.

CARRIERS IN COMMON

The aviation and mobile-networks industries are similar in many ways. In the early years of commercial aviation, airlines bought and serviced their own aircraft, just as mobile-industry players built and maintained their own networks.

In the 1970s some aviation players started to move towards a leasing model to eliminate the upfront investment and align infrastructure costs with differing revenue streams and the varying profitability of different routes. This is similar to the wholesale model in mobile networks, where capacity is bought when needed rather than being invested in upfront.

Models in the aviation industry have evolved down to the component level so that aircraft engines, for example, are leased on a power-by-the-hour model, giving the component supplier greater control over the maintenance schedules of parts. The leasing model allows suppliers to optimize equipment across their customer base and reduce total cost of ownership. This is analogous to telecom suppliers providing operators with capacity and availability guarantees through SLAs and KPIs.

Airlines differentiate by arranging highly strategic flight schedules at key airports. Just like spectrum in the mobile world, arrival- and departure-slot assignments are the core assets of the aviation industry, where airlines seek to maximize earnings from each route and use each one to competitive advantage.

In the 1990s, as competition intensified and earnings-per-seat declined, certain routes became loss-makers. Reach (which is synonymous with coverage in the mobile context) is extremely important for an airline, and the decision to cease operating a specific route is not taken lightly. With the development of code-sharing (which is synonymous with active network-sharing), airlines gained greater flexibility to manage their routes, thus ensuring full reach and differentiation while improving the utilization and profitability of less frequently used routes.

The aviation industry is now focused on the revenue-generating activities of pricing, flight and route management and customer service. As the example of low-cost carriers versus full-service airlines demonstrates, airlines have a wide range of ways in which to differentiate – even though the aircraft are shared. The funding and maintenance of the aircraft are secondary to the revenue-generating activities. Airlines trust key partners to execute these tasks in much the same way as suppliers participate in the wholesale model.

CONCLUSION

The wholesale network-sharing model is likely to play an important role as the pressure on margins in the telecom industry continues to mount, and new ways to counter spectrum limitations are needed. Wholesale network sharing has the potential to unlock additional value for all parties involved and improve the sustainability of the telecom industry while promoting competition at the retail level. These opportunities are being discussed by operators and other stakeholders in a variety of markets worldwide.

A wholesale network-sharing model can deliver significant benefits, including:

- > Opex and capex efficiencies through economies of scale and efficient asset utilization.
- > Cash release through the sale of assets.
- > Better cash flow through the tighter coupling of cost and revenue.
- > A simpler governance structure; operators retain the right level of control over the network to reach their business goals.

Implementing a business model based on the wholesale network-sharing model requires a joint effort by, and contributions from, all industry players: operators, investors, vendors and regulators. Ericsson believes that the first wholesale models will be implemented in markets where spectrum and license availability are limited or where financial pressure is high.

REFERENCES

1. Ericsson, 2010, White paper, A structured approach to network sharing, http://www.ericsson.com/news/100923_wp_network_sharing_244218600_c?

GLOSSARY

4G	4th Generation mobile wireless standards
capex	capital expenditure
JV	joint venture
KPI	key performance indicator
LTE	Long Term Evolution
MVNO	mobile virtual network operator
opex	operational expenditure
RAN	radio-access network
SLA	Service Level Agreement