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MANAGED SERVICES' IMPACT ON THE TELECOM INDUSTRY

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White Paper

By adopting the Managed Services concept, operators can reduce their costs and increase their competitiveness.

ERICSSON

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Contents

1 Executive summary

Managed Services typically include establishing, operating and managing day-to-day operations of a telecom operator's network, services and business support systems. The term also covers the case where a provider takes responsibility for providing the required network capacity to an operator, when and where needed, as well as hosting of content, applications and enablers.

Managed Services providers are both vendors of telecom equipment that leverage their expertise to supply additional services to customers, and other players – non-traditional telecom vendors. Other business support areas, such as Customer Relationship Management (CRM), provisioning and billing, are generally handled by operators in-house.

The Managed Services market within the telecom industry is in a high-growth phase and is characterized by agreements, that vary in scope, between Managed Services providers and a broad range of telecom operators: greenfielders, incumbents and lower-tier operators.

Telecom-equipment vendors are showing an increasing interest in Managed Services as a way to benefit from their existing competence and take on new roles in the value chain, covering activities such as network build, including planning and design, field operations, Network Operation Center (NOC) operations, application and service development, and billing. In recent years, operator awareness of Managed Services has increased significantly; Managed Services is now beginning to be a standard element of telecom operator procurement processes. Some large implementations of major Managed Services projects are on the market.

Operators that have decided to use Managed Services have mainly been driven by the following opportunities.

- Under increasing financial pressure due to increasing competition, operators can improve their financial results by outsourcing functions to a partner that can provide higher efficiency and economies of scale than an individual operator can achieve.

- With an increasing degree of complexity, operators can reduce their need to build network and services-related competence and leave this to Managed Services providers that are experts in managing this complexity (potentially resulting in higher quality).

- They can dedicate more of their efforts to revenue-generating activities, such as customer acquisition. The above drivers of the Managed Services market will also apply in coming years. The growing number of Managed Services agreements has, and will over time, create a virtual circle resulting in increasing Managed Services provider competence, leading to even greater efficiency gains and economies of scale. This, in turn, will make Managed Services even more attractive to all types of operators, throughout the world, and most will enter into some kind of Managed Services agreement, in part or in full, to stay competitive in their market.

As technologies converge, outsourcing of an operator's business support systems, network and services to the same Managed Services provider can be expected to maximize the end-to-end benefits to the operator in a Managed Services engagement.

In the near future, therefore, there is a strong likelihood that the shift in responsibility for roles in the value chain enabled by Managed Services combined with increasing complexity of technology, will result in a win/win scenario for both telecom operators and Managed Services providers. The key to success will be adopting an end-to-end view of managing networks, services and business support systems, with the end-user in mind.

2 Introduction

It is estimated that Managed Services agreements can typically provide savings of 20 percent to telecom operators (Source: Ericsson).

While other industries have tried, tested and enjoyed the benefits that Managed Services offer for a number of years, most telecom operators have traditionally viewed network operation as part of their core business – a view closely linked to the strong technology drive within the telecom industry.

This is changing. As a result of faster technology development, changing consumer demands and aggressive competition, and the resulting price pressure, operators are increasingly adopting Managed Services as a change agent to implement new business models where they outsource network and services related activities, such as operations and maintenance.

This white paper will analyze the current impact of the trend towards an increasing number of Managed Services contracts and examines how Managed Services will influence the development of the telecom industry. It will:

- Define the term Managed Services
- Explain the scope of Managed Services

- Examine and explain how the telecom Managed Services market has developed
- Outline how the Managed Services trend can be expected to impact operators and the telecom industry as a whole in the future.

3 Managed Services – defining the concept

A relatively new concept in the telecom industry, the term Managed Services is used differently by different players. In this section we give Ericsson's view of what is included in the Managed Services concept and how it can be split into different modules.

The Managed Services concept can be defined as:

> A **Managed Service** is provided by a service provider that takes on management responsibility for a function that has traditionally been carried out internally by a telecom operator.

Managed Services functions typically include:

- Plan and design – planning, optimization and development. These functions can be applied to areas such as the actual network, end-user applications and services, and business support systems, for example systems related to billing and CRM.
- Build – technology integration and implementation of networks, services and business support systems.
- Operate – day-to-day operations such as operation and maintenance of networks, services and business support systems, field services, customer problem management including helpdesk, and service and resource fulfillment.

The term also covers the case where a provider takes responsibility for providing the required network capacity to an operator when and where needed.

Furthermore, the term Managed Services also covers hosting business model scenarios, where the provider hosts service applications and enablers such as MMS, push e-mail and music for the operator. The provider owns the infrastructure and delivers the capacity and functionality as desired by the operator.

In the telecom industry, Managed Services providers are both vendors of telecom equipment, whose expertise is provided as additional services to customers, and non-traditional telecom vendors, such as IT players, that mainly take responsibility for customers' business support systems in areas such Enterprise Resource Planning (ERP) and office applications (not billing and CRM). The Managed Services offering is commonly provided in a multi-vendor and multi-technology environment.

The partnership between the Managed Services provider and the telecom operator is defined and controlled by a Service Level Agreement (SLA) and measured by key performance indicators (KPIs). The scope of Managed Services contracts depends on the operator's strategy and on its organizational and business needs. A way of modularizing the Managed Services concept, based on the parameters of scope and reward, is illustrated in *Figure 1*. However, in practice, the agreements may vary in scope and may not fit into standardized, distinct modules as in the model below.

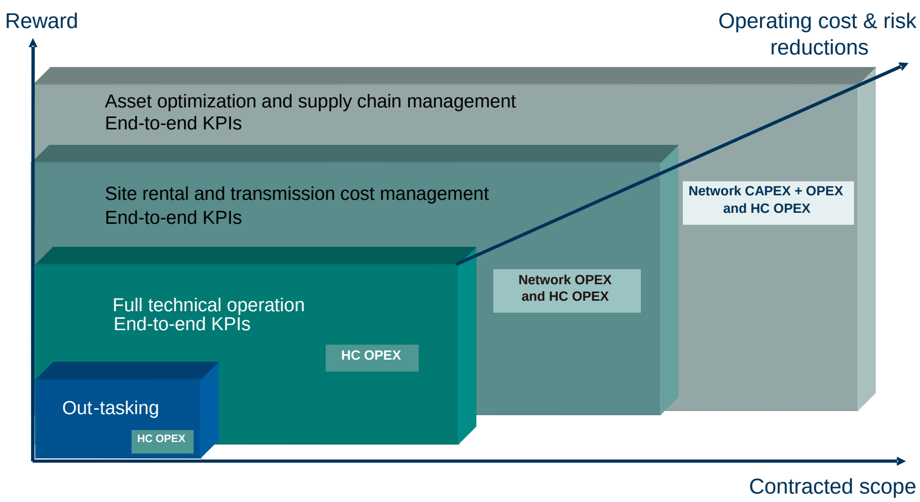

Figure 1. Managed Services structured from a scope and reward perspective

The figure above describes Managed Services from a scope-oriented view, indicating that the more responsibility that is handed to the Managed Services provider, the greater the savings and reduction of risk profile for the operator.

The level with the most limited scope is **Out-tasking**. This refers to the Managed Services provider taking on the partial operation of a function/process typically related to the management of a network or service. Performance measurement is made using task-based KPIs, where the Managed Services provider supports its customer in reducing headcount-related operational expenditure (OPEX) through alternative means of acquiring resources.

As for the next level of scope, **Full technical operation**, the Managed Services provider takes on the end-to-end KPI responsibility for the full operation of a network or service, including technical operation, optimization, design and build activities. So far, this has been the most common Managed Services model used in the telecom industry. The Full technical operation typically includes staff transfer from the operator to the Managed Services provider, opening up for more substantial OPEX reductions compared to Out-tasking.

Increasing the scope further, the Managed Services provider handles not only the full technical operation but also the **Site and transmission cost management** on behalf of the operator. This may constitute site and common infrastructure sharing solutions for towers, shelters, power and so on. End-to-end KPI responsibilities are included. Also in this type of set-up, staff transfer from the operator to the Managed Services provider might occur. With this set-up, not only is headcount-related OPEX reduced but network-related OPEX is also affected positively. The set-up may also have a positive impact on capital expenditure(CAPEX).

The most extensive scope of Managed Services includes **Asset optimization and supply chain management**. This means that the Managed Services provider optimizes the coverage and capacity on behalf of the operator, through providing the required network capacity to an operator when and where needed. Since deployment of the network closely follows actual demand, and thereby reduces over and under capacity, the optimization of cash flow and capital employed optimization is a clear benefit for the operator. The operator only orders and pays for the needed coverage and capacity on a continuous basis against an agreed SLA with end-to-end KPIs.

Asset optimization and supply chain management puts high demands on trust and cooperation between the operator and the Managed Services provider. For the operator, it means a high level of risk and cost reductions (both OPEX & CAPEX). The Managed Services provider manages technical operation, site and transmission cost management, as well as capacity and coverage management of an entire network. Staff transfer may also be included. With this in-depth partnership, operators secure competitive OPEX efficiency and CAPEX productivity, since the vendor optimizes the total cost of ownership of the entire network.

The hosting model also fits in to this level, albeit on a smaller scale as it involves management of single applications and services, with the Managed Services vendor taking full ownership of the hardware and software.

4 Managed Services to date

This section outlines the current status of the telecom Managed Services market and examines how it has developed.

4.1 The Managed Services market in a high-growth phase

Telecom operators have been the traditional customers for Managed Services, with various contract scopes. Greenfielders, incumbents and lower-tier operators have all entered into Managed Services engagements. Initially, vendors have focused on contracts in which they establish an organization and then transfer responsibility to the operator. So far these contracts have been customized and of varying scope.

Other types of customers are now entering telecom Managed Services agreements. For example, large enterprises have outsourced push e-mail and personal information management for their international mobile workforces. *Note: the Managed Services enterprise market will not be covered in this white paper.*

The Managed Services market has grown across geographical regions. Hosting contracts are particularly well accepted in the US, while in Europe and Asia other kinds of Managed Services contracts have been more prominent.

As operators consider which functions to outsource they are assessing their roles and trying to identify and focus on core competencies. Consequently there has been a shift in responsibility for functions in the value chain, as illustrated in *Figure 2* (below). Some functions are increasingly being performed by vendors that offer their services as Managed Services providers, that is network build including planning and design, field operations, NOC operations, application and service development, and billing.

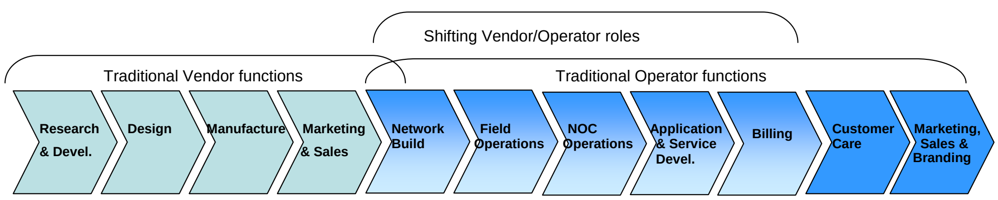

Figure 2. Telecom equipment vendor and telecom operator value chain.

This shift in roles allows operators to focus on areas where they can gain competitive advantages, for example through service innovation, and customer acquisition and retention. Telecom-equipment vendors who are Managed Services providers are well positioned to take on responsibility for functions in the value chain because they are able to leverage existing competence.

Telecom Managed Services is often compared to outsourcing in the IT industry, as such services are generally well known and have been used for a long time. In the IT industry, for example, data centre outsourcing, a type of Managed Service, has existed for 20 years.

There are however major differences between the IT and telecoms markets: the higher complexity of telecom outsourcing and the high quality-of-service demands placed on telecom networks and services when compared to data networks and services.

Telecom Managed Services is at an earlier stage in the maturity cycle. The current high growth, large number of agreements that vary in scope, and broad variety of customers is testament to that. There is wide industry awareness of Managed Services, with a number of comprehensive implementations of full-scale Managed Services already in place.

4.2 Drivers of the Managed Services market

As shown in *Figure 3* there are a number of elements that have brought the Managed Services market to its current position.

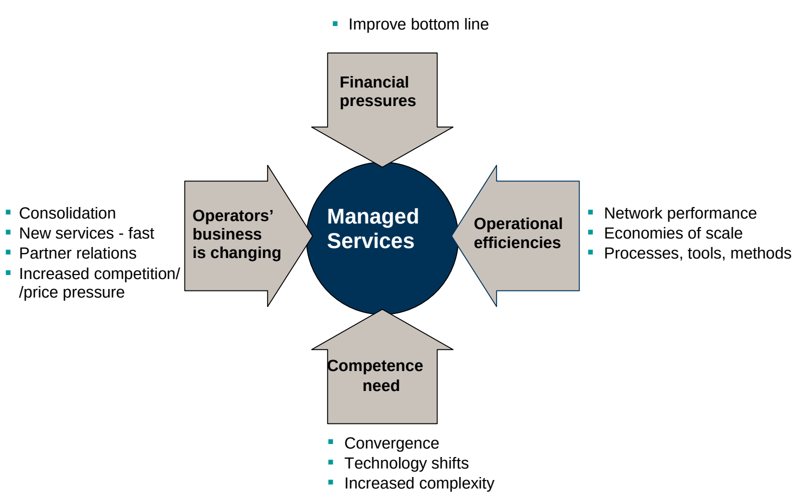

Figure 3. Managed Services market drivers

Telecom industry Managed Services offerings were first brought to market in the mid-1990s, although components existed in various forms prior to that date. Managed Services began to gain real traction and prominence as a distinct service offering following the **financial pressures** resulting from the telecom crisis of 2001-2002. These considerable financial pressures led operators to start considering the potential cost savings and operational efficiencies of entering a Managed Services agreement. This pressure to reduce costs is ongoing, especially as competition increases.

Operators under financial pressure are attracted by the potential **operational efficiencies** offered by Managed Services. Experienced Managed Services providers can generate scale-based synergies as more Managed Services contracts are agreed. The larger the scope of the agreement, the greater the potential for Managed Services providers to maximize efficiencies and reduce costs. Such efficiencies are initially most attractive to those operators who on their own have less scope to generate scale efficiencies. These are generally smaller operators, but can also include larger operators that have identified business elements that can directly benefit from scale, for example field services. Without the synergies across operations available to large Managed Services providers, it is unlikely that individual telecom operators could achieve the same levels of efficiency and cost savings.

Operators now face a multi-technology environment that is changing quickly, for example operators need to add new, complex services quickly and cost-efficiently. The inherent risk of technology choice, the challenges of transitioning between technologies and the operational challenges of managing and maximizing potential of co-existing multiple technologies add up to a substantial **competence need** for a single telecom operator. The operator environment is becoming more and more IT-oriented as the number of end-user services and applications grow. A Managed Services provider has the potential to support telecom operators in this environment and can support several operators in a geographic region. It can provide the necessary expertise for both transitioning between and managing existing technologies, at the fast pace necessitated by the competitive telecoms market, as they are used to operating in that environment.

Managed Services support operators in executing the necessary **changes in an operator business** by acting as a change agent for an operator to achieve strategic goals. For example: following the merger of two operator organizations it may be useful to have an external agent that can facilitate the merger of two networks and organizations. Where an operator needs to increase focus on new revenue-generating opportunities, Managed Services can free up financial resources to facilitate revenue generation by an operator, by, for example, allowing increased investment in service innovation or interfacing with product management and marketing, allowing the outsourced function to support such service innovation.

4.3 Still some operator concerns with Managed Services

As demonstrated, the Managed Services market is currently in a high-growth phase and is increasingly considered to be an alternative in many operators' procurement process, indicating high levels of industry awareness. However, many operators have not yet entered Managed Services engagements. This could be due to concern regarding potential loss of competence and control; belief that a third-party would find it difficult to manage operator-specific circumstances; fear regarding financial exposure to one Managed Services provider; or uncertainty regarding the provider's ability to sustain a cost reduction over time.

Operators with these concerns can take guidance from operators who have already chosen Managed Services. The following experiences show how operators have reduced risk and maximized potential for a successful Managed Services evaluation process and engagement.

- When approaching a Managed Services engagement, operators should decide early on which areas could be outsourced as part of their strategy, and what level of control they wish to maintain. Releasing lower, detailed levels of operational control to their Managed Services provider gives the partner more flexibility, allowing greater efficiency, thus increasing potential cost savings for the operator. In addition, it will be easier for an operator to be in control when cost and performance are more clearly measurable.

- A fundamental part of any outsourcing strategy is a business case detailing operator cost structure and internal performance requirements. An operator that can explain its own business to this extent is better placed to evaluate the ability of the provider to meet cost and performance commitments. This in-house business case can therefore maximize the quality of the provider bid, by enabling judgment as to whether the provider can deliver sufficient cost savings, and increase potential for a realistic assessment of long-term benefits.

- Efficient governance organizations should be established, ensuring good operator control. The governance model must allow the Managed Services provider sufficient freedom so as not to hinder the realization of full business value for both parties. In order to maximize cost savings for both the operator and the provider, the development of mirror functions leading to duplication of work should be avoided.

- Focus should also be on creating clear and simple operational and commercial interfaces between the operator and the Managed Services provider. A Managed Services engagement also has the potential to simplify interfaces on behalf of the operator, for example with service delivery partners. Planning efforts should focus on increasing that simplicity.

- The operator should ensure that the Managed Services provider has considerable human resources expertise, and can provide access to experienced management areas, such as staff transfer, recruitment and downsizing.

- A Managed Services provider should demonstrate a drive towards standardized services: a clear strategy for how to deliver services is needed to achieve a sustainable solution for the operator as well as the provider.

- It is crucial that the operator selects a Managed Services provider with extensive knowledge and a good understanding of the operator's customers, the end users. Furthermore, KPIs should be defined to reflect quality of service to end-users.

- The operator should look for a Managed Services provider that demonstrates competence in and knowledge of both the telecom and IT areas, preferably with a history from telecom, to ensure telecom-grade quality-of-service when evolving towards the new world of converging technologies.

A thorough evaluation process will help to establish trust between the Managed Services provider and the operator. Operators may be faced with a number of similar bids describing the Managed Services offering and they need to establish if the providers can execute their commitments.

Assessment of Managed Service provider capability includes looking for experience in similar types of contracts. It is also key to establish if the provider has understood the operator cost base and can commit to the right cost-level evolution. When evaluating Managed Services provider propositions the operator should look for both global and local synergies. This will naturally depend on the nature of the contract – a local organization set-up is important for field services, but not so important for hosting or remote monitoring elements where access to a central pool of expertise can be essential. Managed Services providers that are also equipment vendors are well placed to increase synergies. When they gain insight into operator activities through a Managed Services engagement, they can provide feedback to their research and development arms. This can benefit the customer through greater synergies and a better services and equipment offering.

5 Managed Services in the future

Looking to the future of the telecom Managed Services market, one important aspect to analyze is the continued evolution of market drivers. In addition, it is interesting to continue the analogy to the IT industry and draw conclusions on its relevance to the future development of the telecom Managed Services markets. In this chapter we look at the future of the telecom Managed Services market.

5.1 Driving the future Managed Services market

It has been concluded that the Managed Services market within the telecom industry is characterized by agreements that vary greatly in scope. Operator interest in Managed Services has increased over the years and today the topic is, at a minimum, discussed by most operators.

Analysis of current telecom industry trends and their likely development suggests continued expansion of the Managed Services market over the coming years.

- As the telecom industry matures, operators will continue to increase their focus on finances, supporting the use of Managed Services. In most countries, operators will continue to experience intense competition, resulting in decreasing end-user tariffs and a potential reduction in EBITDA margins. In spite of a substantial increase in cost focus in recent years, telecom operators are still at a relatively early stage of organizational streamlining compared to players in more mature industries.

- An operator's competitive edge will continue to shift from network and service management to innovation and product packaging. Access to a quality network will be a prerequisite for end users, while operators can profile themselves through attractive pricing, handsets and service innovation. As discussed, the use of Managed Services and the resulting shift in responsibility of roles in the value chain, helps operators to focus resources on revenue generation rather than network management.

- In a world of growing communication network complexity, managing networks will continue to increase demands on operator competence. The emergence of new technologies and converging networks, with the appearance of, for example, multiple access networks, will support a continued interest among operators for Managed Services. Operators might not find it worthwhile to develop the required competence internally while there are providers available that are experts in managing these networks.

It is therefore clear that the current key drivers of the Managed Services development to date will continue to apply over the next few years. Increasing popularity of Managed Services will drive Managed Services providers to continue to improve competence and related capabilities and continue to realize synergies in service provision. This leads to a higher potential for economies of scale and cost savings. Continued increases in provider competence will give expertise advantage over operators and increase the level of trust in their ability, making operators more likely to select Managed Services. If a majority of operators choose the Managed Services concept, and thereby reap the benefits of increased cost savings, the remaining operator(s) will have an even greater incentive to also select the concept. Thus, the maturing market will perpetuate Managed Services growth, as shown in Figure 4.

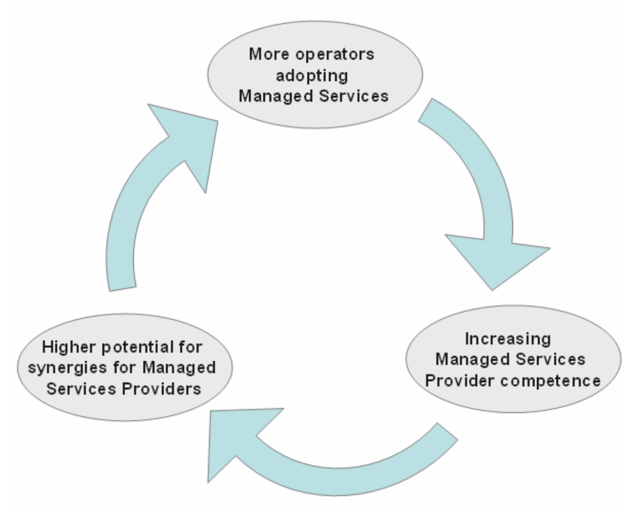

Figure 4. The circle of Managed Services growth

5.2 IT industry provides insight into Managed Services future

When analyzing future development of the Managed Services market, analogies can be made to the IT industry. As mentioned earlier, outsourcing in the IT industry is further along the product life cycle than telecoms Managed Services.

In the IT industry, many suppliers are providing increasingly standardized solutions on a one-to-many basis, to a great number of diverse organizations and industries.

Outsourcing in the IT industry once focused on one-to-one solutions, but now standardized solutions are emerging under pressure from new types of IT service providers offering similar services. These IT services have matured to commodity status, due to competition and price pressure. Although the telecom Managed Services market is currently at an earlier stage in the product life cycle and still largely tailor-made, standardized solutions are beginning to emerge, with for example global NOCs. Further standardization can be expected for cost savings to be sustainable for both operators and Managed Services providers.

Hosting has quickly gained maturity in the market, and is estimated to represent 1-5 percent of the potential market. In the IT industry, however, web and application hosting has reached 20-50 percent of the potential market (Gartner 2006), showing its greater maturity. This is yet another indication of the considerable potential for further growth of telecom Managed Services.

Currently the customer bases for the telecom Managed Services and the IT markets differ significantly, however they are likely to become more similar over time. While the IT industry serves hundreds of thousands of enterprises, the telecom Managed Services industry primarily serves telecom operators, which number in the hundreds/low thousands globally, and just a small number of enterprises. More enterprises can be expected to sign Managed Services agreements as IT/telecoms convergence materializes and awareness of existing agreements grows. New players are also examining how to enter the telecoms sphere; major internet players such as Google and Yahoo, for example, are interested in how Managed Services can support their search for profitable business models.

Within the IT industry there has been scope for the entry of a great number of Managed Services providers. In the immediate future, the telecom industry has a more limited scope for entry of new Managed Services providers. As mentioned in Chapter 3, telecoms Managed Services providers are often telecoms vendors providing network-type services while non-traditional telecoms players include major IT players who provide business support functions. This situation is likely to continue.

- Managed Services involving responsibility for large-scale network and service functions, will remain essential if the Managed Services provider is to carve out sustained savings that make it a profitable business at a lower cost to the customer. Delivery of end-to-end services will maximize efficiencies. End-user services will demand a greater understanding of how the network performs. There is also a considerable first-mover advantage for telecom Managed Services providers who have an agreement with a customer in a particular geographic area and aim to increase synergies over time by attracting other players in that region.

- Managed Services for business support functions will likely continue to be provided by both traditional and non-traditional telecoms players. Telecom players are expected to increasingly address areas such as customer relationship management (CRM), provisioning and billing, while IT players will be well represented in the areas of ERP and office applications. Although scale is also important here, these areas are less affected by the scale benefits that large providers can exploit from network-type offerings.

As technologies converge, outsourcing of both business support systems, networks and services to the same Managed Services provider can be expected to maximize the operator's end-to-end benefits of a Managed Services engagement.

5.3 The Future Managed Services market

Our analysis suggests a continued strong evolution and growth of the telecom Managed Services market over the next few years, in terms of the customer base, scope of agreements and types of providers:

- All types of telecom operators, across all geographic regions, will be interested in Managed Services engagements. Even large operators that already benefit from scale, will look for increased scale efficiencies in areas of their business. Most operators will enter into some kind of Managed Services agreement, in part or in full, particularly where there are scale benefits greater than they could achieve internally. Customers for each provider may be geographically clustered around pools of expertise, particularly for on-the-ground services such as field services. The Managed Services provider customer base will continue to become more diverse, growing beyond telecom operators to include major internet players and enterprises.

- The scope of Managed Services agreements will become more standardized. This will maximize efficiencies and synergies as price pressure on providers increases. This indicates that roles in the value chain undertaken by either operators or Managed Services providers will become more standardized. The telecom industry is currently struggling to find the right business model for Managed Services. So far, although Managed Services providers operate networks, these networks are still owned by operators. That may change moving forward. Some Managed Services agreements already involve shared network CAPEX and alternative models could be used in the future. This could mean that providers take on ownership of limited parts of a network, but they are unlikely to do so for any major part of the network. CAPEX ownership could even be transferred to a third party, introducing an interesting new aspect to the shift in responsibility for roles in the value chain.

- Major Managed Services providers are likely to be those who had first-mover advantage and are therefore well positioned to leverage existing expertise to provide services that benefit most from the shift in responsibility for roles in the value chain and the resulting economies of scale. Smaller and newer providers will focus on trying to enter the service-layer and business-support systems arenas.

6 Conclusion

The Managed Services market is in a phase of good growth and is one of the fastest growing segments of the telecom industry. It is currently characterized by agreements, of varying scope, between Managed Services providers and a broad range of telecom operators.

Managed Services providers are both vendors of telecom equipment that leverage their expertise to provide additional services to customers, and other players, the non-traditional telecom vendors. Telecom equipment vendors are better positioned to take on new roles in the value chain as they can leverage their existing competences, in network management for example.

In recent years operator awareness of Managed Services has increased significantly and Managed Services are beginning to become a standard element in telecom operator procurement processes. Some large implementations of major Managed Services projects are on the market.

Operators that have decided to utilize Managed Services have generally been driven by the following.

- Under increasing financial pressure, operators can improve their financial results by outsourcing functions to a partner that can provide higher efficiency and economies of scale than the individual operator can achieve.

- With an increasing degree of network complexity, operators can reduce the operator need to build network related competence and leave this to providers as experts in managing these complex networks (potentially also with higher network quality as a result).

- They can dedicate more of their efforts to revenue-generating activities, such as customer acquisition and retention, and service innovation.

This analysis concludes that the drivers of the Managed Services market to date will continue to be applicable in coming years. The growing number of Managed Services agreements will create a virtual circle resulting in increased Managed Services provider competence, which will make even higher efficiency and economies of scale possible. This, in turn, will make Managed Services even more attractive to operators and most will enter into some kind of Managed Services agreement, in part or in full. Also of interest is the broadening customer base for telecom Managed Services; the current initial interest from enterprises can be expected to grow as awareness of available solutions increases and IT/telecom convergence continues.

To maximize efficiencies and synergies, it can be expected that the current customized agreements will, in the next few years, become more standardized as price pressure on Managed Services providers increases. This indicates that roles in the value chain undertaken by either telecom operators or Managed Services providers will become more standardized. Operators who have taken the right steps to implement working governance models will achieve the greatest savings.

In the near future, therefore, there is a strong likelihood that the shift in responsibility for roles in the value chain enabled by Managed Services combined with increasing complexity of technology, will result in a win/win scenario for both telecom operators and Managed Services providers. The key to success will be adopting an end-to-end view of managing networks, services and business support systems, with the end-user in mind.

7 Glossary

CAPEX: capital expenditure

EBITDA: earnings before interest, taxes, depreciation and amortization. An approximate measure of a company's operating cash flow

KPIs: Key Performance Indicators

OPEX: operational expenditure

SLA: Service Level Agreement

ERP: Enterprise Resource Planning

BSS: Business Support Systems

NOC: Network Operation Center

CRM: Customer Relationship Management

8 References

- Gartner, "Hype Cycle for IT Outsourcing, 2006", July 10, 2006
- Gartner, "Hype Cycle for Carrier Network Operations, 2006 (Update)" July 13, 2006