ERICSSON

THE VALUE OF PERFORMANCE

Capital investment in network quality leads to improved financial performance

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CONTENTS

ABSTRACT

Within the telecom industry it is often heard that increasing capital expenditure leads to lower financial returns. However, a sustained increase in the level of capital expenditure can result in an enhanced ability to monetize the mobile broadband opportunity and boost financial returns.

This can be attributed to improvements in network quality and reductions in operating expenses. An increase in capital expenditures can also result in first mover advantage, which yields competitive superiority over time.

INTRODUCTION

Since the start of the smartphone era, a number of operators have outperformed their peers in terms of revenue growth and financial results. These operators lead in terms of both network performance and innovation in their market offering.

This raises the question of what behaviors they have in common, as well as how they manage to maintain or even increase growth in today's challenging market and economic conditions.

Research into companies that outperform their market peers reveals that successful operators have a strong strategic vision and proactively invest in network quality and performance. They tend to place a high priority on material investments in network coverage, capacity and quality in order to improve the user experience.

The goal of these investments is not limited to revenue enhancements, but is also aimed at decreasing costs and improving financial returns. This points to an interesting relationship between strategic investments in network quality and improved financial performance that warrants further exploration.

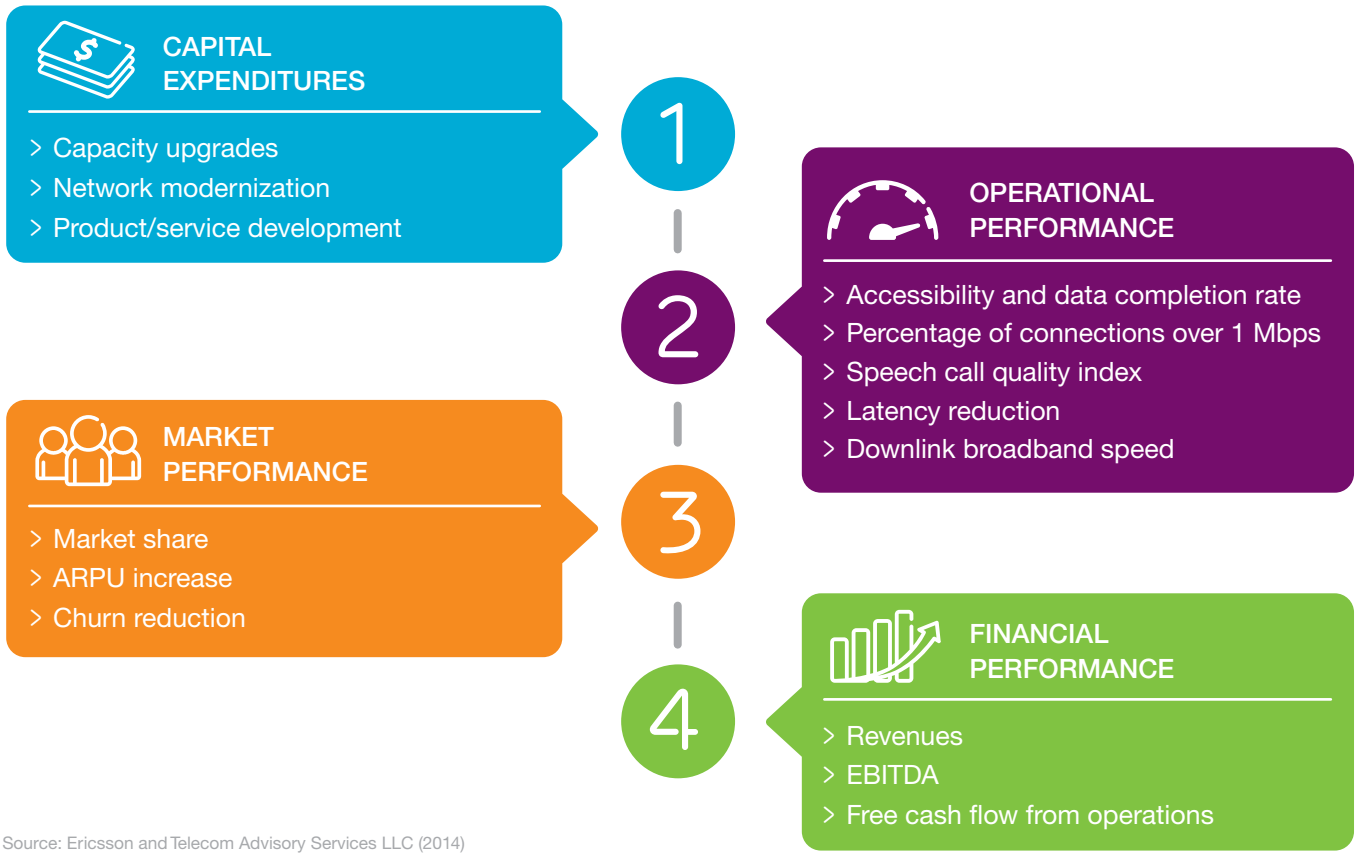
Ericsson recently commissioned a study to investigate the issue in more depth. It was carried out by Dr. Raul Katz, President of Telecom Advisory Services LLC, and Director of Business Strategy Research, Columbia Business School. The study explored the relationship between capital investments in mobile telecom networks and the commercial and financial performance of their operators. This paper describes the study and highlights its implications.

The causal chain

The goal of the study was to see whether a causal chain between increased capital expenditure and improved financial returns could be established. Dr. Katz performed extensive statistical analysis across a large set of metrics, on three years of quarterly data from three different markets: Brazil, Mexico and the US.

The analysis was used to build a simulation model which was validated through case studies.

Figure 1: Illustraton of causal relationships between the variables in the quantitative study



Source: Ericsson and Telecom Advisory Services LLC (2014)

IMPROVED NETWORK PERFORMANCE

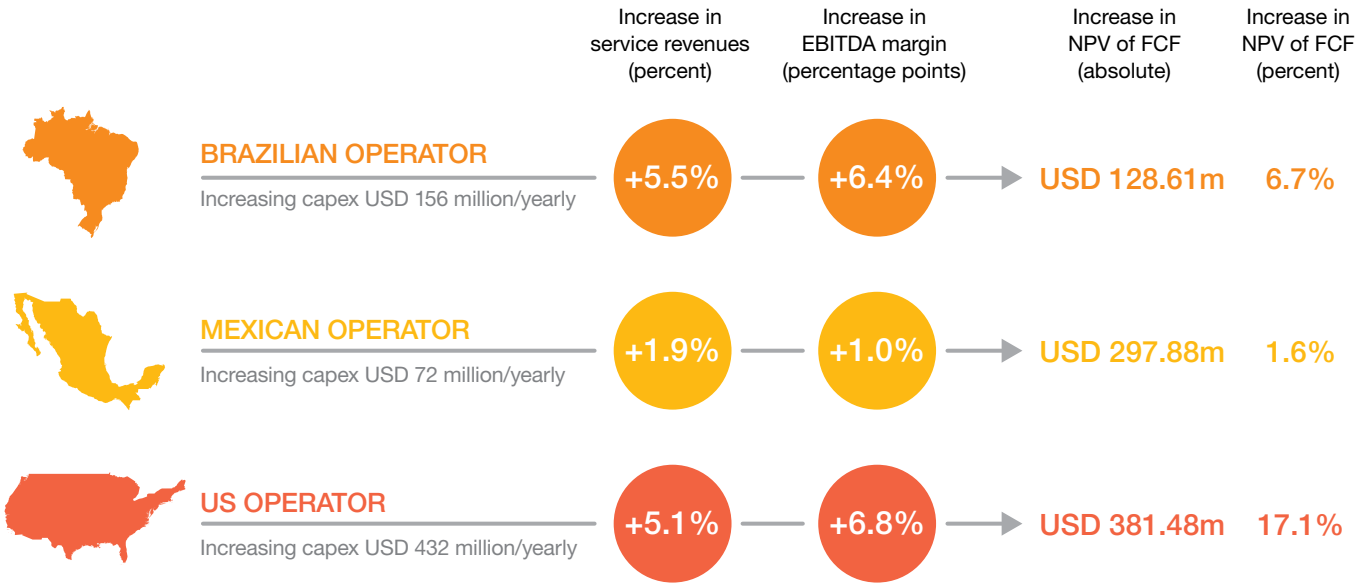
The results from the quantitative study show that appropriately targeted capital expenditure leads to improved network performance. This translates into better market performance which is shown to boost financial returns.

While the link between capex and financial returns sounds intuitive, it is difficult to prove and requires careful analysis of the data. Firstly, external factors like changes in market conditions or the actions of other players need to be accounted for. This enables us to make sure that the effects of the capex increase can be isolated.

Secondly, the direction of the causality needs to be proven. Correlation – the fact that two variables are related to each other – does not on its own prove causality. In order to determine the direction of these causal relationships, time-lagged variables were included in the regression analysis.

This was accomplished in practice by establishing that changes to an independent variable in the current quarter will affect another factor in future. As an example, the results from the study show that for a typical US operator, an increase in downlink throughput leads to an increase in market share the following quarter.

Figure 2: Changes following 10 percent increase in capex over a 5-year period



NPV – net present value FCF – free cash flow from operations

Source: Ericsson and Telecom Advisory Services LLC (2014)
Base: Market data from Brazil, Mexico, US

Service revenues

The study showed that a decrease of 1 percentage point in overall churn for a Brazilian operator led to a 6.86 percent increase in service revenues 2 quarters later. These steps need to be performed throughout the entire causal chain, from capex increase through to financial returns, to establish the causal links.

Thus, the study conclusively demonstrates that investments in network quality ultimately translate into better financial returns for operators.

These improved returns come from cost savings as well as increased revenue.

Taking the analysis further, a simulation model was constructed to estimate the effects of increased capex on mobile operators' free cash flows, allowing operators to assess the commercial and financial gains that can be attributed to the increased investments.

Exploring the impact of capex increases

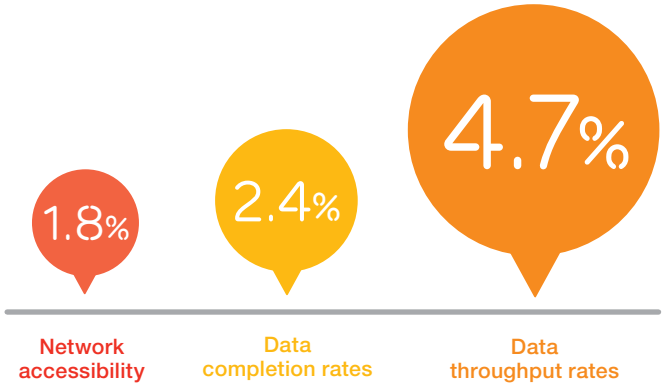
Based on analysis of the past 3 years and controlled to account for one-off events, the simulation model indicated that a 10 percent increase in capital expenditure would have a significant impact. For one Brazilian operator, it resulted in a data throughput rate increase of 4.7 percent. Data completion rates rose to 2.4 percent and network accessibility was boosted by 1.8 percent.

These improvements in network quality and performance resulted in increased market share, a significant boost to ARPU and reduced churn. Given this enhanced network and market performance, the operator should experience a 5.5 percent increase in service revenues, a 6.4 percentage point improvement in EBITDA margin, and a 6.7 percent increase in free cash flow from operations.

Analysis of Mexico and the US shows the same robust relationships between investments, performance and finances as in Brazil. However, the causality works differently under different market characteristics.

In order to verify the model, case studies were performed on four operators on different continents. These case studies validated the hypotheses regarding the competitive importance of capital investment.

Figure 3: Impact of 10 percent increase in capex



Source: Ericsson and Telecom Advisory Services LLC (2014)
Base: Market data from Brazil, Mexico, US

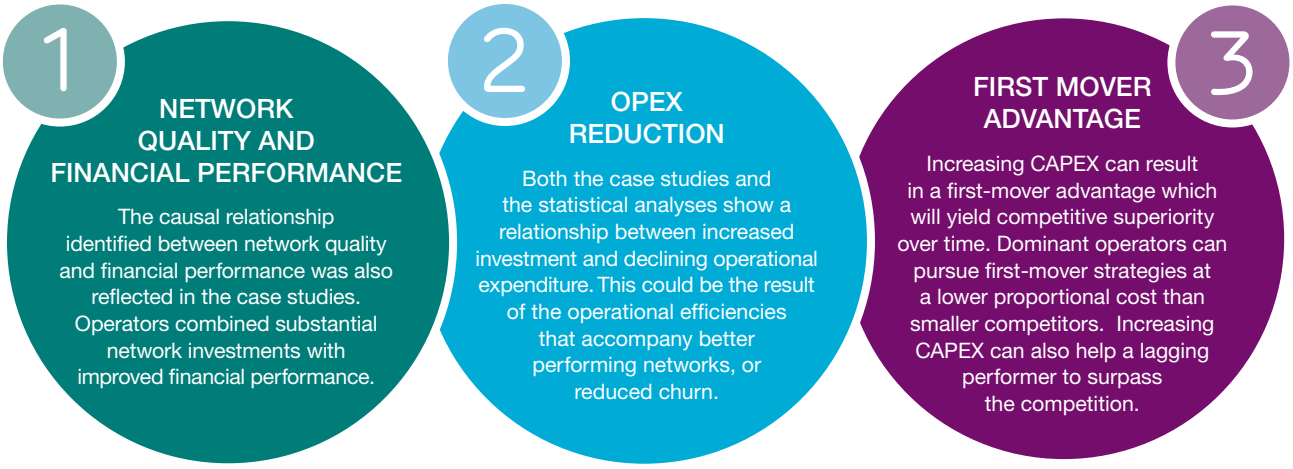
Scenario analysis

The statistical results described above can be applied in scenario analysis of individual operators. These simulations reveal that an investment-driven market strategy results in significant financial returns. They also show that such an approach provides competitive advantages such as lower churn, higher market share and increased ARPU. These benefits are largely created before the competition has time to respond.

Getting the competitive advantage

Investment-driven strategies change the market and create a new competitive landscape. Four operators on different continents with publicly stated strategies of investing in network quality were analyzed. Three key factors were identified that create competitive advantages. They can be seen in the figure below.

Figure 4: Key factors for competitive advantages



Source: Ericsson and Telecom Advisory Services LLC (2014)

STRATEGIC IMPLICATIONS

The quantitative analysis and case studies demonstrate that increased investment in network quality and performance creates competitive advantages. These also translate into improved financial returns.

Furthermore, the increase in subscribers and ARPU also indicates that some network investments produce more benefits than others.

This is especially the case for those investments that change user perceptions of what can be achieved using the network.

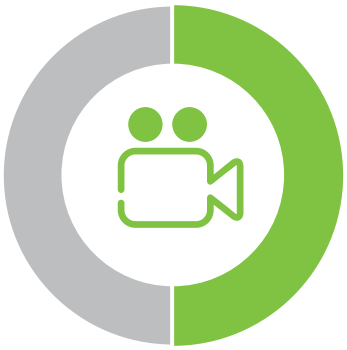
Investments in network quality can capture new markets and build differentiation. The current growth in the number of people using their mobile devices to watch video exemplifies the importance of such strategic spending. Many users like to watch video on mobile devices, but the quality of their experience depends on the network they use.

A network without sufficient capacity provides an unsatisfactory experience – the video takes too long to play and the quality is low or playback gets interrupted while buffering.

In these circumstances users learn that they cannot rely on the network to watch video and so look for alternatives.

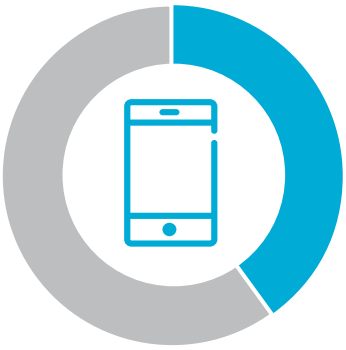
Instead they tend to rely on pre-loaded content, limiting their use of connectivity to other services, many of which generate less revenue than video.

Figure 5: Example of network investment opportunity in order to meet the growing demand for video



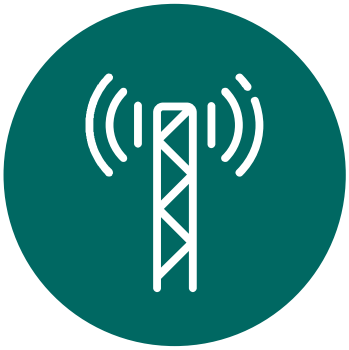
50% of mobile traffic will be video in 2019

INVEST TO MANAGE TRAFFIC EFFICIENTLY AND DECREASE COST



40% of YouTube views are mobile

INVEST TO DRIVE AN EMERGING CONSUMER BEHAVIOR



NETWORK PERFORMANCE is the prime driver of customer satisfaction and loyalty

INVEST TO CREATE WORD OF MOUTH AND INCREASE LOYALTY

Source: Ericsson (2014)

Investing in performance

Strategic investment in specific areas of network performance can change user behavior. Once performance exceeds a certain point, users learn to rely on the network, e.g. for activities such as watching video. They stop pre-loading content and stream it instead, generating more operator revenue.

Passing the streaming threshold also differentiates operators. This creates a competitive advantage that attracts new subscribers and reduces churn.

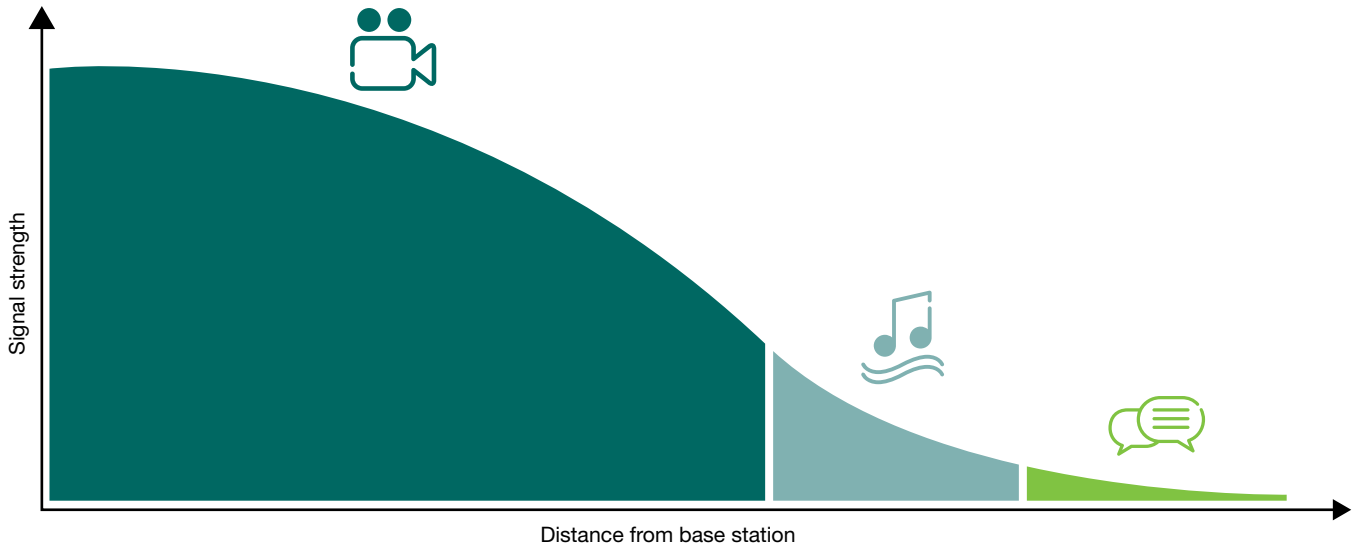
Rethinking network performance

The explosive growth of smartphones and app usage brings new challenges to mobile operators worldwide. App Coverage is an approach to meet those challenges by translating users' expectations into network performance targets. Ensuring appropriate App Coverage can lead to tipping points in user behavior.

CAPITAL INVESTMENT

can be used as a competitive lever to differentiate market leaders

Figure 6: Conceptual view of App Coverage



Source: Ericsson (2014)

Investments in video streaming

It is necessary to invest in the provision of a good downlink throughput in the radio network to achieve App Coverage for video streaming, for example. App Coverage also places demands on uplink, latency and capacity to support sufficient user numbers. Adaptive streams and solutions for caching are also needed to achieve efficient video delivery.

Through well-proportioned investments in all of these areas, operators can cross the streaming threshold with maximum profitability. The right investments help reduce costs, create new opportunities, attract new subscribers, open new revenue streams and improve financial performance.

We are a world leader in the rapidly-changing environment of communications technology – providing equipment, software and services to mobile and fixed network operators all over the globe.

Some 40 percent of global mobile traffic runs through networks we have supplied, and we manage networks that serve more than 1 billion subscribers globally every day. With more than 35,000 granted patents, we have one of the industry's strongest patent portfolios.

Our vision is to be the prime driver in an all-communicating world. By using innovation to empower people, business and society, we are enabling the Networked Society, in which everything that can be connected is connected.

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