

# DATA-DRIVEN EFFICIENCY



Combining actionable  
information with market  
insights to work intelligently  
and reduce costs

GET THE  
WHOLE  
PICTURE

# ACTIONABLE INTELLIGENCE

Ericsson is driving the development of actionable intelligence within all aspects of ICT, based on insights from networks, IT environments and external sources. For our customers, this brings faster results, predictive power and new depth to analytics.

This document provides insights and opportunities connected to data-driven efficiency. To get the whole picture, see the data-enhanced customer experience and data-derived growth papers.

- > **Data-driven efficiency: taking advantage of the actionable information available within the organization, combined with insights from the market, in order to work intelligently and reduce costs**
- > Data-enhanced customer experience: acquiring a deeper understanding of users and improving their experience at every touch point through high performance services, fast feedback and customized offerings
- > Data-derived growth: creating innovative offerings and generating new revenue streams sparked by big data

## What is big data?

The term 'big data' refers to large amounts of data collected from a variety of sources and analyzed with the purpose of building business advantages. It is usually characterized in terms of 'three Vs' (Gartner): volume (amount of data), velocity (latency/speed) and variety (diversity of data types and sources).

We believe that in order to build business advantages, service providers need to be able to make decisions in an accurate and timely way. When utilized properly, big data analytics add considerable value to decision making – helping to make it more accurate and actionable.

## Improved performance

By making use of big data findings, one tier 1 Latin American operator was able to improve network performance, utilize resources more efficiently, reduce problems by 60 percent, and lower churn.





# DRIVING LONG-TERM EFFICIENCY

## Changing the preconditions for business

Big data makes businesses more efficient. For operators, efficiency is not merely a section of a long-term business strategy document – it is a daily struggle. It's about structuring and controlling all the disparate assets that every operator possesses – the difference between a successful business and no business at all. It is about deciding what role you want to play in the digital economy, and making headroom for innovation and new business endeavors.

Big data is changing the preconditions for business in many industries. For operators, this is particularly pronounced, partly because of all the data available to leverage, but also because it touches upon so many aspects of their activities. In this context, big data constitutes a tool to increase analytical depth and foresight. This in turn brings new levels of effectiveness to operations, cuts operational expenditure and makes room for new product and service developments.

Networks are the lifeblood of an operator's business. Together with data from people and machines, they also provide vital information about usage patterns and issues. With the ability to interpret and utilize that information, operators can make substantial efficiency improvements.

## Making way for growth

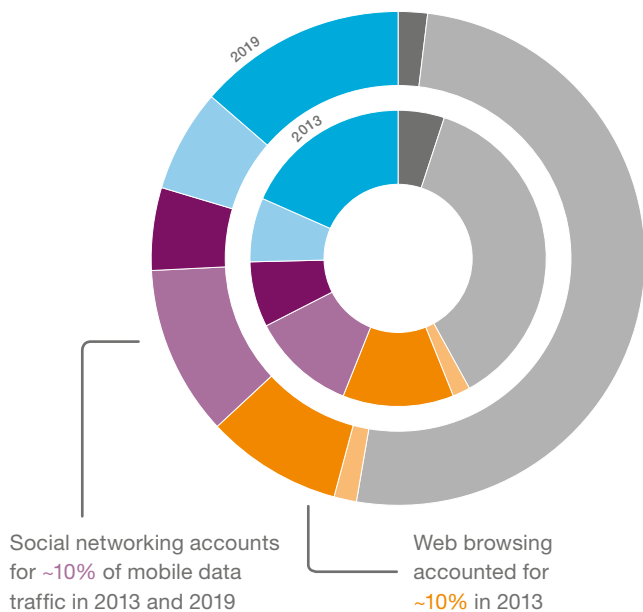
Operators will sometimes want to reallocate their bandwidth resources in real time to respond to sudden peaks in traffic. Big data assets help businesses understand how to dynamically allocate their capacity in the short and long term, resulting in consistent network performance with high availability and reliability.

Big data analytics can also help to maintain network performance over time, increasing efficiency through proactive issue avoidance. The quality of insight from network data reduces and often completely mitigates network issues, meaning faster response times, fewer incidents and reduced revenue loss.

## Big data analytics can help to maintain network performance over time

In order to streamline processes, it is critical to have full understanding of all resources in the network. With increasing infrastructure complexity and a mix of technology and vendors, information must be drawn from the network, constituting a significant data challenge.

Operating a network has also become more complicated due to the increasing complexity of the data traversing the network, and users' lower tolerance for service degradation. Big data analytics, coupled with the effective management of insights throughout the organization, help operators to get the whole picture when it comes to their business operations, and makes way for growth.



In 2013, video accounted for ~35% of mobile data traffic

In 2019, video will account for >50% of mobile data traffic

### Segment

- File sharing
- Video
- Audio
- Web browsing
- Social networking
- Software downloads and updates
- Other encrypted
- Other

Video is also likely to form a major part of file sharing traffic and a sizeable part of encrypted traffic, in addition to the identified application type 'video'. By encrypted traffic we mean encryption on the network layer (e.g. VPNs) or transport layer (e.g. TLS/SSL). Application layer encryption such as DRM for video content is not included.



## Opening the floodgates

Smartphone traffic is expected to grow tenfold between 2013 and 2019. Video will contribute the most to the increase in data traffic.

In the Ericsson Mobility Report from November 2013, we forecasted that by 2019 video will contribute more than half of the total volume of global mobile data traffic. This is a huge leap, when considering that total mobile data traffic will rise from 1 Exabyte (EB) to 10 EB (1 EB being 1018 bytes) in the same period. We fully expect that the makings of a successful operator will change along the way.

Source: 'Ericsson Mobility Report', Ericsson, Nov 2013.

## Focus optimization efforts where it matters

Big data-driven services ensure that multi-technology networks consistently perform as they are designed to, from the initial planning phase to the ongoing optimization of a maturing network. Big data analytics are also key to providing self-organizing networks with real-time information. This helps operators to adjust capacity between network nodes in response to changing traffic loads.

Big data is part of the network planning phase in forecasting current and future capacity needs. Delivering communication services that feature a wide range of applications means making decisions about service levels. They must continually evolve together with applications, introducing new indicators and threshold levels.

Big data allows operators to see the whole picture. Those who use the data effectively benefit from improved infrastructure utilization and reduced network capex and opex.

## Increase efficiency by preventing issues

Big data analytics support optimal network performance through early detection and resolution of potential network degradation, before it has a chance to negatively affect the user experience. Continual monitoring of the right parameters helps to secure a long-term, well-functioning network and reduce the number of issues.

In practice, this is achieved through a combination of technical, service and customer-centric KPIs that are closely monitored and interpreted. Large amounts of existing data are used to develop algorithms that help predict potential issues at an early stage. The result is faster issue identification and resolution, which in turn reduces operating and maintenance costs.

## Get control of resources

Big data is required to inform operators' inventory systems, providing an accurate, real-time overview of the available network and computing resources to enable on-demand service provisioning. This centralized view of resources enables streamlined, potentially autonomous operational processes that drive maximum efficiency.

Revenue assurance and fraud management are areas that can lead to major economic losses if not effectively managed. Such critical areas are best addressed by implementing a structured business performance analysis – optimizing business processes across the organization, rather than merely dealing with identified isolated leaks.

**Those who use the data effectively benefit from improved infrastructure utilization**

# HOW TO IMPROVE YOUR BUSINESS

## Analytics should influence all areas

When planning efficiency endeavors, it's important not to focus solely on network resources. Customer care, sales channels, marketing, billing and finance are all areas that benefit from big data-driven efficiency. These areas should be looked at collectively: for example, efficiency in marketing spending could lead to unexpected results in customer care. Consider how the different functions within your organization are interconnected, and how those connections can influence the whole picture.

## It's not just about monitoring

Tracking performance metrics is all about making efficiency improvements. It enables you to identify and optimize the resources you possess. But consider the end-to-end view: green KPI lights on a dashboard don't necessarily mean that the service or application is performing as expected for the customer. By seeing the whole picture of your assets you will be more in control and able to identify the root cause of any problems, acting upon the insights that big data analysis provides.

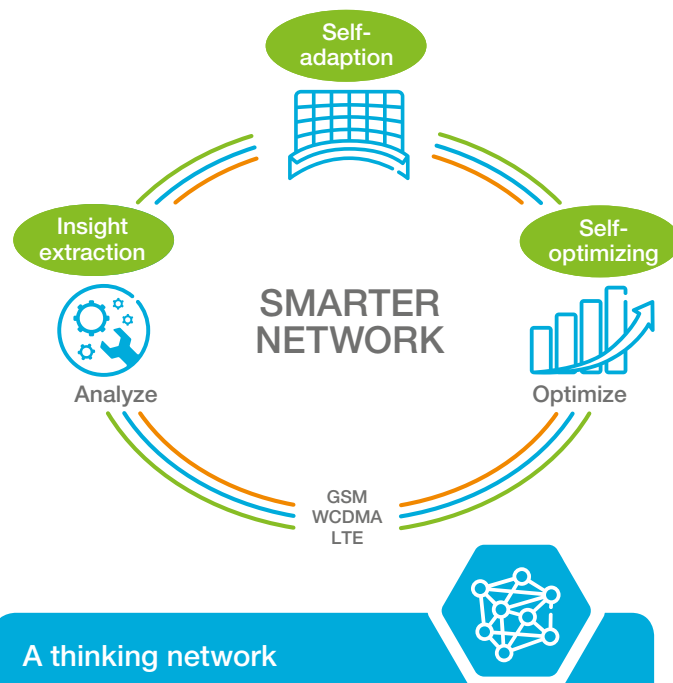
## An ongoing process

Optimization is a constant endeavor, rather than an ad hoc project. A one-off initiative does not fix things once and for all. However, big data insights give you a continually fresh view of your business, enabling you to follow your efforts through to achieve the desired outcomes. As communication and technological landscapes change and customers become more demanding, optimization should be a continuous part of your work in order to remain efficient.

## Be open to change

Efficiency improvements pave the way for business development. When you begin to capitalize on existing resources and mobile data traffic, you not only become more relevant to your customers, you gradually become a different company. Breaking new ground is a two-way process that changes businesses. This change, whether it's selling to new industry segments or expanding your portfolio among your existing customers, has to be acknowledged and managed.

Smart and self-optimizing networks



## A thinking network

Self-organizing networks process traffic more smoothly, improving the user experience and increasing operational efficiency. They build on the use of big data analytics to shift network resources between network nodes, according to the constantly changing demands of services and capacity.

Networks are excellent at connecting people and machines, but up until now they have not been very good at interpreting the capacity demands coming from their nodes. This is all changing with the creation of self-organizing networks.

Source: White paper: 'Big data analytics', Ericsson, 2013.



# UNIQUE COMPETENCES

Ericsson combines an unmatched strength in telecom technology with service excellence and global scale. We help businesses leverage big data to drive efficiency improvements.

End-to-end analysis is the foundation for valuable efficiency improvements across an entire organization. Information from networks, users and machines should be structured together in order to reap maximum benefits. We are one of very few partners who have a combined understanding of operators' business and technology.

Knowing where to focus efficiency efforts requires detailed knowledge of exactly how telecom operators work. We combine deep network understanding with process insights to create business advantages based on years of experience in networks and systems management and support.

However, the resulting information in itself is not enough. Businesses need to identify and interpret the parameters that make it relevant. We have both the experience and expertise to decipher the numbers effectively.

Even with the right data and analytics to hand, success will be limited if businesses cannot disperse this knowledge throughout their organizations and overcome barriers. Our Professional Services can help overcome this – which is just as important as doing the math.

Efficiency improvements demand a vast knowledge of the plethora of available resources. It also takes sophisticated consulting skills to leverage the correct analysis and relevant solution. We are one of few partners who can deliver this precise combination of competences.

## CASE STUDY | TIER 1 LATIN AMERICAN OPERATOR

Increased smartphone penetration and LTE network usage among subscribers in Latin America has created higher expectations of network performance. One tier 1 Latin American operator took the decision to standardize its processes and create more focused operations, all while evolving the network. It wanted to find a way to increase user satisfaction, support a complex network with reduced opex, and increase overall efficiency.

Ericsson delivered Proactive Services, which enable early detection of network disturbances before they impact performance. The service helps the

operator to identify, filter, and prioritize network disturbances to prevent this from happening. Ericsson helped to identify steps that the operator should take in order to solve network issues. This enabled the customer to solve the problems and manage the network more efficiently, and in this way the number of issues decreased steadily. Network performance improved, resources were utilized more efficiently. Proactive Services helped to reduce the number of problems by 6 percent, and mobile broadband churn decreased.



Ericsson is the driving force behind the Networked Society – a world leader in communications technology and services. Our long-term relationships with every major telecom operator in the world allow people, businesses and societies to fulfill their potential and create a more sustainable future.

Our services, software and infrastructure – especially in mobility, broadband and the cloud – are enabling the telecom industry and other sectors to do better business, increase efficiency, improve the user experience and capture new opportunities.

With more than 110,000 professionals and customers in 180 countries, we combine global scale with technology and services leadership. We support networks that connect more than 2.5 billion subscribers. Forty percent of the world's mobile traffic is carried over Ericsson networks. And our investments in research and development ensure that our solutions – and our customers – stay in front.

Founded in 1876, Ericsson has its headquarters in Stockholm, Sweden. Net sales in 2013 were SEK 227.4 billion (USD 34.9 billion). Ericsson is listed on NASDAQ OMX stock exchange in Stockholm and the NASDAQ in New York.

The content of this document is subject to revision without notice due to continued progress in methodology, design and manufacturing. Ericsson shall have no liability for any error or damage of any kind resulting from the use of this document.