

# Network Norway



## Customer

- Network Norway

## Industry

- Mobile Operator

## Challenges

- Ensure their stable indoor coverage

## Solution

- NEC provides Femtocell Solution.

## Results

- Network Norway has started the new service for SME.
- The users of this service has not missed the calls from their customer.

## Introduction

Network Norway is the number three challenger in the Norwegian mobile sector. It has 1.1 million subscribers giving it an 18 per cent market share. Its revenues are 2 billion Kroner (US\$ 300 million) and it deploys three brands in its home market: the Network Norway brand competes in the business market; One Call is its consumer brand, and Lebara is aimed at Norway's immigrant communities.

The company wanted to strengthen its proposition for the Network Norway brand and more effectively target the highly-contested small to medium enterprise (SME) market. It decided to work with NEC to develop an enterprise-oriented Femtocell service as both a customer retention tool and a service quality differentiator.

## Challenges

The Enterprise market is made up of demanding customers who completely rely on their mobile phones to stay in touch with their own customers. Bad sound quality, dropped calls and not-spot reception problems are therefore unacceptable - especially in the office where customers' customers expect the service to be best.

The problem is that 3G and 4G mobile networks, like Network Norway's - usually operate at high frequencies (above 2GHz) and their signals can have difficulty penetrating office buildings - especially modern office buildings featuring steel, concrete and - increasingly - tinted glass which reflects radio signals.

"For customers we see that every missed call is a missed business opportunity," says Geir Jenssen, Head of Femtocells at Network Norway.

To win and keep business customers, then, it was necessary for Network Norway to develop a viable solution to this quality problem, but one which didn't demand in-house expertise and management time from the customer, or impose an onerous system monitoring or cost burden on Network Norway.

## Solution

Network Norway decided upon a Femtocell strategy to service its small to medium enterprise customers in conjunction with the world's leading Femtocell solution provider, NEC.

NEC's Femtocell solution employs very small mobile base stations which are sited inside the customer's premises to provide cellular coverage indoors, using the operator's own licensed spectrum.

The tiny 'femtos' are connected to the customer's existing broadband services so that all voice, messaging and data is routed across the Internet and on to the operator's core network where it joins the regular 'macro' traffic.

All services remain unaffected as there is no user intervention required to transit between the 'macro' network outside and the femto network in the office, unlike other solutions which use WiFi.

This also means that any supported phone supported by the operator can be used in the Femtocell environment.

According to Naoki Iizuka, President & CEO of NEC Europe Ltd, "NEC's Femtocell solution provides telecom operators like Network Norway with an efficient way to provide good voice and data coverage to customers using their existing Internet connections."

NEC is providing Network Norway with the NEC Femto gateway and access point management systems which can aggregate and connect thousands of access points to Network Norway's core network.

The system uses the 2.1 GHz 3G spectrum and has standard 3G network security.

NEC's end-to-end solution enables a single Femtocell to grow into a cluster of base stations to match the shape and extent of building or buildings. The Femtocells then communicate across the company's LAN to automatically maintain an overlapping mesh of coverage.

"As well as hardware NEC provides network control platform systems and operator services giving operators a complete end to end solution," confirms NEC's Naoki Iizuka.

Most importantly, NEC's Femtocell self-organising capability makes the installation incredibly simple and requires no additional infrastructure.

If personnel are moved about or new buildings are brought into use, extra Femtocells are simply added. The system also optimises for changing patterns of use - if people congregate in a single room for a meeting, for instance, the Femtocells automatically share the load most efficiently.

## Results

The NEC Femtocell approach works for both the operator and the customer. 'Plug and play' is important for the customer, while self-organisation is a must to minimise operational expenditure (OPEX).

One customer to benefit from Network Norway's Femtocell innovation is Norwegian engineering group, Sandvik.

"Our building outside Oslo is a new building," says Sandvik IT Director, Rolf Olsen. "We have medium to bad coverage in the upper three floors and no coverage on the lower 2 floors. The cost for other solutions like a repeater was about 250, 000 Krona," says Rolf, "while the solution for the Femtocells was almost for free."

Naturally Sandvik chose the Network Norway solution which provided perfect coverage and was easy to install.

Femtocells have a future at Network Norway. "We have great confidence in the Femtocell product," says Geir Jenssen, Head of Femtocells at Network Norway, "and we seek to develop the solution further and bring the femtocell experience into new markets."



## About

Sandvik is a Swedish-based multinational engineering group which specialises in tooling, materials technology, mining and construction. The group is represented in more than 130 countries and in 2010 had about 47,000 employees.