

Case National Land Survey:

Benefits of mobile work on productivity and the ecological footprint



BACKGROUND

"The people of the future will be amused by the activities of people at the start of the 21st century. They will wonder why people wasted so much time on commuting yet spent so little time on other activities, free time and self development, for example. People sitting in traffic jams in small 'metal boxes' wasting their temporal, environmental, financial, mental and physical resources will seem like completely irrational behaviour" (Heinonen 2000)*.

The National Land Survey (NLS) implemented a mobile-work test project in autumn 2007 and a mobile-work trial project in 2008, in which a group land surveyors were given a possibility to use production applications regardless of time and location. During the project it was also determined how to reconcile the different interests of the employer and employee in mobile work.

QUICK FACTS

Customer

National Land Survey of Finland produces and provides information on and services in real estate, topography and the environment for the needs of citizens, other customers and the community at large. The National Land Survey (NLS) is responsible for Finland's cadastral system and general mapping assignments. It also promotes the shared use of geographic information. The NLS consists of thirteen District Survey Offices, five national operational units and the small central administration. The NLS has staff of over two thousand, with over 80 % of them employed in the District Survey Offices. The NLS is a governmental agency subordinate to the Ministry of Agriculture and Forestry. Further information is available at: www.maanmittauslaitos.fi/en.

Solution

SafeMove is an easy, flexible and secure way to handle data traffic across a variety of networks. In practice, a SafeMove user can roam between networks, from a 3G network to WLAN, from WLAN to Ethernet, and back to a mobile network again.

SafeMove secures all connections from end-device to the internal network, avoiding the need to set up separate security solutions for each application or network. The secure remote connection persists when roaming, applications remain in operation, and there is no need to relog into the internal network. In addition to laptops, SafeMove is available for PDA devices and Nokia Smartphones.

*Source: Heinonen 2000: Heinonen Sirkka, Aja työmatka tietokoneella - etätöön myytit ja mahdollisuudet, VTT, http://alk.tiehallinto.fi/tn/tnpdf/tn_300i.pdf

COMMUTING

Land surveyors have always carried out mobile work. With SafeMove, after the fieldwork is complete, project meetings can now be held on site, resulting in significant savings in office related commuting. Testing has demonstrated that mobile work is particularly beneficial for those whose home is situated far from the land-survey office, enabling work/project completion in the field or at home versus time consuming office related commuting.

WORKING OUTSIDE THE OFFICE

It is a really positive experience for the employee to be able to finish his workday at home, after which he is immediately free to actively engage in family life. This, along with the opportunity to work flexibly, has a clear effect on work-related welfare.

The employee's work outside the office (e.g. at the town hall, in a hotel, at home) frees up his workspace in the office for other uses or it can be dispensed with completely. For occasional office days, a shared-use room will suffice where people can work on a laptop. With this process, the organization has the opportunity over a longer period to significantly reduce the costs of premises or to use areas that are freed up for something else. The decrease in commuting also has a direct effect on fuel and vehicle costs leading to savings in the employee's own wallet (see figure). In addition to this, the mileage saved also reduces the risk of traffic accidents of which deer collisions in particular are common in rural areas.

ENVIRONMENTAL EFFECTS OF MOBILE WORK

The on-going global warming is raising interest of commuting for employers in a new way. Evaluation of environmental effects is becoming a competitive factor for organizations where one must consider how an organisation's resources are used in an environmentally friendly way. And even part-time remote working can help to achieve significant gains for the environment, thus reducing the ecological footprint.

RECONCILING THE EMPLOYER'S AND EMPLOYEE'S INTERESTS

The transfer to mobile work creates new challenges for management, and the conduct of work will be based on trust between management and the employee. It is considered that one benefit of enabling mobile work is that it creates a dynamic and modern corporate image, which is important in attracting new employees, amongst other things. With a technologically progressive and flexible work environment, there is more potential to compete for the best employees.

This text is based on a report written by Juha Tuomaala, Chief Engineer at the National Land Survey, about a test project on mobile work there.

The effects on the environment of reduced commuting are*:

Example: If 100 people work remotely from home 3 days a week and their distance from the office is 30 km on average, commuting would reduce by 828,000 km each year (almost 21 x around the globe!). For the environment it would mean:

Carbon dioxide emissions (CO₂) would reduce by 137 tonnes

Carbon monoxide emissions (CO) would reduce by 5 tonnes

Hydrocarbon emissions (HC) would reduce by 696 kg

Nitrogen oxide emissions (NO₂) would reduce by 1,242 kg

Particle emissions (PM) would reduce by 44.7 kg

The benefits of reducing the level of commuting for one employee*:

Example: An employee lives 30 km away from the office. He works remotely three days a week.

The savings on fuel are 497 litres a year, equating to € 596.

Time savings, approx: 3 hrs per week, 138 hrs per year (around 60 min/day)

Well-being and motivation at work will improve

*Parameters used in the calculations:

Average return way to work:	60 km
Average speed:	60 km/h
Fuel consumption:	6,0 l/100 km
Price of fuel:	1,20 e/l
Number of remote work weeks per year:	46
Number of remote work days per week:	3
Carbon dioxide emissions CO ₂ :	0,166 kg/km
Carbon monoxide emissions CO:	0,0056 kg/km
Hydrocarbon emissions HC:	0,00084 kg/km
Nitrogen oxides NO ₂ :	0,00150 kg/km
Particle emissions PM:	0,000054 kg/km