

NETWORK OPERATIONS – A NEW STRATEGIC PROJECT IN THE DANISH ROAD DIRECTORATE

Network Operations is a concept that has evolved among European road authorities, recognizing that road authorities in the future must change their focus from not only building and operating roads but also being service organizations providing an efficient infrastructure for road users.

The Road Directorate has developed a strategy identifying a number of measures in order to realize the Road Directorate's goal as network operator. In addition, an action plan has been elaborated to prioritize the measures and to transform them into concrete projects and activities. The action plan will be implemented in 2012.

The presentation will focus on the Road Directorate's goal as a network operator, the specific measures and the initial experience with the implementation.

Internationally, working with Network Operations is regarded as the most important strategic measurement to meet the growing traffic challenges and increased demands for service and accessibility among road users.

A shift in focus

Network operations represent a paradigm shift that involves a new, more holistic role for the road authorities. In Network Operations, the role of the road authorities is shifting from being primarily an infrastructure manager, with the main focus on building and maintaining roads to being a network operator with an increased focus on road users and traffic flow.

This means that road authorities shall make the most out of the existing infrastructure by increased traffic flow quality, increased traffic safety and more sustainable transportation of people and goods. This is practiced by focusing on the road user in the daily work, both when planning and implementing activities. The road authorities further increase their engagement in strategic partnerships with municipalities, police, public transport companies, media and private service providers, with the aim of improving the transversal and overall utilization of the infrastructure and the development of targeted and co-modal services to road users. The road authorities also employ a range of new tools, technologies and methodologies, such as ITS. And they use road and traffic data as a strategic resource to gain knowledge about traffic, to control the traffic and to provide traffic information.

The term "network operations" is e.g. described in a report published by CEDR (the European co-operation "Conference of the European Directors of Roads") in 2004, on the move of the European road authorities towards Network Operations. Prior to the CEDR report Network Operations was also called "The Big Shift" - a concept originating from the USA – with a name that clearly indicates that this is a shift - a shift in focus.

Why Network Operations in the Road Directorate?

The Road Directorate's goal is to get the road users from A to B in an easy and safe manner. This can only be achieved by keeping constant focus on the primary customer, the road user, maintaining a good and reliable traffic flow quality on the road network and by working together with the entire transport sector.

Focus on the road user, improved traffic flow quality and better utilization of the total infrastructure are precisely the primary objectives of the Road Directorate's work within Network Operations. The implementation of Network Operations has been given the internal project name "Traffic Manager". The name indicates the focus on traffic, and that the work with Network Operations is a management task, which concerns everyone in the Road Directorate.

The rationale for working with the Network Operations concept is to be found in a number of external

factors concerning both the transport sector and the current macroeconomic situation, e.g. increased road user expectations regarding service level, growing traffic volumes, new technological solutions and the increased number of private players in the market.



ITS is implemented as a tool for improving the traffic flow quality and the traffic safety on the roads.

Network Operations in the Road Directorate today

The work with network operations is not completely new to the Road Directorate, and many on-going projects and activities support the work as a network operator:

- The Road Directorate has its own Traffic Information Center (T.I.C.) which 24-7 transmits traffic information via different media and performs supervision and control of ITS systems. T.I.C. can also callout a clearing and rescue service contractor to remove dropped goods on the road or to remove stopped or damaged vehicles.
- The Road Directorate collects dynamic traffic data, albeit from a restricted portion of the road network, and data from personal sources (Traffic Reporters and incident management partners). Furthermore, a pilot project on GPS based data collection is on-going. Data is used to provide real-time traffic information.
- A road patrol regularly patrols the roads and reports on maintenance needs, damaged roadside equipment and other traffic hazards.
- The Road Directorate establishes traffic management systems on motorways with capacity problems to increase traffic flow quality and safety. The systems primarily include speed control, lane control, queue warning and incident information.
- In connection with major construction works (road widening) there is focus on cooperation and coordination with local authorities, infrastructure managers and transport companies on the overall traffic flow in the affected area. Likewise, local ad hoc cooperation is performed at special events.
- The Road Directorate cooperates at the regional level with local authorities and transport authorities e.g. on data collection and common traffic information sites on the Internet.

- The Road Directorate implements various user satisfaction surveys and measurements of the services provided.

In addition, the Road Directorate has initiated a number of projects, which more or less directly underpins a prospective role as network operator.



The Traffic Information Centre (T.I.C.) provides traffic information and controls the traffic management systems.

The Road Directorate's future role as network operator

Currently the Road Directorate has a solid basis for further work with the network operations. However, there is a need to focus even more on the network operation goals, and these should be implemented in a structured manner in all the activities undertaken prospectively.

In order to steer this process a Traffic Manager strategy has been elaborated. The strategy defines the overall objective of the Traffic Manager work - Focus on the road user, Improved traffic flow quality and Better utilization of the total infrastructure. The objective can be directly related to the Road Directorate's company mission: To promote a coherent road and transportation system and work for the easy and safe transportation of people and goods.

The Traffic Manager strategy identifies six focus areas that are considered to be of particular importance to achieve the overall Traffic Manager objectives. The six focus areas are:

- Co-operation with municipalities
- Cooperation with police and emergency services
- Traffic Information
- Traffic Management
- Cooperation with transport companies and infrastructure authorities
- Internal activities

To ensure the implementation of the Traffic Manager Strategy an action plan has been elaborated. The action plan includes a number of activities, which are to be carried out in order to achieve the overall Traffic Manager Objectives – the activities are shown in the figure below, they have been grouped according to their main topic: Road works, Traffic control and traffic information, Infrastructure and Internal projects. The action plan further defines how the Traffic Manager performance shall be



measured, using a number of key performance indicators regarding road user satisfaction, traffic flow quality, and mobility.

Road works		Trafik Management and traffic information	
Priority areas	Easy gains	Priority areas	Easy gains
K-03 Plan for co-ordination of maintenance and construction work on the stateroad network and municipality roads	K-01 Focus on information to municipalities regarding road works	K-04 Co-operation with municipalities regarding common traffic management and traffic information	
P-02 Optimization of the administration process regarding road access applications	S-03 Electronic road access application	P-03 Creating a closer co-operation with the police regarding traffic management	
S-06 New tool map providing an overview of road works to support planning and information.	S-01 Overview of road works	I-01 Strategy for traffic information	
S-07 Increased focus on traffic flow at road works		I-02 Strategy for traffic data	
S-08 Increased focus on traffic flow at construction work	S-04 Focus on improved road marking for road works	S-10 Development of the current Traffic Information Centre into a national centre for traffic management and traffic information	
S-09 Improved information to road users at road works	S-02 Improved communication regarding planned traffic disruptions	S-11 The gathering of experience with ITS and the establishment of principles for ITS at road works	S-05 Pilot projects for the use of mobile variable message signs at minor road works
		S-12 The establishment of a common supervision system for signal control systems	

Infrastructure		Internal priority areas	
Priority areas	Easy gains	Priority areas	Easy gains
K-02 Definition and appointment of the strategic road network		U-01 Internal project in the Road Directorate	
K-05 Common strategic and coherent planning between the Road Directorate and municipalities		U-02 Anchoring of Traffic Manager on the executive management level	
K-06 Co-operation with municipalities regarding the handling of extreme rainfall	P-01 Improved incident management in case of extreme rainfall	U-03 Improved knowledge of road user's needs and priorities	
P-04 Optimization of The Road Directorate's recovery service contract		U-04 The setting up of KPI's for increased user satisfaction	
T-02 Improved comodality		U-05 The setting up of KPI's for traffic flow quality on the road network	
		U-06 The setting up of KPI's for mobility	
		U-07 Traffic Manager based incentive schemes in tendering	
		U-08 Improved use of statistic data	

Traffic Manager Activities within the action plan.

Because of its cross-organizational scope the Traffic Manager work has extensive managerial focus and is anchored on the top management level within all divisions and functional areas of the Road Directorate.

The implementation of the Traffic Manager strategy is organized as a programme in the Road Directorate with a cross-organizational steering committee and a programme manager dedicated to this one task. All project managers within the programme meet regularly in a project manager forum to ensure coherence of the projects but also as a means of bouncing new ideas and promoting a role as Traffic Manager ambassadors towards the rest of the organization.

Network operations - or Traffic Manager - will be a focus point in the Road Directorate for many years ahead and will be part of the framework defining how the Road Directorate will perform its work within planning, construction, operation, communication and information, and in relation to its cooperation with the rest of the transport sector.

