OPERATIONAL MAINTENANCE DIGITALIZATION

A BIG STEP TOWARDS RELIABILITY AND EFFECTIVENESS

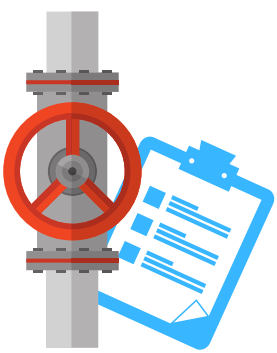
globema

INTRODUCTION

The number of possibilities to maintain the network infrastructure grows in line to technological progress. An effective relationship with a customer depends on a quality of network. It's important to not only deliver the service, but also to ensure its best quality. You have to take care of your customers even though there may be no real competitors waiting to take over. This could be the case of the heating companies – usually, a single heating company is the only provider for a particular area. An unimpeded hot water distribution for the households is important for the heating companies themselves as well as for the local authorities. Here is the reason why the network reliability is so crucial.

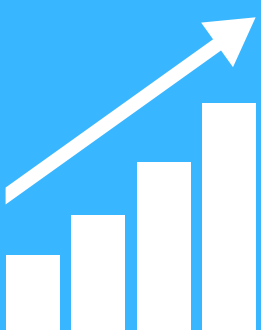
The reliability of a heating network mostly depends on two factors:

- ✓ **Long-term maintenance, repair, and operations** (MRO) quality (network repair and maintenance works, rebuilding or expanding the network).
- ✓ **Operational tasks efficiency** (everyday inspections of substations, valves and chambers, breakdown service, heating network analysis and setting the parameters).



Knowledge about current technical condition of the network is basis for an investment planning. It's hard to plan the infrastructure's expansion or replacement when you don't know the network's condition and you can't assess thoroughly which parts need to be repaired or replaced in the first place.

Heating network's current conditions are obtained mostly through periodic inspections, recorded breakdowns, and telemetry systems. The quality of the collected data lies an efficient long-term investment planning.



Quality of the data collected during field service is necessary for successful investment planning!

QUALITY OF THE DATA COLLECTED DURING FIELD SERVICE

Field service operations performed by the technicians are a key source of information about the network. Technicians typically provide services such as installation, repair, maintenance, parameter setting, breakdown service, and check-up of customer-owned equipment.

In the majority of the heating companies, field service management is based on manual planning on a paper or in Excel sheet. The tasks are distributed between the technicians during the dispatch and the whole communication is based on phone calls only. Condition of chambers or valves is registered in a paper form, often in a disorganized way. Usually, the data is registered only after the technicians return to the office. Sometimes, the notes made by technicians during the inspection are copied into another dataset, such as Excel sheets. The companies often have a few of such datasets for different areas of work. This way of collecting the data has many flaws.

Such dispersed datasets are incomplete and inconsistent. It's hard to retrieve actual information from it. It's also a big challenge to combine the data collected in different datasets and then to perform a network's condition analysis for planning all the necessary repairs and future investments.

DIGITALIZATION AND ITS IMPACT ON THE NETWORK DATA QUALITY

The data reliability and completeness can be improved. Use Field Service Management (FSM) systems to digitalize the field operations in your company.

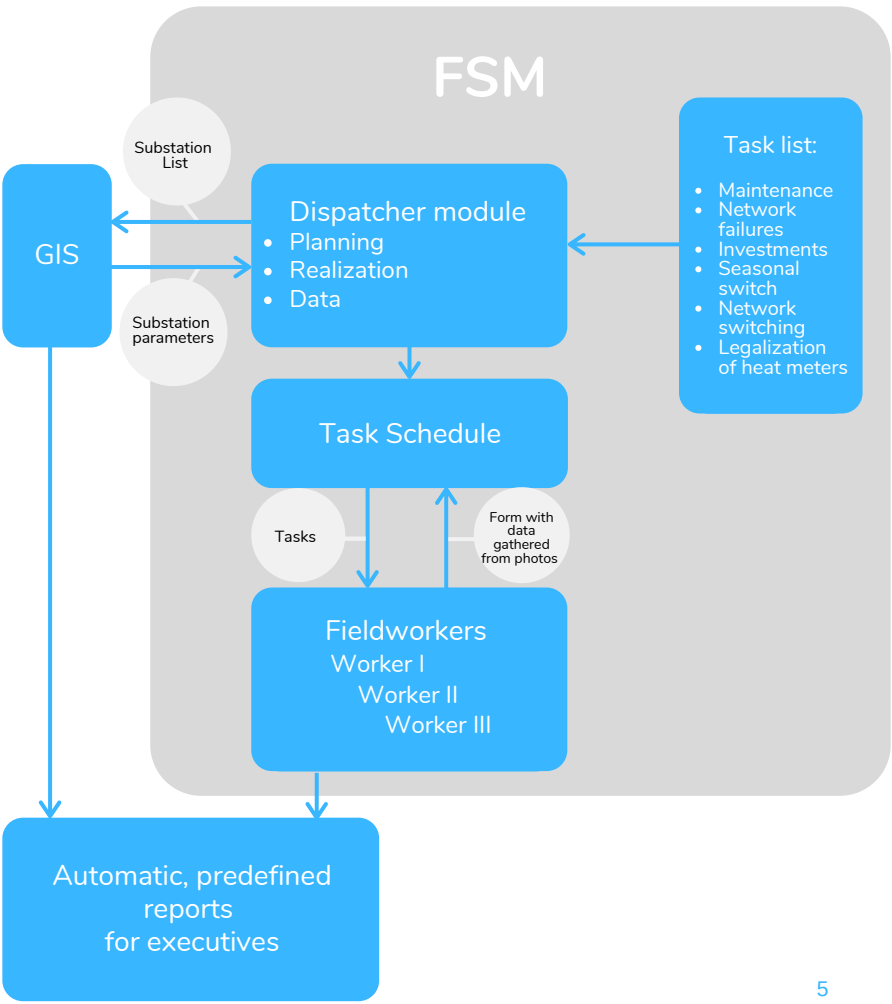
FSM systems consecutively **improve planning and executing the field service operations.** It dispatches operational tasks in an automated way, based on **many criteria:**

- Skills needed to perform the task
- Tasks length and deadlines
- Skills and availabilities of technicians
- Tasks location
- Technician's optimal daily route length

In case of unplanned events, the manual modification of the plan is supported.

The assigned tasks are automatically sent to mobile devices owned by teams or individual technicians. Every assigned task **includes necessary information and attachments.**

FSM mobile application allows to **register the performed task's data and condition of the network immediately** at the spot. Preconfigured forms simplify registering the data including photos and voice recordings. This all results in a complete, reliable and standardized data which are collected in **one, common dataset.** This way, FSM system supports reliable collection of the network data.



FIELD SERVICE DIGITALIZATION – BENEFITS

Digitalization of the field service operations with FSM systems enriches the knowledge about current networks' conditions. It obviously ensures its reliability.

FSM ensures that all of the operational services, including inspections and maintenance, **are performed accordingly to the plan.** The data about conditions of the current networks' elements are collected in the mobile application. It's a good basis for analysis and helps in effective investments planning.

The digitalization results in the **direct economic benefits.** An example is the change in the procedure of the substations' performance analysis and correction of its settings. Typically, if the substation lacks a telemetric device, technician writes down it's current performance parameters and the environmental parameters for the further calculations. Then, he passes the data on to the senior technician who performs the analysis and determines "underheat" or "overheat". Only then decision about correction of substation's settings can be made. This requires the technician to pay another visit to the substation's site. The FSM mobile application performs the parameters' calculations during the field service operation. In case of an "underheat" or "overheat" the technician can easily correct the setting right away and register it in the application. **This saves:**

- **Mobile workers' time** – there is no need for a second visit on a site
- **Heat energy**, which is delivered in an excess in the case of an "overheat"

INFORMATION ACCESS

	CHALLENGES	NEEDS
	Organization: → Everyday, the management members are engaged in a decision-making process for a task dispatching → Everyday, many employees need to manually prepare the data and reports → Installation, repair, and maintenance plans are based on fragmented data	→ **One source of information** → **Saving time** on reporting within the organization – better use of workers' skills → Repairs planning based on the whole network's data – **improved resource management**
Reports, strategic decisions	**CEO:** → The data about a network's condition need preparation, are incomplete and rarely updated → The reports lack the data on the tasks' efficiency → It's hard to determine the KPIs (Key Performance Indicators), which could be monitored regularly (shortage of the data)	→**KPIs** (Key Performance Indicators) updated every day → **A direct access to the operational data** – tasks, nodes' condition, descriptions, photos → **Accurate personal costs** of a maintenance, investments, switching
Reports, operational decisions	**Executive manager:** → Lacking documented daily reports on the performance of the tasks (tasks' descriptions, photos) → Lacking the data on the tasks' workload and workers' efficiency → No organized information from the inspections of the nodes and chambers	→ **The report on the network's condition** updated every day – lists of nodes and defects → **Daily reports on work's efficiency** and crews working hours count → **Immediate access to the data** on nodes, chambers, failures – photos, descriptions, forms
Data collection, reports	**Master workman:** → Has to remember crews' timetables → Doesn't know the exact current locations of his crews → Has to collect work reports from every crew	→ **Receiving finished reports** of inspections → Monitored list of nodes for inspections → **Reports created automatically**
Data collection	**Technician:** → The plan of work has to be during meetings in person → The data has to be written down on a paper during the inspection or the maintenance work → Needs to manually copy the notes after returning to the office	→ All of the **information** about the task **available from a mobile device** → All of the notes and reports are **immediately entering the organization's database**

FSM system improves efficiency of field service operations by **automated planning, shortening the routes and travel time, direct communication with the technicians and eliminating the paperwork.**

FSM system can significantly improve the seasonal switch of the heating substations settings, providing the optimal dispatching of work to the teams/individual technicians and ensuring fast and efficient handling of the customer calls. This positively influences satisfaction of your customers.

FSM optimizes routes and automatically plans the work of mobile technicians within a few minutes. The system suggests optimal assignment of current important tasks to the workforce of the company.

Want to learn more?

Ask our experts how to move your network's operations to the digital age.

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