

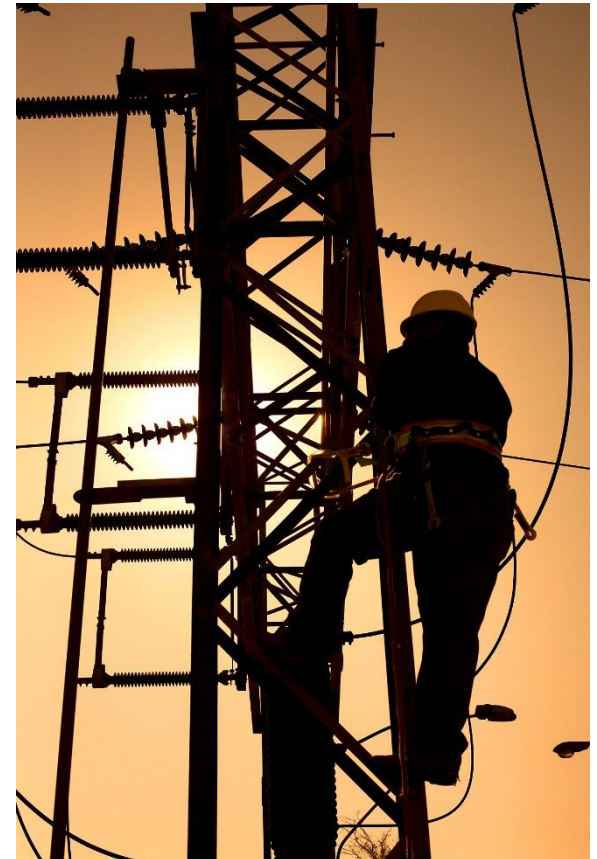
Trends and best practices in Workforce management systems

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Trendy elektroenergetiky v evropském kontextu X.

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Workforce management from perspective of DSO's needs

Expectations of management

- Productivity increase
- Cost reductions
- Efficient resource allocation
- Service quality fulfillment
 - Security, quality standards, price, ...
- Inputs for ongoing optimization

Expectations of field staff

- Intake and processing of work orders
- Information support in field
- Decrease in workload
- Reduction of paperwork

Expectations of customers

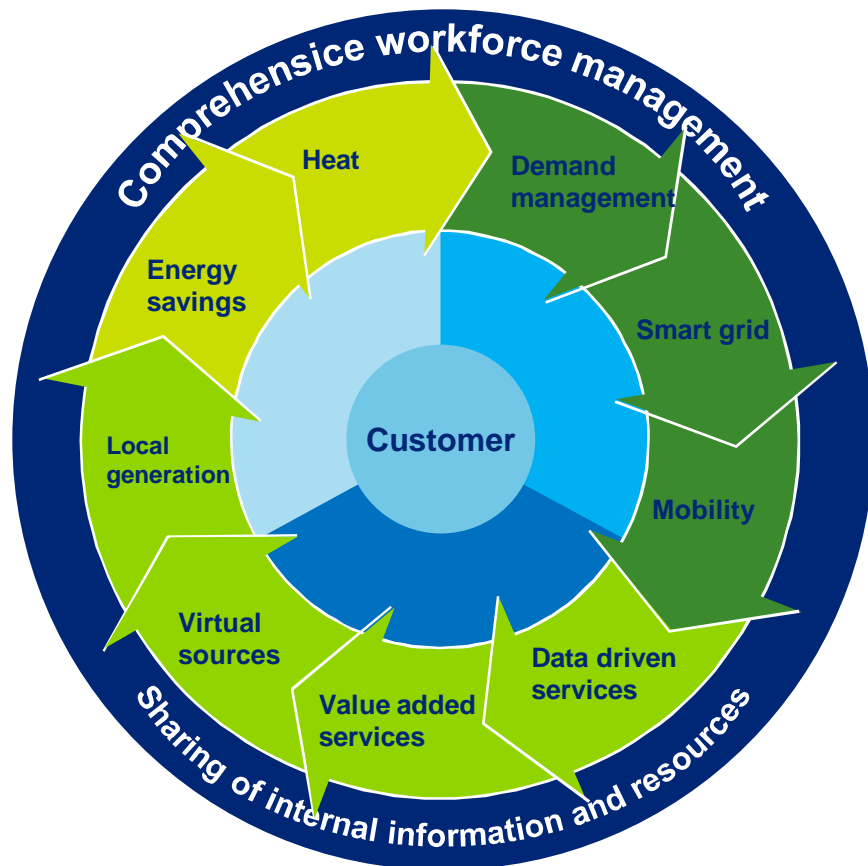
- Continuous supply
- Adequate response time for requirement solution
- Decrease in electricity prices

Expectations of regulator

- Standard fulfillment
- Quality increase
- Cost reductions

WFM in new reality

Because of higher energy localization needs for efficient WFM will increase.



- **Energy industry will be more focused on local solutions and services. Target markets are distribution, RES and customer services.**
- The only success factor is to fulfill **COST TO SERVE** and **CROSS/UP SELL** principles
- Reactive model is changing to proactive, services are customer centered, who changes their management logic
- **Change in asset maintenance procedures**
- **Service model update related to smart grids**
- **Ageing workforce**
- WFM gives tools for efficient mastering of these factors

Challenges in WFM implementation

Successful implementation of WFM can be measured by cost reductions, increase in productivity etc. Another scale is customer or employees satisfaction or fulfilment of defined quality standards.

- Mutual solution for different field activities vs. several tailored solutions
- Level of automatization and optimization vs. experience of dispatcher
- Increasing productivity, efficiency, change dynamics vs. requirements on safety
- Change in activities, processes, service areas, organization
- Technology and data – maximization of SW usage and data with constant level of minimal requirements on personnel (simple interface, intuitive interface...)
- Level of supervision, control vs. competencies and responsibilities of field staff
- Speed of implementation, ability to react to changes,....
- Operational model of IT solution
- Solution for unexpected situations

Technology trends – Where is IT headed?

Main changes in IT in following 3-5 years

Mobile Solutions

- Quickly developing wireless connectivity, mass mobile devices adoption and increased performance allow increase in process productivity with expanding use to additional activities and allow work with data on the spot where they acquired/emerged.

Cloud Computing & Virtualization

- New flexible model for traditional computing centers, which combines and interconnects internal infrastructure with Cloud services. The result is quickly scalable solution for development and test purposes or for production systems with variable performance requirements. Number of solutions available in Cloud is rising

Data Analytics

- Structured utilization of analytical methods and technologies enables fact-based decisions.
- With increasing data volume about customers and their behavior their evaluation is changing. Detailed application of Big Data, Data Mining, BI techniques become a comparative advantage in competition to gain customers and for operational task solutions.

Social Networking

- Enables team cooperation and information sharing and exchange in real time
- Cooperation in geographically distributed teams
- Trend is in freer integration to benefit flexibility and innovation capabilities
- Possibility to use new digital tools without delay from implementation of complex architecture

Security

- Security of data and systems is becoming more important with global networks and increase in sophisticated attacks and costs/losses are rising. New area for the security issues are mobile devices.

How new IT trends are applied in WFM solution

New IT technologies increase options and demands of WFM

1. Mobility (base requirement on WFM) – faster application, layouts and information availability through mobile client with of wide spectrum of end devices.
2. Cloud Solutions/SaaS – quickly available and easily scalable solutions already offered by reputable WFM vendors.
3. Data analytics – it is not only a maintenance support, but performance enabled by new technologies allows quick processing of large data volumes (online analyses) or use of statistical methods for optimization.
4. Integration of traditional tools (functionalities of WFM) with ERP systems – not only to increase functionality but by strategic partnership of vendors or company mergers and acquisitions.
5. Social networking – in WFM it makes available broad information bases also with possible communication with experts and consultants.
6. Strong focus on cost effective solution – the answer is openness, integration, scalability and alternative usage of SaaS/Cloud solutions.
7. Security – growing importance of systems using public communication channels and systems transmitting increasingly large amounts of data containing sensitive data about customers and operated / maintained equipment.

A more detailed look at the news in WFM - 1

- Mobility/mobile devices
 - Open platform for connectivity of wide spectrum of end devices (with BYOD options)
 - Easy distribution of applications and their upgrade on end device
 - Security of end devices (encrypted communication, MDM, LDAP authentication)
 - The increasing power of mobile devices allows extensive support for workers in the field (update data in real time, using HTML5, the possibility of off-line operation, ..)
 - Integrated navigation is becoming a standard
- Integration and functionality expansion of WFM
 - Development of solutions from WFM to FSM (Field Service Management) with possibility to cover whole end-to-end process (service billing, parts orders, CRM, contract management..)
 - Alternative cooperation of traditional WFM suppliers with ERP/CRM suppliers
- Social networking
 - Communication between mobile staff
 - Expert opinion access - „chat consultations“

A more detailed look at the news in WFM - 2

- SaaS/Cloud Computing
 - Strong challenge to „classic“ IT model not only in costs
 - Easy scalability, continuous updating, guaranteed availability (valid for solutions / applications ranging provided as SaaS, which may not be the target range of the entire end-to-end solution for which additional integration of applications must be solved)
 - Minimization of initial investment costs, risks of unsuccessful implementation and time needed to launch WFM go-live.
 - Minimizing the initiation of capital expenditure, the unsuccessful implementation risks and time needed to launch the operation WFM
- Data Analytics (BI)
 - Support for reporting, monitoring of performance parameters (KPI), managerial insights and analysis
 - Optimization based on statistical analysis
 - Statistical data processing for the purposes of predictive maintenance

A more detailed look at the news in WFM - 3

- Security
 - Developing the WFM functionality to end-to-end solutions (including contract management, billing, etc.), use of the Internet and openness to a wide range of end devices provides enhanced security requirements of the entire solution.
 - Specific part for the solution of security issue is the mobile device and the entire group "Internet of Things,,.
- Where are still scope for further development of WFM solutions?
 - Big data - complex analyses and statistical predictive models (operation, maintenance, failures, costs,..)
 - Connected vehicles (location, speed, operation, sensors, maintenance, technical condition,..)
 - Wearable devices (work aids, protective equipment, sensors, personnel monitors,..)
 - „Internet of Things“

Best practises

Key areas

Technological possibilities are only a precondition for successful project realization, but will not guarantee best practice.

To reach WFM system maximum one must connect technological possibilities with functional process support.

Key areas of best practices:

- Support of workers in field
- Capacity planning and optimization
- Implementation



Best practises

Field staff support (1/2)

- Optimized design and functionality of applications for mobile client
- Simplicity and unambiguous filling out and data gathering
- Interconnectedness and simple navigation between applications
- Support of all field activities
- Availability of applications, layouts and information through mobile client
- Reduction of administrative tasks
- Independence of mobile client on specific platform or device

Best practises

Field staff support (2/2)

- Features of mobile client
 - Intake and processing of work orders
 - Last-mile navigation – „to the asset“
 - Technical records
 - Electronic forms
 - Storage management
 - Bar codes, RFID, NFC,...
 - Collaboration support
 - Internal portal access
- If missing it leads to quality, motivation, efficiency loss...
- In field activities support we can identify trend of mobile application propagation for inspections, development planning, customer dialogue etc.

Best practises

Planning and capacity optimization

- Capacity utilization based of qualification, equipment on service area without organizational structure limitations
- Categorization and prioritization of tasks
- Support of long term needs planning, predictive analyses
- Automatization of short term plans preparation with options for manual changes and their reflection in following optimization steps
- Continuous management and optimization of field activities in line with current position of teams and status of individual tasks
- Capacity allocation
 - 2 different approaches may be used
 - Reserve for potential operative tasks
 - Daily capacity replanning – motivation factor
- Ex-post evaluation and data analysis of WFM for following system optimization

Best practises

Implementation

- Unification, standardization of processes and activities
- Great emphasis on design of mobile applications, including control adjustments, data gathering
- Replacement of paper documents and their circulation
- Gradual increase of optimization, automation
- Focus on maximum flexibility, customization of SW solution
- Design, content and workflow changes of mobile client on the level of experienced user

Conslusions

Key success factor of WFM is the field worker

- Role of WFM system in service organization will increase with changing environment and requirements for increased efficiency
- WFM can not be perceived as a separated system for work order assignment, but as an integrated part of information support of the organization
- WFM platform can be used as a support for other field activities – inspections, development planning, customer dialogue etc.
- Development of SW solutions allows to react on new challenges, mostly in the following
 - Mobile client
 - Flexibility and openness
 - Business intelligence
 - IT operational model
- WFM is an endless process requiring continuous feedback and development

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