" Sofiyska Voda processes the signals with the PEGAS platform

The integrated information system allows the company to monitor in real time the performance of the repair works and optimize the speed of the feedback to the customers.

Being part of the biggest utility companies in Bulgaria, Sofiyska Voda is one of the companies which quickly becomes aware of the importance of the technological development for the business success and their customers' satisfaction, especially in a sector where the quality of the services and the options for quick response in case of failures are directly linked with the public interest. The challenges vary from failures on the WSS infrastructure, numerous signals and requests from customers for checks, time-consuming repairs, etc. In order to manage its activities in such situations, the water company has created its own information system for processing of signals, in order to meet its specific requirements. PEGAS is an integrated information system for processing the signals to Sofiyska Voda, concerning water supply and sewerage, and the platform covers the whole life cycle of the signal – from its reception until the work on it has been finished …

"The process envelops the different departments of the company – coordinators, inspectors, construction contractors, external subcontractors etc.", Petko Petkov, one of the system designers explains.

According to his words, "PEGAS" is executed mainly with Microsoft technologies, as namely it is written on the.NET platform with the assistance of the language C# (C Sharp). Apart from being an office application, the system comprises some hybrid mobile applications and interfaces. Microsoft SQL Server and IIS (Internet Information Server) are used as data base and web servers. All devices on which PEGAS works at the present moment are Windows-based: servers, work stations and tablets.

"This software system covers completely the operational part of the company's activities. It has in it integrated options for real time document exchange, mapping and coordinate exchange with our GIS system. Also, PEGAS allows the storage of libraries with versions of different documents which is very valuable to us. Through this platform we received a functionality for a detailed audit of the changes and transactions made by each user. In this way we could guarantee the data security and analyze the different imperfections in the processes which allows us to constantly implement improvements", Teodora Todorova, Projects Director in Sofiyska Voda, comments.

The departments that currently rely on the system are "Control Center", "Water network management", „Technical control", Sewerage Services Department, Finance Department, „Call Center" of the company, "House Repair and maintenance" Department. The company subcontractors that perform a part of the emergency repairs of the WSS networks are external users and through the system they register the finished task.

Way of functioning

The utility company decides to design and implement the information system PEGAS as an answer to the challenge, dictated by another technological integration – the one of specific module from the SAP system.

"We used a very old platform for signal reception which was incompatible with SAP, and when we decided to implement a new customer module, we faced the challenge to find a fast solution to substitute the old system. That in question was the leading aspect in the planning and development of PEGAS", Todorova remembers.

"The SAP system is serving as a main source for our customers' signals now as well. That is why it was important that it is easily integrated with our new platform and that the two start simultaneously in practice. In this way they create a 2-way interface– from one side we receive signals, from another– we return in real time statuses providing information about to what stage the work on each of these signals has come to. The moment when the status of a request is changed in PEGAS, it is immediately reflected in SAP as well", Krasimir Krastev, Control Center Senior Manager in "Operations and Maintenance" Directorate, also shares.

The very signals are received by Sofiyska Voda via different communicational channels, maintained with all interested external counterparts– institutions, companies, customers etc., as most often they are connected with inquiries and information about problems with the provided by the company services. The most often way of communication is via the company call center.

"Apart from that, on our website there is a platform called Information Center. On it, on an interactive map, each user has the same options to file a signal by indicating the specific site and describing the failure, and after it there is a reaction along the chain", Teodora Todororva emphasizes.

According to Krasimir Krastev, this particular map of Sofia that Pegas has is also one of the most useful instruments of the platform's mobile version, because when an employee pinpoints a specific spot on the map, it automatically gets geographic coordinates. They are transferred to the desktop version of the program, and from there also in the GIS system of the company. This allows the teams to address precisiely the problematic zones and to file information towards different institutions with access to the map (MoS etc.), for the location of the performed repairs.

After a signal is received in the system, the coordinator for a specific region forwards it to the field expert on duty who receives information through the mobile application on his/her tablet. After he/she gets acquainted to the different characteristics of the problem, he/she makes a physical inspection on the spot, describes the failure again through the system, with all peculiarities of the case. The coordinator checks and

confirms what is written as requirements, after which each assignment for a repair goes through a confirmation stage by the direct manager of the field expert. After the process of checking the signal is completed, the task is assigned to a company team or external subcontractor.

"When the repair is finished, it is registered through the mobile application with all the technical information. The information arrives back to the Control Center, where it is checked and confirmed and by doing this, we look for comparison between the technical characteristics and the deadlines for the assigned and performed task. After the task is completed, other processes follow that are again covered by PEGAS – an inspection by a technical control team and a process of so called preparation of payment documents, which represents the financial-accounting part of the "life" of a signal, Todorova tells.

Challenges

Although in a technical aspect the only challenge is the integration of PEGAS with SAP, at the beginning the new platform is accepted with mixed feelings by the employees of Sofiyska Voda AD.

"Amongst the internal users of the system initially there was a stress because of the visual differences between the new and the old platforms. The presence of many software controls that don't allow one action to be performed before another also turned into a challenge. For while, this got a lot of the people confused, but in the end they got used to this fast because PEGAS optimizes in a nice way the time that our employees on the field spend with administrative tasks. This is already done remotely in a matter of minutes", the Sofiyska Voda Control center Manager Krasimir Krastev explains.

Teodora Todorova adds that for the internal users the news that with the PEGAS integration every transaction on the system will be traced was also stressful.

"In the beginning our employees were a little bit irritable that all the history of the activities and the changes that the employees make, no matter whether it is about a grammatical correction of a given log or a change in the technical parameters of an assignment is known. With time, however, people got used to it and began to take things positively", she states firmly and emphasizes that after the tons of paper are substituted for tablets, a fundamental change in our employees' perception and their way of work has been reached.

Now they have devices with which they could check information in real time, connect to the GIS-system etc. So the initial confusion in a short time was replaced by the desire to use the new technologies and enhanced feeling for belonging to the company", the Projects Director also comments.

Outcome and upgrade plans

The positive outcome from implementing the integrated information system is not late. From the system implementation start 120 485 signals have been processed in

the system, as 82 658 of them have arrived through the interface with SAP. The signals through mobile applications are 22 174. Recently, in the system a functionality for performing field inspections connected with repair safety (keeping up with standards for using personal protection means, putting fences around the site, reinforcement etc.) has been developed, as for the time being their total number is 1 797.

Before implementing the new software, the Sofiyska Voda teams suffered from serious delays in the passing of information.
"The coordination was made via phone but the delay came from the fact that after performing the inspection on site, the paper documents had to reach one of our offices, and from there to be sent to the Control Center as the coordinates were registered manually. The biggest advantage in this direction is that the data from the inspections which used to show from 2 to 15 hours later because it was all on paper, now are available the moment the inspection is made. This guarantees the reception of adequate and current information which we can share with our customers immediately", Teodora Todorova also says.

Last but not least, the advantages of PEGAS have also environmental dimensions, as according to Krasimir Krastev, the activity of this platform saves a minimum of 100 sheets of paper a day which is over 40 000 per year.

As far as the opportunities and plans for system upgrade are concerned, Sofiyska Voda is planning to have it integrated with the platform for failure signal filing "The citizens /Grazhdanite/", and in this way to open another channel of communication with its customers. In a technological aspect the company is preparing a new module connected to the resource and team management.

"In this module information will be registered which employee is at work at what time, to which team he/she is forwarded, which machine will work with which team etc. This will be a new module which will show the overall organization of the teams", Krasimir Krastev explains.

"The goal of the module is to manage to optimize the utilization of all resources– human and specialized equipment. We want to have information in real time for the work of each piece of equipment and each expert, so that the working schedules are most effective and the time for servicing customer requests is shortened. Apart from that, we are thinking about developing another mobile application that will include the activities of our sewer cleaning machines, so that we have a real time confirmation for what is done by this specialized equipment independently within the system framework", Teodora Todorova concludes.

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