

PROJECT MANAGEMENT TOOL DEVELOPMENT TO AID THE RISK MANAGEMENT

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Abstract: *The theoretical basis of our R+D activity is an outstanding work of Dr. habil. Gyula Mezey: "Operatív veszélyhelyzeti tervkészítés - 2005" (Operative Emergency Planning – 2005) highly appreciated by both the Home Ministry and the Association of Policing Sciences in Hungary. Emergency and recovery plans can be handled as special project plans, and they can be stored in project management softwares that are able to track the execution and can be also used as a communication channel. If every organization's contingency plans of the cooperating organizations can be quickly united into a more compound contingency program of the same sort of software (for instance MS Project, or something else), that is a good start for integrating these projects. Also, a PERT project management solution was drafted by Mezey (see „Veszélyes üzemek biztonságirányítási rendszereinek tervezése” in Proc.: XI. Országos Tűzvédelmi konferencia-szeminárium 2005. május 4-6 Gyula, pp.116-121). But there are other issues to be solved as is said in Mezey „National contingency response and crisis management support at cabinet level” Sibiu, Land Forces Academy Publishing House, 2007. Paraphrased in p. 107, different resolution issues also must be taken into consideration and in our research it did a lot of good in the beginning of our work that we had to focus onto this phenomenon. Each organization's emergency „plan can be organized hierarchically by phases, within phases by steps, and within steps by technical complexity. By systematically changing some of our assumptions after every stage, plan-block 'families' can be built onto 'scenario-families'”. Not only the project management software can be utilized in the risk management, but some elements of project-oriented organizations can be applied, too, in order to make this area more efficient.*

Keywords: *emergency plans, recovery plan, project management, computer aided, organization.*

1. NECESSARY FUNCTIONS

The emergency plans – like project plans – contain the following information:

- Tasks
- Estimated time and cost
- Related documentation (e.g. user guides)
 - Relations between the tasks
- Tasks that can be made parallel
- Tasks that have to be started at the same time
- Tasks that have to be finished together
 - Responsible persons
- Name
- Position
- Contacts

The emergency and recovery plans are critical. This is why it is necessary to use a document handling system with a

customizable and safe permission system that will assure the hierarchical and tracked access.

In case of project plans the start and the expected due date is known, and projects start with a kick-off meeting where each project member are invited. In case of emergency and recovery plans the start date cannot be planned, and usually there is no time to convene long, formal meetings. This is why it is necessary to use an automated process, which is able to notify the project member that the project – the execution of an emergency and recovery plan – has been started, and he or she has to be ready.

Because of the importance of these plans they must be 24 hours a day available for all project members and the risk management administrators.

The actors of emergency and recovery plans are not only employees of the company, they may use their own IT and communication system and it is also possible that they are geographically in different places. This means that the system has to be available from the desktop and mobile computers of the company using wired and wireless (e.g. GSM, Wi-Fi) connection and even from the headquarters of the regional emergency office.

2. THE NETOFFICE SYSTEM

On the market and among the open source softwares exist many project management systems that fulfill the requirements above. The most known commercial project management system is the Microsoft Project Client application and the Project Server that is a professional tool for companies where many users work in a multi-project environment.

For my researches I have selected the NetOffice DWINS (NetOffice) system, because it is also fulfills the requirements described above and as an open source system, it very cost-effective for the small and medium enterprises and it is allowed to make changes in the source code.

2.1. GENERAL INTRODUCTION OF THE NETOFFICE DWINS PROJECT MANAGEMENT SYSTEM

The NetOffice DWINS system (NetOffice) is a web-based multi-project management server solution. The graphical user interface of NetOffice was written in php programming language, and it needs an Apache or IIS web server with php plug-in. The NetOffice supports various database servers to store files and data (e.g. PostgreSQL, MySQL), and the developers principally suggest to use of MySQL.

The source code of NetOffice is available for all users, and it can be even modified and distributed under the terms of the GNU Public License.

For my researches, I have used the NetOffice system with a MySQL database server and an Apache web server.

2.2. THE NETOFFICE ADMINISTRATION GRAPHICAL USER INTERFACE

The administration site of NetOffice is to set the general system parameters, to configure the user permissions and on this site can the project managers and project administrators create new projects. Also from this site can the project manager publish the projects details for the project members by the publishing function.

The general system parameters are the properties of the mail server, the calendars (non-working days, planned vacations etc.) and the rules of works. On the user administration form the administrator has to maintain the users' login names, names and contact details (e-mail, mobile, phone etc.) Also generic human resources can be entered in cases when only the responsible position (e.g. shift supervisor) can be defined but not the person.

The following information has to be entered when a new project plan is created in NetOffice:

- Project name and short description
- Project members
- Estimated duration
- Necessary resources

A new project will be available for the project team, when the project administrator publishes it on the project site.

2.3. THE NETOFFICE PROJECT SITE FOR THE PROJECT MEMBERS

This graphical user interface is available for all project members, and they can here check their tasks, save and comment the project documentation. The NetOffice has an automatic document versioning function that makes the project site an authentic document library where all document changes are tracked.

The NetOffice offers discussion boards for the whole project and for the specific tasks or documents. These forums will reduce the uncertainty and the number of the open issues, because only the project managers can change the status of the discussions. The open issues

will be transparent for the whole project organization – for the steering committee and for all project members – because these questions can be listed at any time. The project plan will be accepted only when all the related discussions are closed with a written agreement.

2.4. USING THE NETOFFICE TO STORE AND EXECUTE EMERGENCY AND RECOVERY PLANS

To enter an emergency or recovery plan into the NetOffice has to be done on the same way as in case of projects. It is very important that the plans have to be stored as a template with not started status without any start date, until it is not activated. As against the general projects in case of emergency and recovery plans, the deadlines and the scopes may change during the project.

The risk management organization of the company has to operate revision and updating processes in order to keep the emergency and recovery plans up-to-date. Any modifications in these plans have to be entered into the NetOffice system. This revision doesn't only mean the process itself, but the details of the users. The details of the named project members has to be updated every time if a their sphere of activity or employment status changes, in case of generic project members the details has to be updated on organizational changes.

It is recommended for the enterprise to use the project site as an authentic source, which means that the project site is the default channel of communication and all related documentation, information and agreement are archived on the project site, other sources (e-mail, personal communication) are not valid until they are not added to this site.

2.5. USING THE NETOFFICE SYSTEM TO SUPPORT AND FOLLOW-UP THE REALIZATION OF EMERGENCY RECOVERY PLANS

In case of catastrophe the relevant scenario has to be selected and the workflow must be activated. To activate a workflow means

practically, that the project status has to be changed to „opened“, and the system will automatically timestamp the start. The system will send an e-mail to all responsible persons about their tasks. By configuring the e-mail server it is also possible, to send not only an e-mail but a short message (SMS) to the mobile phones at the same time. Using this feature it all instruments which has a GSM or an (wired or wireless) Internet gateway can be operated automatically and remotely (e.g. activating sirens). In this case, NetOffice has to be modified so that it will be applicable to send information in special message formats (e.g. SMS or XML). Thanks to the GNU Public License, the source code of the NetOffice is available, and a PHP-programmer can realize the necessary changes in a short time.

Responsible persons have to update the task status in the NetOffice using a web browser as soon as they have finished a task. When a task becomes finished status NetOffice will send immediately a reminder to the responsible of the following task. This function is very useful the emergency and recovery plan affects geographically different places and the project tasks have to be harmonized. Such a case is when the electricity has to be switched off in a building before the firefighting starts.

It is possible to attach various files to the tasks. Such files can be maps, data sheets of hazardous material or the user guides of the applied instruments. The reaction time in case of emergency can be radically reduced if the responsible person receives not only a short description of the task from the NetOffice, but all relevant information in electronic form stored in this database.

Using the NetOffice system to communicate and to track the execution of the tasks in case of emergency, that makes post-analysis possible. This analysis can be used to improve and to make more accurate the emergency and the recovery plans.

3. ORGANIZATIONAL BACKGROUND

NetOffice or the similar project management software requires a centralized co-ordination. This is why to set up a

risk management organization is highly recommended. This chapter describes a model that provides an efficient solution.

The suggested risk management organization based on a general project management organizational structure and consists of the following teams that have to cooperate with each other:

- Risk management steering committee;
- Risk management co-ordination;
- Risk management support.]

3.1. THE STEERING COMMITTEE

The steering committee members are from the top management of the company. They have to approve the emergency and recovery plans, because in case of catastrophe the co-ordination team temporarily has to control the company as described in the plans.

After emergencies the co-ordination team has report to this organization, and they will evaluate the efficiency and they will order to make changes in the plans if necessary.

3.2. CO-ORDINATION TEAM

The co-ordination team has different tasks during the normal operation and in case of catastrophe.

During the normal operation, this team is responsible to keep the plans in the NetOffice system up-to-date, and to prepare the employees for catastrophes on trainings. This team has to create the training materials; they have to hold the training and the examination if it is necessary.

In case of catastrophe, this team has to control the company. This team is authorized to stop or restart processes or even the whole production. This team keeps contact with the authorities and the management. The duties

and limits of this organization have to be defined in the approved plans.

3.3. SUPPORT TEAM

The support team is responsible for the quality assurance and administrative tasks on different fields. In order to fit the emergency and recovery plans and the related documentation into the company's documentation management system this team provides the documentation templates. This team will organize and supervise the regularly review of the plans. They have to monitor and communicate the changes of related legislation. This team has to assist at the arrangement of the trainings: inviting the recipients, providing the necessary equipments etc.

In case of smaller companies, this team can be a part of the quality management organization, in large organization is suggested to set up a standalone team.

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