

What you really need to be prepared?

Jaroslav Pejcoch¹

¹ *Chairman of the Board, T-SOFT a.s., Prague, Czech Republic*

Email: pejcoch@tsoft.cz

ABSTRACT:

The risks all over the Globe seem to be increasing. It is hard to assess, if it is caused by the real increase of threats, finding us unprepared, or just by the fact, that we have almost unlimited possibilities to share information almost in the real time and we know about all the troubles happening anywhere on the Globe. How can we assure our preparedness for the disasters? Is our organization/region/country ready to deal with even complicated cases? And what does it mean? After years in crisis management we came to a very simple conclusion: Everything is in people. And the most valuable contribution to the preparedness is the investment to the people through their education, training, exercising and evaluation. A basic set of methods and tools will be described, how to build the preparedness through people.

KEYWORDS:

Critical infrastructure, Security, Exercising, Scenario, Crisis management, Organizational memory, Process management, Risk management, continuity management, Common situation picture, Personal profiling

1. INTRODUCTION

There have been many articles written about the preparedness. Preparedness obviously means our ability to cope effectively and efficiently with something we do not expect in the very moment. Or something, we do not understand to be a part of a standard living or work process. But also for something which will definitely come in a future, but we do not know all the details and we are not sure about our capabilities to handle it, for example the Graduation test. Our preparedness to wake up in the morning and go to the work is obviously far better than our preparedness for a car accident, industrial disaster, flood or terrorist attack. To prepare itself and keep to be prepared cost some effort, time and money and has no apparent measurable benefit. The preparedness is hard to measure. The final judge is the exceptional situation itself – when a disaster strikes. After it we obviously know very well what was necessary to do while reacting to it. After it we know, what we could do better if we were prepared.

And it applies both to us as individuals and us as organizations. The examples are numerous; one of them might be the City of Prague, which was very seriously hit by the floods in 2002, leaving lot of serious damages. The review and actions which followed up the disaster dramatically improved the preparedness in many dimensions (risk mitigation by investment, modelling, rescue coordination, ...) which paid off about 10 later during another huge floods, which were handled much better. ^{1 2 3}

¹ http://en.wikipedia.org/wiki/2002_European_floods

² http://en.wikipedia.org/wiki/2013_European_floods

³ Editors: Schanze, Jochen, Zeman, Evzen, Marsalek, Jiri (Eds.): Flood Risk Management: Hazards, Vulnerability and Mitigation Measures, ISBN 978-1-4020-4598-1



2. WHAT IS THE PREPAREDNESS AND HOW TO MEASURE IT?

The **PREPAREDNESS** has many definitions, mostly tied to war. But for our purposes the UN definition is very close to what we are discussing here: “Forecasting and taking precautionary measures prior to an imminent threat when advance warnings are possible”⁴

In this case we are looking for methods how to assure the best possible preparedness of an organization to any exceptional situation which might arise. By this statement we are making it hard. It could be much simpler – asking about “preparedness for flood”, “preparedness for forest fire”, “preparedness for earthquake” or even “preparedness for massive immigration”. The task targeting to the “universal” or “undifferentiated” preparedness does not lead to perfect plans, procedures, systems etc. but rather to the capabilities of the management team to handle any exception. All the other “partial plans” are just a “must to have” and they are often required by the law, by the company owners or by the common meaning of trustful organization and its reputation. They are also a part of a business continuity plans or risk management, as no big organization can put it behind.

There is another term, which is important to the preparedness: **AWARENESS**.

We may use Cambridge dictionary for the definition: “Knowledge that something exists, or understanding of a situation or subject at the present time based on information or experience”⁵

What is a relation between Preparedness and Awareness?

We have to be aware to be able to get ourselves prepared. It is logically very simple, but it does not necessarily work automatically. It works better in a short term (several days of heavy raining makes us aware of a possibility of floods), but not so easy in a long term (theoretical studies on droughts hardly persuade politics about huge investments, with probably no practical effect in their active life).

How to measure the preparedness? At first there has to be an interest to measure. An interest to discover an answer to the simple question: “How are we doing?”. If we are aware of the fact, that our survival, quality of life, profit, position or salary depends on our ability to handle extraordinary situations, we can ask this question to ourselves, to our hired management or to our elected politicians. To prepare answer to such a question may be very hard. We may hear a simple one – “Yes, we are prepared well!” or on the other hand we may obtain a pile of detailed documentation, describing how to handle almost any critical situation.

The only objective preparedness test is the disaster itself – the aftermath analysis can show the reality without any discussions. But it is not probably the optimal assessment method. There are some other ways how to measure our preparedness, even it is something very intangible and relative.

Preparedness assessment

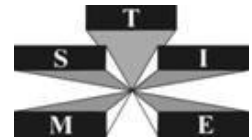
Preparedness assessment is obviously a standard part of risk management. It may differ in procedures if treated on the governmental or region level or in the power distribution company or other organization from critical infrastructure.

There is an ISO⁶ standard for the Business Continuity published, which contains a comprehensive description of all the aspects, requirements and evaluation procedures.

⁴ <https://en.wikipedia.org/wiki/Preparedness>

⁵ <http://dictionary.cambridge.org/dictionary/english/awareness>

⁶ http://www.iso.org/iso/home/store/catalogue_tc/catalogue_detail.htm?csnumber=50038



To assess the preparedness we may use:

- **Documentation assessment**
To formally review all the documents which are required to handle critical situations – crisis plans, continuity plans, notification and warning schemes, resources mapping and availability assurance, legal issues coverage, models, responsibility matrices, communication channels, ...
Those activities can be done internally or with a help of external analytics or companies.
- **Personal assessment**
Investigation of knowledge, skills and abilities of individuals. It reflects a quality of education and training, creativity, proper decisioning and engagement. Usually the people exposed to risk and high responsibility activities are a subject of such a review.
Combination of e-learning/e-assessment tools together with HR managers and psychologists reviews are used to support such assessments.
- **Process audit**
This is a most complex activity which includes aforementioned ones. Mostly used for overall review of all standard processes, together with analysis of the consistency of alternative processes used in case of failure or emergency. The audit can show the compliance to standards, legislation and compliance of the knowledge of personal to the processes description.

Exercising

There is a method “in the middle” between the formal assessment and real impact analysis after disaster. It is **EXERCISING**.

No formal procedure can show as close to potential reality the real capability of the management team to handle exceptional situation as the exercise. For our purposes we may define the scope of exercise as follows:

EXERCISE is a scenario-based review activity which includes all potential actors which may play a role in such a situation. In our concept the exercises is rather a tabletop one, which no necessity to alarm and move rescue forces, build the protection walls or masquerade the death and wounded bodies full of blood. This “real exercise” may be, of course, part of the game, especially for the reason it is good for the PR. Rescue forces themselves obviously know their job perfectly, as they are daily “in fire”.

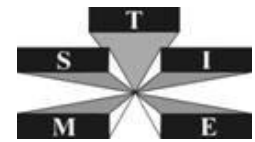
Our Exercise is close to the verbal and communication game, reflecting the current configuration and nature of the team, the current knowledge and capabilities, with no firm structure. It leaves enough space for creativity, improvisation and unexpected events – as it is in the normal life.

The metrics are then similar to the aftermath analysis. It just deals with estimated damages rather than real ones.

3. WHAT WE REALLY NEED TO BE PREPARED?

Based on the above-mentioned facts, we tried to develop an optimal method how to reach the optimal preparedness, especially in an organization, which has some non-negligible importance for the citizens, owners or customers. It may be government, city management, company management or any other important organization, which may be affected by unexpected event.

All the formal assessments or audits are necessary, but there is still a gap between their impact and better possible preparedness level. All the formal checks might be OK, but the real situation will develop differently than expected.



When the disaster strikes,

nobody will start to look for the crisis plan and learn procedures, as the actual situation will obviously differs and there is a time pressure. All the routine jobs are usually fulfilled by routine service people and what remains is to carry out important decisions at the top management level. It requires actual, instant, synthetic and understandable information, qualified council of responsible persons, modelling of the potential situation development and consequences overview on resources and fast feedback on the measures taken. Simply it requires a harmonized and experienced team, which does not to waste time by exploration of impasses.

There is a wonderful way, how to ensure to be prepared, how to build and maintain the preparedness. It is an Exercising.

Compared to other methods, it brings several clear advantages:

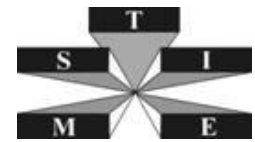
- The assessment is driven by flexible scenario
It allows to adapt the assessment process to real challenges moderated by the actual performing team
- All important “players” are present
and left in a position to really react to the situation in scenario and to the behavior of other team members. It usually confronts the “expected” or “planned” to the real possibilities and resources of actual persons and their respective sub teams.
- The exercise run is fully documented
which allows to record real discussed procedures, which may differ from those “artificially” designed during preparation of crisis manuals
- The experience and knowledge stays in heads of attendees, that means that each participant knows better his counterparts and understand better what he may expect and what is expected from him or her
- The optimal way, how the information basis for decisions is presented during the exercise may be preserved for the future, to recall fast it in the real similar situation
- The scenario may be standardized and disseminated through similar organizations to compare the behavior or to share the know-how.
- The exercise may be repeated regularly, to
 - Improve the performance
 - Maintain the capabilities
 - Introduce new team members and adapt them to the team
 - Adapt to new external conditions (legislation, technology, ...)

4. HOW TO BENEFIT FROM EXERCISING

The exercising based on open scenarios requires a bit of responsible braveness of the stakeholders or managers. It is clear that in contrary to the well planned structured exercises some skeletons of the cupboards are discovered during the game of this kind. But the results are rewarding. They help to banish those skeletons in time of real disaster and save lives, environment and money.

To get out as much as possible from the exercise, it is advisable to **inherit exercising to the standard structure and operation** of the organization. The people are then accustomed to work in the same environment and utilize the tools available more often than in time of crisis.

In a lot of articles about management the *organizational memory* term appears. Most of the times it is described as some documents, processes etc., keeping the knowledge regardless of the people coming and going. It works fine in large organizations with stable processes and in stable times. For the crisis management purposes we see some other definition: The organizational memory consists of all the documented processes together with the people and their knowledge and skills. It may vary in time due to the team members changing and the optimal



method how to keep and possibly improve it is by regular exercising. It simultaneously educates and trains the people and on the other side modifies the stored information to up-to-date content, reflecting the actual composition of the team.

Scenarios may be either focused to some weaknesses discovered by other methods used in Human resources management. For example we may use the psychological profiling of individuals and the team to find potential weaknesses⁷.

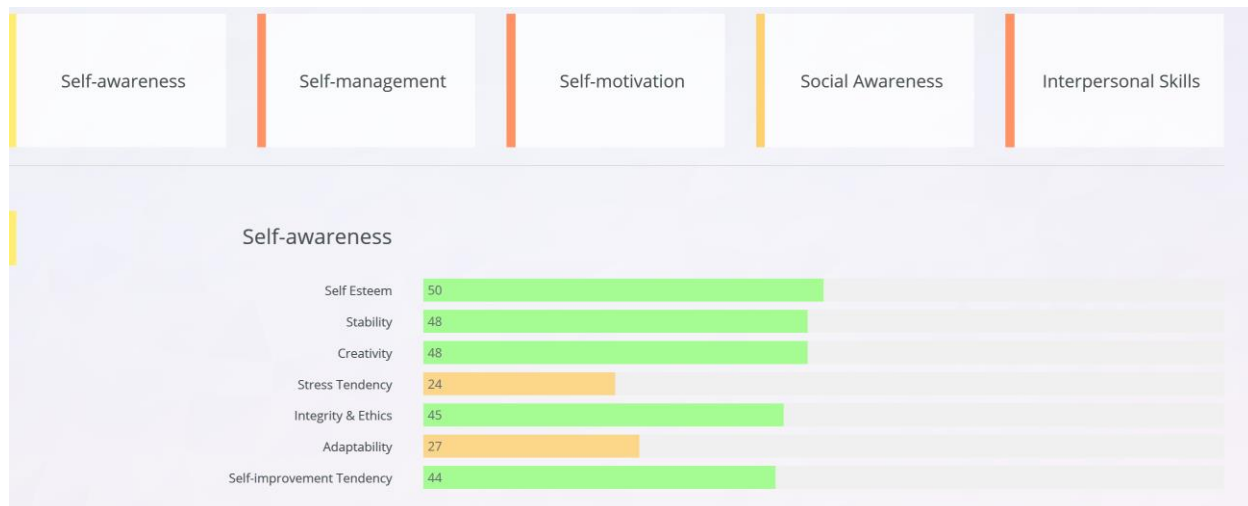


Figure 1 Personal profiling

Based on the results we may tailor specific exercise scenarios and customize them for the particular team. Later we may monitor how the harmony in the team improves the orchestration of the whole organization during the exercises and what influence the exercises have to the team profile and relation of the individual profiles to it.

Scenarios developed and refined during the exercises serve as a good base for support in the real crisis. This is the same with the templates for gathering and visualizing information. By the way – this becomes the real crisis plan, with all actual contacts, resources, warnings and tradeoffs.

Having this done, we may expect much better performance of our organization in hard times.

5. ABOUT TOOLS

To reach high preparedness of our organization to the exceptional situations, besides accepting the exercising as the basic method we may make our work more effective by using some tools. Based on years of experience in the development of software systems in the area of crisis management, we found two basic tools which can help the organizations to design and operate regular exercises and at the same time use them in case of real crisis.

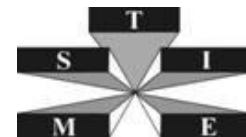
We developed two basic systems – PRACTIS⁸ and SITUNET⁹. They were successfully used for example at the large exercise BLACKOUT PRAGUE 2014¹⁰

⁷ <https://www.balancemanagement.com>

⁸ <http://www.tsoft.cz/en/practis>

⁹ <http://www.tsoft.cz/en/situnet>

¹⁰ Hudecek T, Juranek J, Pejcoch J: Blackout 2014 Exercise - Prague, The Capital of the Czech Republic, TIEMS Conference Proceedings 2014, Niigata, Japan



SITUNET

The key factor enabling the collaboration of the heterogeneous team as a crisis staff is the clear and simple common situation picture. It needs to visualize the information for everybody, from the expert in power distribution through the city mayor to the citizen. It requires substantial integration of current documents and links to the external data sources with a result at dynamic map, capable to visualize the situation in time, both real and simulated.

Information centres

Emergency water supply resources

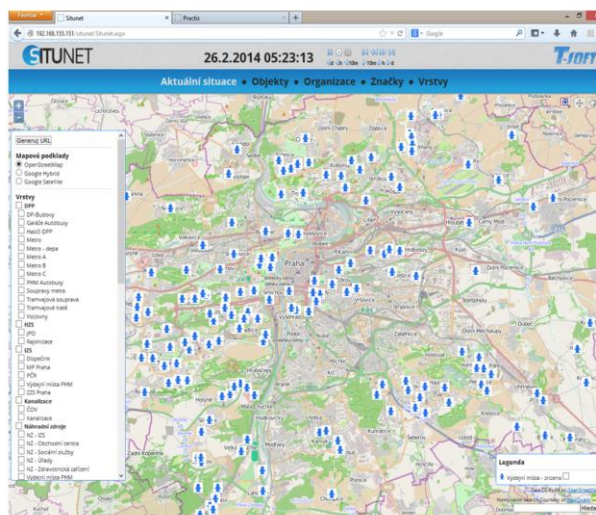
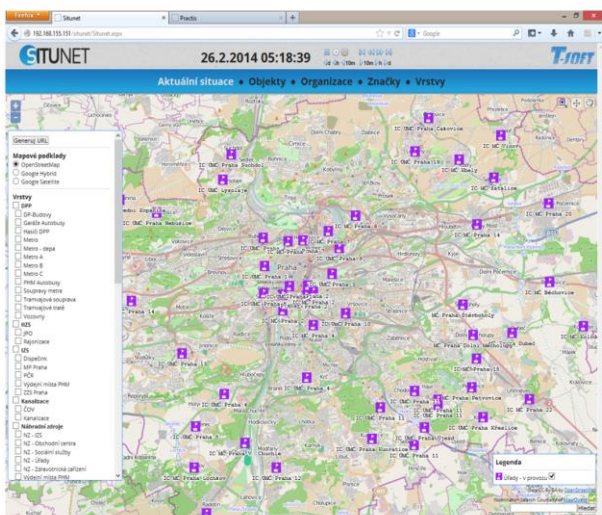


Figure 2 Common situation picture – Prague blackout 2014

PRACTIS

This is a tool for structured design of scenarios which can support the design of them in a linked objects form and then interpret it in the linear timetable form, which allows the execution in the real or simulated time with a possibility to add and modify scenarios on fly and create comprehensive documentation.

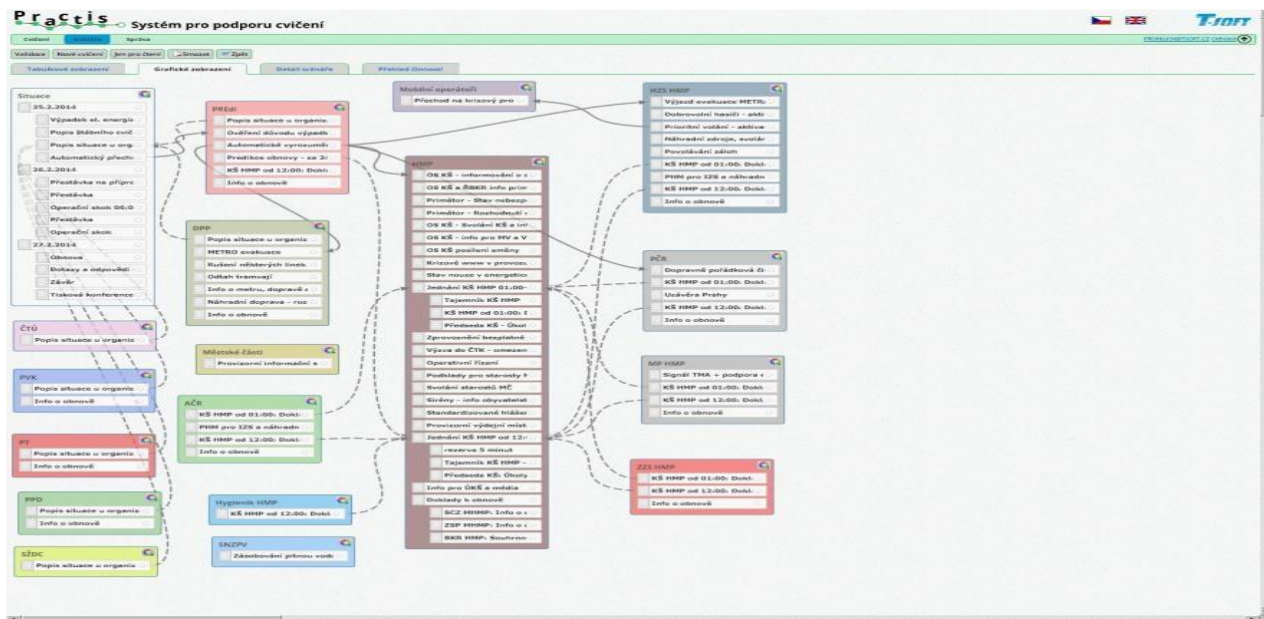
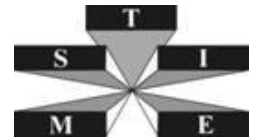


Figure 3 Scenario in Practis – Prague blackout 2014



6. CONCLUSIONS

The answer for the question “What you really need to be prepared?” in the title might be as simple as this: You need a support from all who have the right to decide on the top level, you need enough resources and strong and experienced management team.

What is also necessary is to make stakeholders aware of the potential risks and of the necessary level of ability to handle it effectively and efficiently.

The discussion above shows that the exercising might be the excellent tool how to improve and maintain the preparedness of an organization to exceptional situations. The justification is based on the fact that the formal documentation reviews, people examining and process audits are not capable to reflect fully the special nature of critical situations and their treatment. Due to the complexity and variability of crises, the standard operation procedures and predefined decisioning are not sufficient to cover the wide spectrum of possibilities. There is a big responsibility laying on ad-hoc teams, assembled to resolve the crisis. The formal crisis plans and systems do not help much with ready-made solutions. Ad-hoc teams need quality ad-hoc information and its presentation to provide quality decisions.

The preparedness can be improved and maintained by the periodical exercising – on any level of the team, on any separated segment of the organization. It does not mean that other methods as risk analysis, e-learning, training, resource management do not play in this game – they are for sure necessary part of the preparedness building.

We identified, that the exercising, combined for example with the personal and team profiling and supported by two basic tools – Standard situation picture and Scenario-based practicing is the basic need for any organization, from the state through cities to important companies. The biggest exercise organized and supported by those tools was the Blackout Prague 2014 as was described at TIEMS conference in Niigata, Japan last year. On the other hand – the method and tools are useful to use also at the standard SME company as T-SOFT. For example standard scenario of the fire in the datacenter brought several new views and ideas never discussed before.

The periodical exercising is an optimal tool to build preparedness to the potential crises of any kind.

After all – the exercising might be an interesting game, if taken seriously. It's like with children - they learn best by playing.