9. Seminar
Project management

Tasks for the 9th seminar – Develop partial parts: **3. Description of the project product** (final project output), and **4. Main risks of the project** - according to the template of the seminar work

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3. Description of the project product (final project output)

3.1. Project product name: (this is, for example, the final product, service, innovation, etc.)

3.2. The purpose of this project product - the purpose that the project product as a whole is to achieve and who will use it.

3.3. Composition - a list of the main products or groups of products to be delivered by the project (e.g. for a car - tires, equipment, model line, etc.)

3.4. Derivation - are there starting materials from which this product is derived? E.g. there are products that will be modified by the project, etc.

3.5. Customer expectations for quality - a description of the expected quality of the project product from the user's point of view, including determination of the standard (specific characteristics of product quality, meeting e.g. testing, functionality, time of use, etc.)

3.6. Acceptance criteria - a prioritized list of measurable criteria to be met in order for the final product of the project to be accepted / accepted.

3.7. Quality tolerances - any tolerances that can be applied to the acceptance criteria

3.8. Responsibility for acceptance - who is responsible for acceptance

TIPS:

• *Use creative techniques (e.g. brainwriting, mind map) - what the final product of the project will look like and its composition. There can be a photo of a model, drawing, prototype, etc. The goal is to visualize the project product (product, new service, innovation, etc.). In practice, for example, a physical prototype is made using 3D printing, use your available resources to visualize the project product.*

• *If it is an innovation, show the final state of the project product (e.g. innovated product-packaging, functional use, design).*

• *If it is a service (give a description of this service, what it will bring to the user, a description of the process of providing the service, follow-up services, etc.).*

• *If the product of the project is a process, provide a flowchart of the process (its individual steps, connections, input and output factors, etc.).*

4. Main risks of the project

4.1. Risk analysis - RIPRAN method

TIPS for additional study:

Basic principles of the RIPRAN method

The RIPRAN method (see below) is based on the principle of risk engineering, that for risk analysis it is necessary to first determine the following four and prepare their relevant list:

Threat - Scenario - Probability - Loss

Because the number of random events can never be precisely determined, the list cannot be complete. The incompleteness of the list is also caused by knowledge or ignorance of project team members. Therefore, we are talking about a representative list, ie a list that presents all the significant risks that we were able to identify and that we take as a basis for a specific risk analysis.

Let us briefly state the meaning of these terms as understood by the RIPRAN method:

Threat - Danger that is threatening and that is the cause of the harmful consequences and difficulties in the project. (E.g. strong storm, insufficient loan, icing, currency devaluation, strike, dismissal of the project manager, bad subcontracting for the project, ...)

Scenario - The event that we anticipate in the project as a result of the threat. (For example, we will not get a loan - we will not have financial coverage for the project, Franta will fall ill - we will lose the only employee who can do it for our project ...)

Probability - Probability of scenario realization expressed in the interval <0.1>

The probability is related to the duration of the project - resp. to the so-called reference period, when we feel threatened. Note that this is the probability that a scenario with a certain probability is assigned to the threat with a certain probability. It is usually assumed that both phenomena are independent of each other. If the probability of a storm is 0.03 and the probability that when a storm arrives and a construction crane overturns is 0.7, then the resulting probability that we will consider in the relevant case is 0.7 x 0.03 = 0.021

1) E.g. for a strong wind of 11 degrees Beaufort scale in our latitude and d. is probability over one year 0.01, but for 100 years it is 0.63.

2) E.g. laying of cables should take place from March 1 to March 25, then we are interested in the probability of ground frosts in this time period.

Loss - Loss for the project, caused by the implementation of the scenario. We usually express it in monetary units (but we can also say otherwise, the size of the time delay, the loss of workers' lives, etc.). We can add a risk value to each n-tuple.

Risk value = probability x loss

RIPRAN method

The RIPRAN method (RIsk PRoject ANalysis) is a simple empirical method for project risk analysis, especially for medium-sized corporate projects. It is consistently based on the procedural concept of risk analysis. Understands risk analysis as a process (process inputs-process outputs-activities transforming inputs into an output with a specific goal). The method accepts the quality philosophy (TQM) and therefore includes activities that ensure the quality of the risk analysis process as required by ISO 10 006. The method is designed to respect the principles for Risk Project Management described in the IPMA materials.

It focuses on the elaboration of a project risk analysis, which must be performed before the actual implementation. This does not mean that we should not work with threats at other stages. On the contrary, in each phase of the project life cycle, we must perform activities that, on the one hand, gather data for a separate project risk analysis for the project implementation phase, and which evaluate the potential risks of failure of the phase we perform. We will then use the recorded risks for the overall analysis of project risks.

The whole process of risk analysis according to this method consists of **four basic steps:**

1. Identification of project hazards
2. Quantification of project risks
3. Response to project risks
4. Overall project risk assessment.

Example of a filled table

Number of risk	Threat	Scenario	Note	Probability	Impact on the project	The value of risk	Proposal for action	Expected costs Deadline for implementation of measures Personal responsibility (risk owner)	New value of reduced risk
1.	Occurrence of the influenza epidemic in the spring period March-April.	Almost 30% of employees become ill.	We assume the weather as forecast in the previous year.	50 %	Failure of work capacity and delay of the contract by 3 months - penalty EUR 600 000.	300 000 EUR	Flu vaccination	EUR 100 vaccine Vaccination in January Agreed with the company doctor - agreed by the employees at workshops	Exceptional diseases will be compensated for overtime - zero risk
2.	……	……	……	…..	…..	….			
3.									
4.									

Example of Risk Register

Risk Register

Project name: Common project risks

ID	Date raised	Risk description	Likelihood of the risk occuring	Impact if the risk occurs	Severity *Rating based on impact & likelihood.*	Owner *Person who will manage the risk.*	Mitigating action *Actions to mitigate the risk e.g. reduce the likelihood.*
1	[enter date]	Project purpose and need is not well-defined.	Medium	High	High	Project Sponsor	Complete a business case if not already provided and ensure purpose is well defined on Project Charter and PID.
2	[enter date]	Project design and deliverable definition is incomplete.	Low	High	High	Project Sponsor	Define the scope in detail via design workshops with input from subject matter experts.
3	[enter date]	Project schedule is not clearly defined or understood	Low	Medium	Medium	Project Manager	Hold scheduling workshops with the project team so they understand the plan and likelihood fo missed tasks is reduced.

Example of Risk Matrix

		Probability			
		1 = high (80% ≤ x ≤ 100%)	2 = medium high (60% ≤ x < 80%)	3 = medium low (30% ≤ x < 60%)	4 = low (0% < x < 30%)
Impact	A=high (Rating 100)	(Exposure – Very High) (Score 100)	(Exposure – Very High) (Score 80)	(Exposure – High) (Score 60)	(Exposure – Moderate) (Score 30)
	B=medium (Rating 50)	(Exposure – High) (Score 50)	(Exposure – Moderate) (Score 40)	(Exposure – Moderate) (Score 30)	(Exposure – Low) (Score 15)
	C=low (Rating 10)	(Exposure – Low) (Score 10)	(Exposure – Low) (Score 8)	(Exposure – Low) (Score 6)	(Exposure – Low) (Score 3)

Risk Management Matrix Showing Probability and Impact and High Low Risk

Risk Management Matrix		Impact				
		Neglibile	Marginal	Moderate	Critical	Catastrophic
Probability	Almost Certain	Low Risk	Moderate Risk	High Risk	Extreme Risk	Extreme Risk
	Likely	Minimum Risk	Low Risk	Moderate Risk	High Risk	Extreme Risk
	Possible	Minimum Risk	Low Risk	Moderate Risk	High Risk	High Risk
	Unlikely	Minimum Risk	Low Risk	Low Risk	Moderate Risk	High Risk
	Rare	Minimum Risk	Minimum Risk	Low Risk	Moderate Risk	High Risk

Likelyhood	Consequences				
	Insignificant Risk is easily mitigated by normal day to day process	**Minor** Delays up to 10% of Schedule Additional cost up to 10% of Budget	**Moderate** Delays up to 30% of Schedule Additional cost up to 30% of Budget	**Major** Delay up to 50%of Schedule Additional cost up to 50% of Budget	**Catastrophic** Project abandoned
Certain >90% chance	High	High	Extreme	Extreme	Extreme
Likely 50%-90% chance	Moderate	High	High	Extreme	Extreme
Moderate 10%-50% chance	Low	Moderate	High	Extreme	Extreme
Unlikely 3%-10% chance	Low	Low	Moderate	High	Extreme
Rare <3% chance	Low	Low	Moderate	High	High