Tasks for the 7-8th seminar – Develop partial parts (2.6 – Project Costs) of your project according to the template of the seminar work

This task is divided into two seminars, because creating a project budget requires quality preparation.

2.6. Project costs - overview of project costs (start-up costs, operation, reserves, changes and risks)

2.6.1. Project budget - suitable tabular form, e.g. according to individual stages of the project or according to direct / indirect costs, etc.

2.6.2. Tolerance budget (reserves)

2.6.3. Change budget (for possible changes during project management)

2.6.4. Risk budget

Project budgeting overview

1. **Cost planning and project budgeting**

Cost planning and project budgeting is part of the planning phase and builds on project scheduling and resource planning. The project budget consists of a **cost side** and a rev**enue side**; it can be defined as the total amount of funds allocated to a project, usually divided into **expenditure categories** and phased over time. Part of budget planning is therefore cost planning as well as revenue planning (or other sources of cost coverage).

For profitable projects, revenues exceed costs, **for non-profit projects**, both parties should be at least the same. The budget is a key part of the project plan, interested by all stakeholders - from project owners who are interested in what costs will be incurred and how much the project will earn, through team coordinators who want to know how much money they have available for their activities, to an individual employee for whom the amount of his salary is important in the budget.

When compiling a budget, we can **start with cost planning**, so we compile a cost budget and then look for sources of coverage.

Project costs

As part of cost planning, we therefore appreciate the time spent on the project and the use of **human, material or financial resources**. The output of cost planning is the **project cost budget.** Costs can be broken down from different perspectives. To compile a budget plan, it is appropriate to first determine the direct costs (**Direct Costs),** which are directly related to the implementation of the project. Examples of direct costs are shown in tab. 1.

Tab. 1: Direct costs

Type of direct cost	Example
personnel costs for project staff	• wages, public health insurance and social security contributions, pension contributions
material costs	• sand, cement, papers, toners
purchase of services	• rental of training facilities, translations and interpreting
travel project staff	• fares, meals, air tickets, accommodation
acquisition, rental of tangible assets	• computers, cars, cranes, furniture
acquisition, rental of intangible assets	• purchase of licenses, software, patents
subcontracting costs	• construction of a storage hall by a construction company

Indirect Costs are those that **cannot be clearly assigned to a specific project**; these are the common costs of the whole organization. The organization's management determines how much of the organization's total indirect costs will be allocated to individual projects. Examples of indirect costs are shown in tab. 2.

Tab 2: Indirect costs

Type of indirect cost	Example
indirect personnel costs	• part of the personnel costs of the organization's management
operation of buildings	• part of the cost of heating, energy consumption, cleaning, repairs of buildings used by the organization
costs for the organization's support departments	• part of the costs of marketing, accounting organization
taxes and fees	• part of the taxes and fees paid by the organization

2. Cost determination methods

In practice, we may encounter many approaches and methods of cost valuation, from more or less "expert" estimates to complex mathematical procedures. The choice of method always depends on the type of project, its scope and degree of complexity.

The main input for determining the costs of the project is a **list of activities and an estimate of their duration, prepared during time planning**. We know the total duration of the activity from the overview of activities, we must specify it in more detail when planning costs.

E.g. we count 30 hours in the time planning for dredging the foundations for the house. When creating a budget, we must divide this time into individual components. We will have to estimate:

• *number of hours of excavator work,*

• *number of hours of dredger's work,*

• *mileage of the car transporting the soil,*

• *number of working hours of a truck driver,*

• number of working hours of auxiliary workers.

The quality of the cost estimate depends on both the quality of the time estimate and the quality of the unit cost estimate. We get the cost of dredging the foundations for the house by multiplying the number of hours the excavator works by the cost per hour of work. The cost per hour of excavator work may include a proportion of the rent or depreciation, part of the cost of repairs, fuel, etc. When determining the budget of project costs, we can use the processed cost calculations of the organization, which express the cost per unit of output (e.g. for an hour of excavator work, for an hour of teaching a lecturer).

Analogous estimation

When estimating costs, **historical information of the organization is widely used**, e.g. final budgets of previous projects that have implemented a similar type of costs, public or commercial databases on prices, e.g. publicly accessible databases of average wages of individual professions or price lists of construction works. When estimating the costs that will be realized by purchasing from an external entity (e.g. the services of a project auditor), it is appropriate to carry out a price survey when sending the cost budget by sending a preliminary request to three potential suppliers.

This process (also called "top-down estimation") is based on information about past activities, considers the actual costs of previous projects and applies them to the current project. In doing so, it considers the scope and size of the current project and other variables. This approach is not very time consuming, but is less accurate.

Expert estimates

In projects, we often encounter expert estimates, where the project manager or team members use costs and knowledge of the issue to estimate costs. This option is most often used in cases where it is too time consuming or expensive to determine prices from verifiable sources.

Parametric modeling

Parametric modelling uses a mathematical model based on known parameters, which may vary depending on the type of work performed. The parameter can be, for example, the cost per cubic meter, the cost per hour of work of the excavator, etc. There are two types of parametric estimation:

- Regression analysis. It represents a statistical approach to estimating future values, which is based on past values.
- Learning curve. It is based on the simple assumption that, with repeated work, workers learn to work faster and with less error rate, thus reducing the cost of producing another unit. This estimate is parametric because it is based on repetitive activities carried out in the project over and over again. Unit costs decrease as the workforce experience increases, as it reduces the time required to complete the activity.

Bottom-up estimation

This process starts with zero total costs and **adds the cost for each item in the hierarchical structure of work (WBS).** The result is the sum of costs for the entire project. By calculating the cost of each individual WBS item (which we should have cost-calculated), we create a very accurate cost estimate. The bottom-up method is very time consuming, so it is also more expensive, but by using it we reduce the risk of incorrect estimation of costs. A side effect is also high-quality input information for deciding whether it is more advantageous for us to provide some outputs internally or externally.

3. **Reserves (tolerances)**

It is necessary to reflect the risks of the project in the cost budget and create reserves in the project to **cover increased or unexpected expenses**. The **amount of the reserve can be set as a percentage of the total expenditure of the project** (usually units of percent) or reserves can be set only for some budget items. Typical examples may be provisions for:

- exchange rate losses - for projects that use buying or selling in a foreign currency, it is necessary to consider a reserve that will cover the exchange rate change.
- unexpected costs, e.g. during the reconstruction of older houses, it is only possible in the implementation phase to discover problems that will require additional staff, equipment, etc.
- specified tolerances (range, range, scrap, longer implementation time = extra work, additional costs, etc.)

4. **Change budget**

During project management, a number of changes arise, the project is alive and the longer the implementation time, the more changes come and needs to be addressed (change budget - these are funds for the Change Commission (according to Prince2), which approves the allocation of funds for the changes. the budget serves as a kind of "future" reserve.

5. **Risk budget**

According to the **established risk analysis**, where the main threats and possible measures for the occurrence of the given threat are identified - they must be in this budget. There are

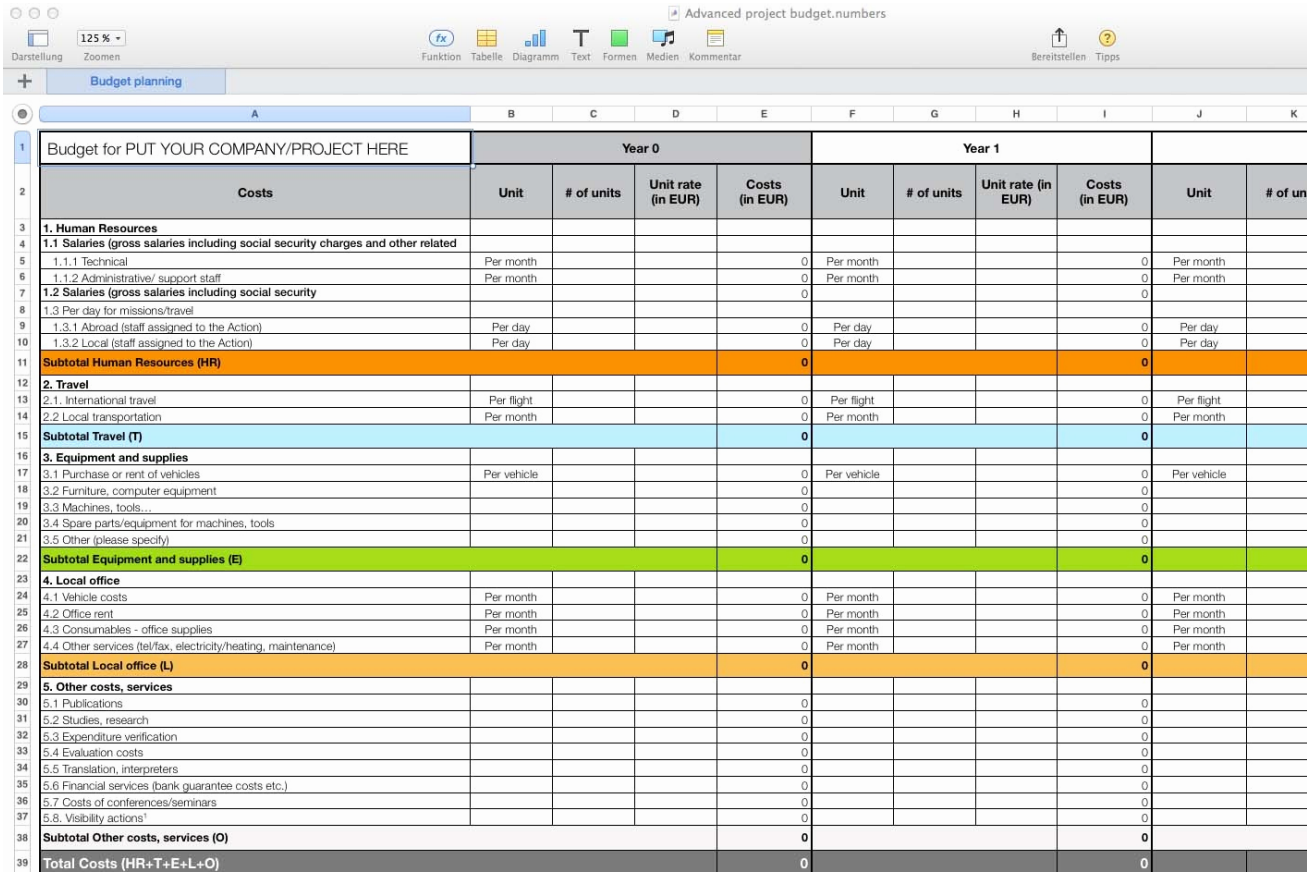
also specific measures (their cost) in case of risk elimination when it occurs. In summary, this budget includes items for reducing the probability of the threat (e.g. vaccination in case of illness) and also items for eliminating the risk (the risk occurs, but we have insurance, co-payment, etc.). We use risk analysis (RIPRAN), where these data are presented.

Examples of Project budget (Costs):

PROJECT BUDGET TABLE						
Category*/Budget Item	**Cost Calculation**	**Total**	**USFWS**	**"Applicant"**	**"Partner X"**	**"Partner Y"**
Personnel						
Salary & fringe benefits for project leader	$62,500 annual salary x 25% time for 1 year	**$ 15,625.00**		$ 15,625.00		
Salary for field supervisor	200 hours @ $20/hour	**$ 4,000.00**	$ 4,000.00			
Stipend for field biologist	100% time for 1 year	**$ 13,000.00**	$ 3,000.00		$ 5,000.00	$ 5,000.00
Travel						
Round trip airfare from point A to point B for project leader		**$ 2,500.00**	$ 2,500.00			
Vehicle rental- Suzuki 4x4	3 months @ $1,000/month	**$ 3,000.00**			$ 3,000.00	
Mileage (covers gas and vehicle maintenance) to field site for field supervisor	12 trips x 483km/trip x 30.14¢/km	**$ 1,747.00**	$ 1,747.00			
Mileage (covers gas and vehicle maintenance) for fence monitoring and repair.	Four 50km trips/week for 12 weeks. 48 trips x 50km/trip x 30.14¢/km	**$ 723.00**	$ 723.00			
Lodging and meals						
Field rate per diem (lodging and meals) for project leader	12 trips x 10 days/trip x $23/day	**$ 2,760.00**		$ 2,760.00		
Research permit, research station & lab analysis fees						
Office of the President Research Permit		**$ 500.00**	$ 500.00			
Immigration re-entry permit		**$ 10.00**	$ 10.00			
Research station fees	90 days at $23/day	**$ 2,070.00**	$ 2,070.00			
Lab analysis	20 samples @ $250 each	**$ 5,000.00**	$ 5,000.00			
Supplies						
4 GPS satellite transmitters	$4,200 each	**$ 12,600.00**				$ 12,600.00
GPS transmitter time for 1 year		**$ 3,000.00**	$ 3,000.00			
Satellite phone time for 1 year	$100/month	**$ 1,200.00**	$ 1,200.00			
Replacement battery for electric fences	$95/each	**$ 95.00**	$ 95.00			
Sweep nets, insect sampling supplies		**$ 300.00**	$ 300.00			
Notebooks, meter tape, printing & photocopying		**$ 250.00**	$ 250.00			
Subtotals		$ 68,380.00	$ 24,395.00	$ 18,385.00	$ 8,000.00	$ 17,600.00
Indirect costs (10%)		$ 4,999.50	$ 2,439.50		$ 800.00	$ 1,760.00
Grand Totals		$ 73,379.50	$ 26,834.50	$ 18,385.00	$ 8,800.00	$ 19,360.00

* Sample project categories include: Personnel, Fringe Benefits, Travel, Equipment, Supplies, Contractual, Construction, among others.

Project Budget Template										
Summary Cost of the Project		**Amount (in $)**			**Details of the Project**					
Total budgeted Cost during the		-			Name of the Company					-
Total Actual Cost during the period		-			Project Name or ID					-
Total Variance during the period		-			Project Lead					-
					Start Date					-
S.No.	**Particulars**	**Material**		**Labor**		**Fixed Cost**	**Miscellaneous Cost**	**Budgeted Amount (in $)**	**Actual Amount (in $)**	**Variance (in $)**
		Units	**Cost per Unit**	**Hours**	**Cost per Hour**					
	Task 1									
1	Subtask 1	-	-	-	-	-	-	-	-	-
2	Subtask 2	-	-	-	-	-	-	-	-	-
3	Subtask 3	-	-	-	-	-	-	-	-	-
4	Subtask 4	-	-	-	-	-	-	-	-	-
5	Subtask 5	-	-	-	-	-	-	-	-	-
(A)	**Total Task 1**					-	-	-	-	-
	Task 2									
1	Subtask 1	-	-	-	-	-	-	-	-	-
2	Subtask 2	-	-	-	-	-	-	-	-	-
3	Subtask 3	-	-	-	-	-	-	-	-	-
(B)	**Total Task 2**					-	-	-	-	-
	Task 3									
1	Subtask 1	-	-	-	-	-	-	-	-	-
2	Subtask 2	-	-	-	-	-	-	-	-	-
3	Subtask 3	-	-	-	-	-	-	-	-	-
4	Subtask 4	-	-	-	-	-	-	-	-	-
(C)	**Total Task 3**					-	-	-	-	-
(D)	**Total Of Project (A + B + C)**					-	-	-	-	-



Budget for PUT YOUR COMPANY/PROJECT HERE	Year 0				Year 1					
Costs	**Unit**	**# of units**	**Unit rate (in EUR)**	**Costs (in EUR)**	**Unit**	**# of units**	**Unit rate (in EUR)**	**Costs (in EUR)**	**Unit**	**# of un**
1. Human Resources										
1.1 Salaries (gross salaries including social security charges and other related										
1.1.1 Technical	Per month			0	Per month			0	Per month	
1.1.2 Administrative/ support staff	Per month			0	Per month			0	Per month	
1.2 Salaries (gross salaries including social security				0				0		
1.3 Per day for missions/travel										
1.3.1 Abroad (staff assigned to the Action)	Per day			0	Per day			0	Per day	
1.3.2 Local (staff assigned to the Action)	Per day			0	Per day			0	Per day	
Subtotal Human Resources (HR)				**0**				**0**		
2. Travel										
2.1. International travel	Per flight			0	Per flight			0	Per flight	
2.2 Local transportation	Per month			0	Per month			0	Per month	
Subtotal Travel (T)				**0**				**0**		
3. Equipment and supplies										
3.1 Purchase or rent of vehicles	Per vehicle			0	Per vehicle			0	Per vehicle	
3.2 Furniture, computer equipment				0				0		
3.3 Machines, tools…				0				0		
3.4 Spare parts/equipment for machines, tools				0				0		
3.5 Other (please specify)				0				0		
Subtotal Equipment and supplies (E)				**0**				**0**		
4. Local office										
4.1 Vehicle costs	Per month			0	Per month			0	Per month	
4.2 Office rent	Per month			0	Per month			0	Per month	
4.3 Consumables - office supplies	Per month			0	Per month			0	Per month	
4.4 Other services (tel/fax, electricity/heating, maintenance)	Per month			0	Per month			0	Per month	
Subtotal Local office (L)				**0**				**0**		
5. Other costs, services										
5.1 Publications				0				0		
5.2 Studies, research				0				0		
5.3 Expenditure verification				0				0		
5.4 Evaluation costs				0				0		
5.5 Translation, interpreters				0				0		
5.6 Financial services (bank guarantee costs etc.)				0				0		
5.7 Costs of conferences/seminars				0				0		
5.8. Visibility actions[1]				0				0		
Subtotal Other costs, services (O)				**0**				**0**		
Total Costs (HR+T+E+L+O)				**0**				**0**		

Example – Other Costs/Services in the budget planning

5. Other costs, services[8]								
5.1 Publications[9]				€ 0.00				€ 0.00
5.1.1 Design of environmental info signs	per design	1.00	€ 1,500.00	€ 1,500.00				
5.1.2 production and installation of environmetal info signs	per sign	6.00	€ 150.00	€ 900.00				
5.1.3 production and installation of trail markers	per marker	30.00	€ 150.00	€ 4,500.00				
5.1.4 Design and printing of the Guideline for cave guides	Per guideline	100	€ 5.00	€ 500.00	Per guideline	100	€ 5.00	€ 500.00
5.1.5 Printing guideline for sea kayak guides	Per guideline	500	€ 2.00	€ 1,000.00	Per guideline	500	€ 2.00	€ 1,000.00
5.2 Studies, research[9]				€ 0.00				€ 0.00
5.3 Auditing costs	per audit	2.00	€ 2,000.00	€ 4,000.00				€ 0.00
5.4 Evaluation costs	per evaluation	2.00	€ 2,000.00	€ 4,000.00				€ 0.00
5.5 Translation, interpreters	Per project	1	€ 3,000.00	€ 3,000.00	Per project	1	€ 3,000.00	€ 3,000.00
5.5.1 translation of text for environmental info signs	per translation	1.00	€ 2,100.00	€ 2,100.00				
5.6 Financial services (bank guarantee costs etc.)				€ 0.00				€ 0.00
5.7 Costs of conferences/seminars[9]				€ 0.00				€ 0.00
5.7.1 Guide trainings				€ 0.00				
5.7.1.1 Hiking Guide Training	per training	1	€ 9,500.00	€ 9,500.00				
5.7.1.2 Bike Guide Training	per training	1	€ 9,500.00	€ 9,500.00				
5.7.1.3 Sea Kayak Guide Training	per training	1	€ 9,500.00	€ 9,500.00				
5.7.2 Refreshment for meetings - 6 events with 16 people per event	Per person	96	€ 5.00	480				
5.7.3 Premises for joint meetings	Per meeting	6	€ 170.00	1020	Per meeting	4	€ 170.00	€ 680.00
5.8. Visibility actions				€ 0.00				€ 0.00
5.8.1 Design and printing broshures promoting nature based activities	per item	25000	€ 0.07	€ 1,750.00				
5.8.2 Design and printing tourism maps based on GIS	per item	8000	€ 0.45	€ 3,600.00				
5.8.3 Educational info signs	per piece	2	€ 400.00	€ 800.00				
5.8.4 Press conferences CRO	per confernece	3.00	€ 450.00	€ 1,350.00	per confernece	2.00	€ 450.00	€ 900.00
5.8.5 Press conferences for the media MNE	per conference	3	€ 430.00	€ 1,290.00	per conference	2	€ 430.00	€ 860.00
5.9 External consultants								€ 0.00
5.9.1 Tourism Consultant	Per day	20	€ 200.00	€ 4,000.00	Per day	20	€ 200.00	€ 4,000.00
5.9.2 IT Consultant	Per day	30	€ 150.00	€ 4,500.00	Per day	30	€ 150.00	€ 4,500.00
Subtotal Other costs, services				**€ 72,290.00**				**€ 18,940.00**