

# PROJECT CHARTER

REVISION: 04/06/2023  
 DATE: 04/06/2023

<b>PROJECT NAME</b>	Drug Supplier Selection in regional public hospital
<b>CUSTOMER</b>	Padang hospital
<b>PROJECT SPONSOR:</b>	Financial department of hospital
<b>PROJECT MANAGER</b>	Naghmeh Hajipour

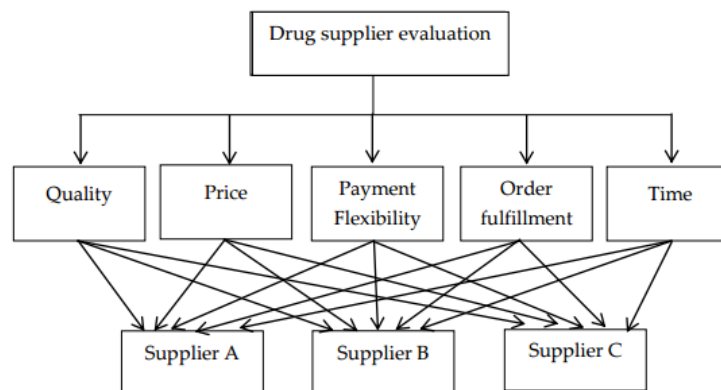
PROJECT DESCRIPTION
<p>One of the activities of managing a business is managing the supply chain. Supply Chain Management is a process of planning, implementing and controlling operations of the supply chain that aims to meet customer needs as efficiently as possible. There are several activities related to the continuity of the supply chain, one of which is supplier selection. This study aims to prioritize the main criteria in the selection of suppliers for Padang's hospital and to find out which supplier is the best.</p> <p>The method used is the Analytical Hierarchy Process (AHP). AHP method is used to determine weighting, where the steps in the AHP method begin with the compilation of hierarchies and this hierarchy is structured to explain the problem in a structured and easily understood manner Which leads to the selection of the best supplier by considering all the criteria.</p> <p>In the other part of managing a business, time, cost and risk management is crucial. By using the management techniques and tools we have to monitor all activities so as not to deviate from the goal.</p>

PROJECT GOALS
<p>The goal of the project is optimization. By using the AHP method that provides a formal decision analysis that allows ranking suppliers based on quantitative analysis. This case illustrates the value of AHP in solving multi-criteria decision problems in group decision-making settings. The purpose of showing the usefulness of AHP in group decision-making for selecting the best supplier and monitoring analyzing the progress of the project by using analysis tools such as: Gant, Probability Calculation and EVA Analysis</p>

STAKEHOLDERS	
INTERNAL:	EXTERNAL:
Shareholders Hospital management Financials team Procurement and purchasing team	Suppliers Government Regulatory Agencies

Selection of suppliers is an activity, if it is done correctly, higher quality, longer lasting relationships can be achieved. In evaluating and selecting suppliers effectively and efficiently, the company will involve many things for decisions to be taken, first identify the need for supplier selection after identifying the required resources, then determine the source strategy power, identification of potential supply sources, limiting suppliers within the scope of selection, then determining supplier evaluation and selection methods and the last supplier selection and achieving agreement. In selecting suppliers there are also criteria that must be taken into consideration by companies in choosing their suppliers. Some of the criteria that many consider the company in selecting suppliers such as quality, price, material, shipping, etc. usually all hospitals have a very wide range of consumable products and choosing the right supplier is very important. In this study we consider 5 criteria of 3 suppliers:

1. Quality, which is the suitability of the quality of goods sent with specifications agreed upon by buyers and sellers.
2. Prices, namely the price of goods offered by suppliers to those who want to buy
3. Payment flexibility, namely the ability of suppliers to respond to changes in demand, can meet changes in demand is an important factor in the selection of suppliers. In this case the buyer or consumer is given time in payment.
4. Order fulfillment, which is how much the supplier's ability to fulfill orders from consumers.
5. Time, namely the time in ordering products, where consumers want a short time in ordering products.



The data processing stage consists of processing using the analytical hierarchy process (AHP) method. The first thing to do in determining the priority criteria is comparing in the form of pairs of all criteria that transformed into a pairwise comparison matrix.

Criteria	Quality	Price	Payment Flexibility	Order fulfillment	Time
Quality	1.00	3.00	5.00	3.00	5.00
Price	0.33	1.00	1.00	1.00	1.00
Payment Flexibility	0.20	1.00	1.00	1.00	1.00
Order fulfillment	0.33	1.00	1.00	1.00	1.00
Time	0.20	1.00	1.00	1.00	1.00

The consistency of the matrix was calculated using excel file. Based on the calculations, the Consistency Ratio was equal to 0.0263,  $2.6\% < 10\%$ , and so we can conclude that our matrix is consistent. The final step involved determining the alternative priority rates by multiplying the normalized evaluation matrix with the criteria weights for each Product. This led to supplier B being rated highly with a score of 0.3345, making it

the top choice for team.

alternative suppliers	criteria					Weight	
	Quality	Price	Payment Flexibility	Order fulfillment	Time		
supplier A	4.25	5.00	4.00	4.25	3.00	0.49	
supplier B	4.27	5.00	4.50	5.00	3.00	0.13	0.321756031
supplier C	4.25	5.00	4.25	4.00	4.00	0.12	0.334587827
						0.13	0.333656142
						0.12	

PROJECT CONSTRAINTS	
SCOPE:	
<b>WHAT IS INCLUDED:</b> Leaders in this field must communicate with vendors and distributors to ensure that their company can receive and ship their products <ul style="list-style-type: none"> <li>• order processing</li> <li>• inventory control</li> <li>• transportation</li> <li>• warehousing</li> <li>• materials handling</li> <li>• packaging</li> </ul> all integrated throughout a network of facilities. The goal is to support procurement, manufacturing, and customer service operational requirements.	<b>WHAT IS EXCLUDED:</b> <ul style="list-style-type: none"> <li>• large deviations from normal patterns produce delayed responses</li> <li>• shortages</li> <li>• sanctions</li> <li>• shifts in demand</li> <li>• labor shortages</li> <li>• structural factors</li> <li>• geopolitical factors</li> </ul> And any features that are not part of the agreed-upon scope should be clearly identified as out of scope.
TIME:	
<b>CONTRACTUAL TIMING BASELINE AND MILESTONES:</b> <b>Timing Baseline:</b> <ul style="list-style-type: none"> <li>• Project start date: Month 1</li> <li>• Project end date: Month 12</li> <li>• Collecting data, Analysing, Comparing: Month 1 to 4</li> <li>• Select potential suppliers: month 4</li> <li>• Monitoring and Controlling the process and Supplier performance: Until the end</li> </ul>	<b>OTHER MILESTONES:</b>
COST:	
<b>AS-SOLD BUDGET:</b> Total sold budget: 295,000 Euro	<b>MANAGEMENT RESERVE:</b> Contingency cost: 31,983 Euro

## ASSUMPTIONS

- No public holidays in weekdays

- Having all the certificates, documents and standards
- The selection of the right suppliers can help meeting all demands
- The project will comply with all relevant laws, regulations, and standards.
- The project team will have support from the stakeholders.
- The project has a defined timeline with clear start and end dates.

## PROJECT RISKS

- Delay to response: It's directly related to financial loss in terms of time.
- Financial risks: An unexpected or unfavorable change in exchange rates all the way to a supplier's bankruptcy.
- Scope of schedule risk: Largely a result of poor project definition, these are primary risks that threaten the timeline, but they can also have cost implications. It can happen by natural disaster such as hurricanes, fire, or flood, ...
- Legal risks: Legal and contractual risks are often related to different interpretations of contractual obligations.
- Environmental risk: Environmental risk includes the organization's negative impact on water, air, and soil ...
- Sociopolitical risk: Geopolitical risk- sanctions
- Project organization risk: These are generally a result of not having the right people or equipment in the right place at the right time.
- Human behavior risk: human behavior are complex and unpredictable. Sometimes the project or activity may be put in danger due to an illness or injury or due to the departure of key personnel. Sometimes, it may be the result of poor judgment or bad decisions.

## COMPLETION CRITERIA

1. Quality, which is the suitability of the quality of goods sent with specifications agreed upon by buyers and sellers.
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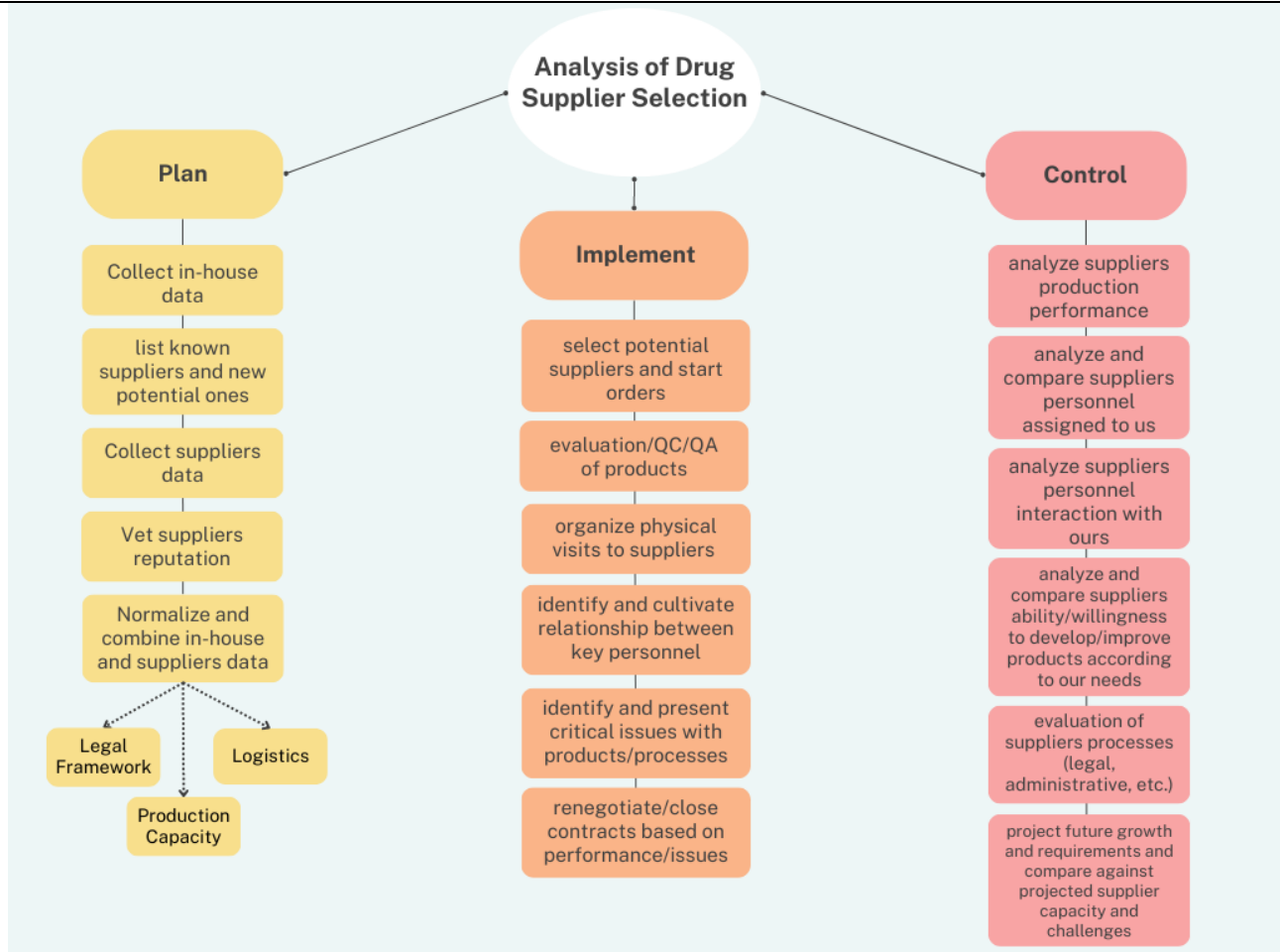
## WBS:

The Work Break Down Structure (WBS) is a technique in PM, means dividing the project into smaller and more manageable components to organize the various elements. In this case we have three main parts to categorize.

**Planning:** Collecting data about our needs and suppliers capabilities, providing all documents we need and estimating time, cost and possible risks, Analyzing and comparing all alternatives. examining of all aspects of the project before starting

**Implementing:** Supplier selection, contract conclusion and ordering

**Controlling operations:** Evaluation of suppliers processes, means analyze suppliers ability/willingness to develop/improve products according to our needs



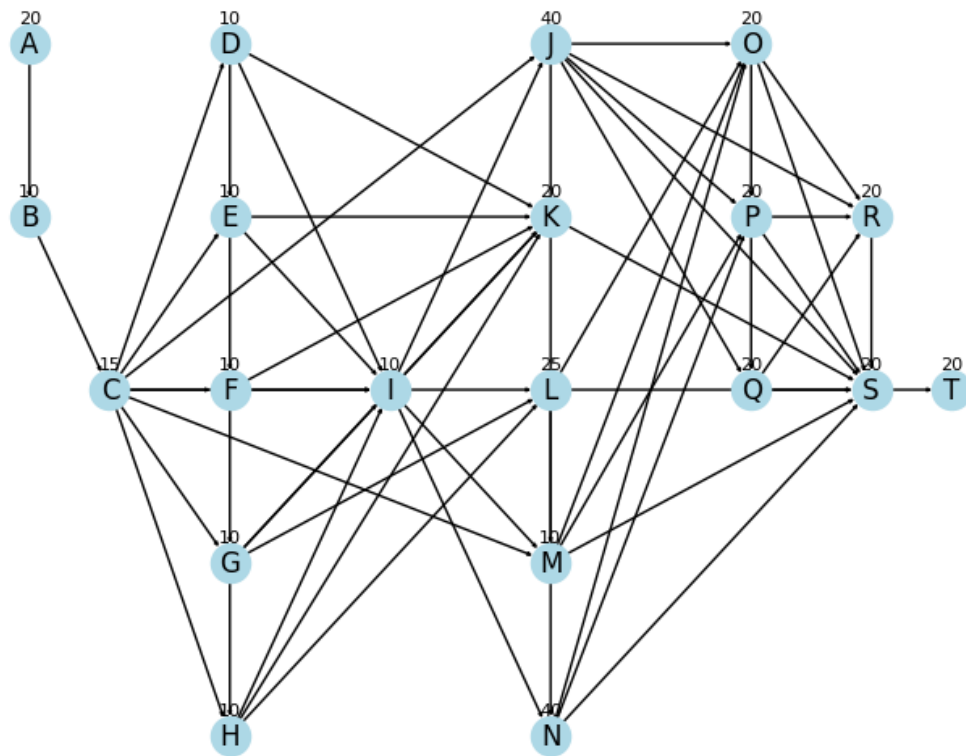
### Gantt:

A Gantt chart is a project management tool that illustrates work completed over a period of time in relation to the time planned for the work.

[illegible]

### Project Review Evaluation and Technique (PERT):

PERT chart is a tool used to schedule, organize, and map out tasks within a project. PERT stands for program evaluation and review technique. It provides a visual representation of a project's timeline and breaks down individual tasks.



## Probability to complete the Project 2 weeks before the deadline:

The Optimistic Duration ( $D_O$ ), Most Likely Duration ( $D_M$ ), and Pessimistic Duration ( $D_P$ ) can be used to determine the Variance and Expected Duration through the following formulas.

$$T_E = \frac{D_O + 4D_{ML} + D_P}{6} \quad \sigma = \frac{D_O - D_P}{6} \quad Z = \frac{\text{Dead Line} - \text{Expected Deadline}}{\text{Standard Deviation } \sigma}$$

Sum of Variance	==	224
Standard deviation	==	14.95363204
Sum of Expected Durations	==	338
Checking Project Time (2 weeks before the date)	==	14
Z-Score	==	-0.936227397

According to the Z-core table, 0.1762 means : Probability of 17.62% that the project will not be complete in deadline

## EVA:

Earned value analysis is a project management technique for evaluating how a project performs against its budget and schedule. It helps derive an estimate of the resources needed to complete the project.

There are all elements that we need:

BCWS= PV: Planned value, Budgeted cost of workscheduling

ACWP= AC: Actual costs, Actual cost of work performed

BCWP= EV: Earned Value , Budgeted cost of work performed

CV = Cost Variance (EV-AC)

SV = Schedule Variance (EV-PV)

CPI = Cost Performance Index (EV/AC)

SPI = Schedule Performance Index (EV/PV)

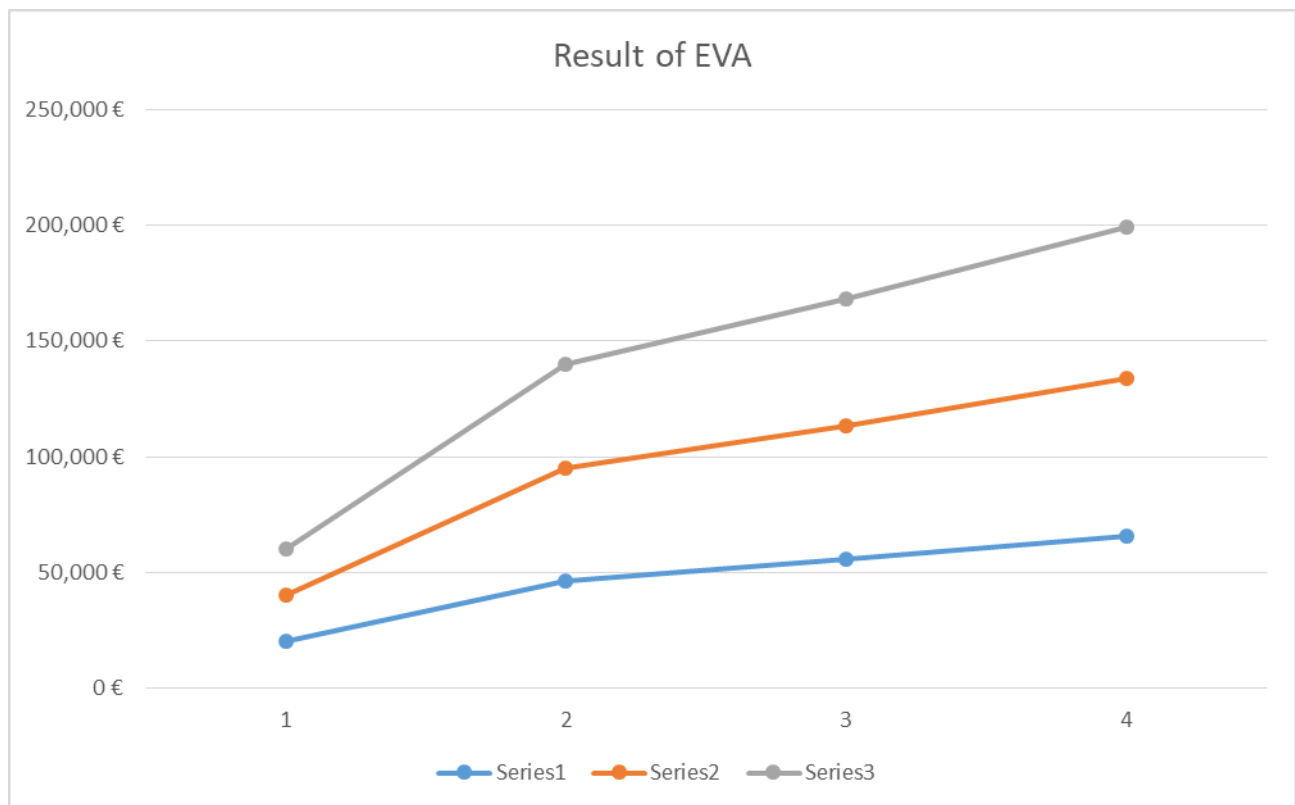
EAC = Estimated at Conclusion  $(AC + ((BAC - EV) / (CPI / SPI)))$

Make the assumptions that:

- For WP1 BCWP=ACWP=BCWS
- For WP2 BCWP is 5% less than BCWS and ACWP is 10% more than BCWS
- For WP3 BCWP is 5% more than BCWS and ACWP is 10% less than BCWS
- For WP4 BCWP is 2% less than BCWS and ACWP is 4% more than BCWS

Activities	PV = BCWS	AC = ACWP	EV = BCWP	CPI=EV / AC	CV = EV - AC	SPI= EV/PV	SV = EV - PV	EAC
WP1	20,000 €	20,000 €	20,000 €	1.00	0 €	1.00	0 €	
WP2	26,250 €	28,875 €	25,000 €	0.87	-3,875 €	0.95	-1,250 €	
WP3	9,500 €	8,550 €	10,000 €	1.17	1,450 €	1.05	500 €	
WP4	10,200 €	10,608 €	10,000 €	0.94	-608 €	0.98	-200 €	
	65,950 €	68,033 €	65,000 €	0.96	-3,033 €	0.99	-950 €	307,446 €

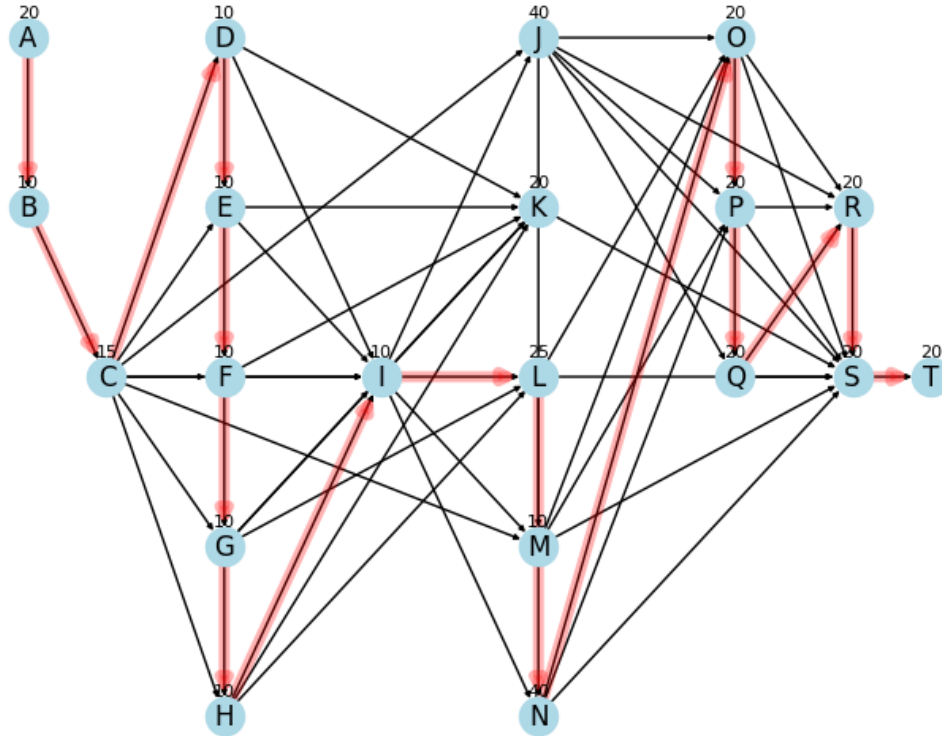
In WP2 a negative CV and a CPI less than 1 indicate that the project is overbudget. A negative SV value and an SPI less than 1 indicate that the project is behind scheduling.





## The critical path method (CPM):

The critical path method (CPM) is a technique where you identify tasks that are necessary for project completion and determine scheduling flexibilities. A critical path in project management is the longest sequence of activities that must be finished on time in order for the entire project to be complete.



The current critical path is: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'L', 'N', 'O', 'P', 'Q', 'R', 'S', 'T']

### SIGNATURES:

PROJECT SPONSOR: Padang hospital

PROJECT MANAGER: Naghmeh Hajipour