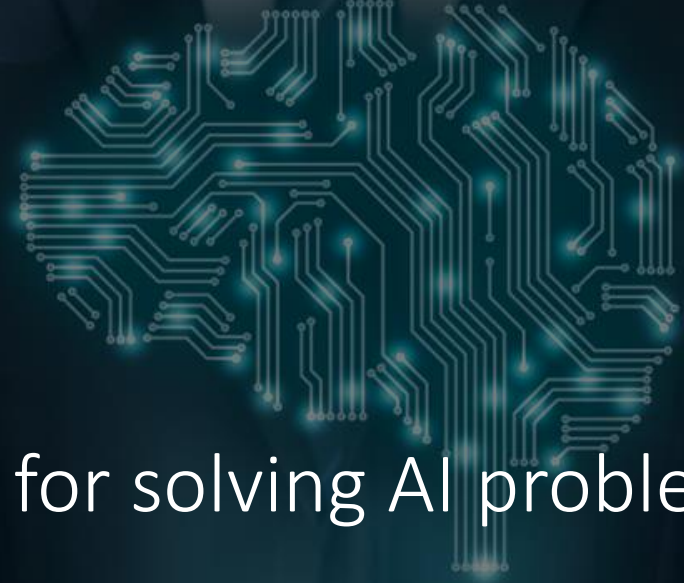


AI Theories

Lesson 1: Critical thinking in AI

Topic 2 : Application of critical thinking for solving AI problems



1st Step: Identify the Problem-Solution-Target

Client is having Challenges in his Business

What do you do? How can you help him?

Identify Root Cause → Find Solutions → Set Target

Step 1: Critical thinking: Understand client's business from client

Step 2: Analytical thinking:

- Figure out critical issues related to that business i.e. fishbone by asking why..why
- Perform literature survey to answer why
- Assort or the critical issues and knowledge from Business SME or client

Step 3: Wrap up thinking or analysis process

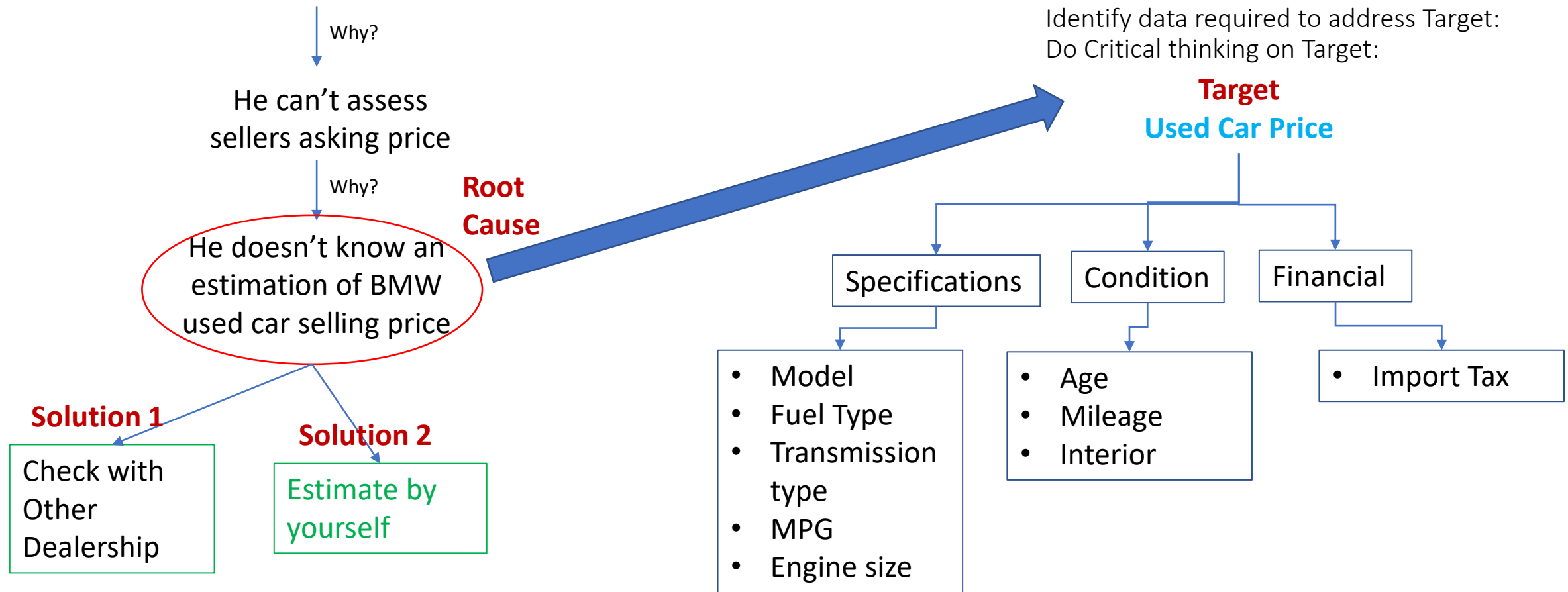
- Assort or the critical issues and knowledge from Business SME or client
- Identify the root cause that is actionable
- Find solution (action) alternatives to solve the root cause
- Select Solutions that addresses root cause

Step 4: Identify Target

- Your root cause or solution leads to select your target to analyze
- For target to analyze do critical thinking and analytical thinking again
- Seek data based on critical issues identified related to Target
- Find what decision client can or cannot to make

Lets talk about a simple problem

Your friend is thinking about buying an old BMW car, but he is worried that he wont be able to buy a good car within reasonable price



1st Step: Identify Problem

Understand your problem and identify the variable as target that is most relevant to your problem, that leads to an action or decision

Target

X1	X2	X3	X4	X5	X6	X7	X8
5 Series	11200	Automatic	67068	Diesel	125	57.6	2
5 Series	16000	Automatic	62794	Diesel	160	51.4	3
1 Series	12750	Automatic	26676	Diesel	145	72.4	1.5
5 Series	14900	Automatic	35309	Diesel	125	60.1	2
5 Series	16000	Automatic	38538	Diesel	125	60.1	2
2 Series	16250	Manual	10401	Petrol	145	52.3	1.5
4 Series	14250	Manual	42668	Diesel	30	62.8	2

Feature/Variable

X1	X2	X3	X5	X6	X7	X8
5 Series	11200	Automatic	Diesel	125	57.6	2
5 Series	16000	Automatic	Diesel	160	51.4	3
1 Series	12750	Automatic	Diesel	145	72.4	1.5
5 Series	14900	Automatic	Diesel	125	60.1	2
5 Series	16000	Automatic	Diesel	125	60.1	2
2 Series	16250	Manual	Petrol	145	52.3	1.5
4 Series	14250	Manual	Diesel	30	62.8	2

Target

X4
67068
62794
26676
35309
38538
10401
42668

Target

model	price	transmission	mileage	fuelType	tax	mpg	engineSize
5 Series	11200	Automatic	67068	Diesel	125	57.6	2
5 Series	16000	Automatic	62794	Diesel	160	51.4	3
1 Series	12750	Automatic	26676	Diesel	145	72.4	1.5
5 Series	14900	Automatic	35309	Diesel	125	60.1	2
5 Series	16000	Automatic	38538	Diesel	125	60.1	2
2 Series	16250	Manual	10401	Petrol	145	52.3	1.5
4 Series	14250	Manual	42668	Diesel	30	62.8	2

Feature/Variable

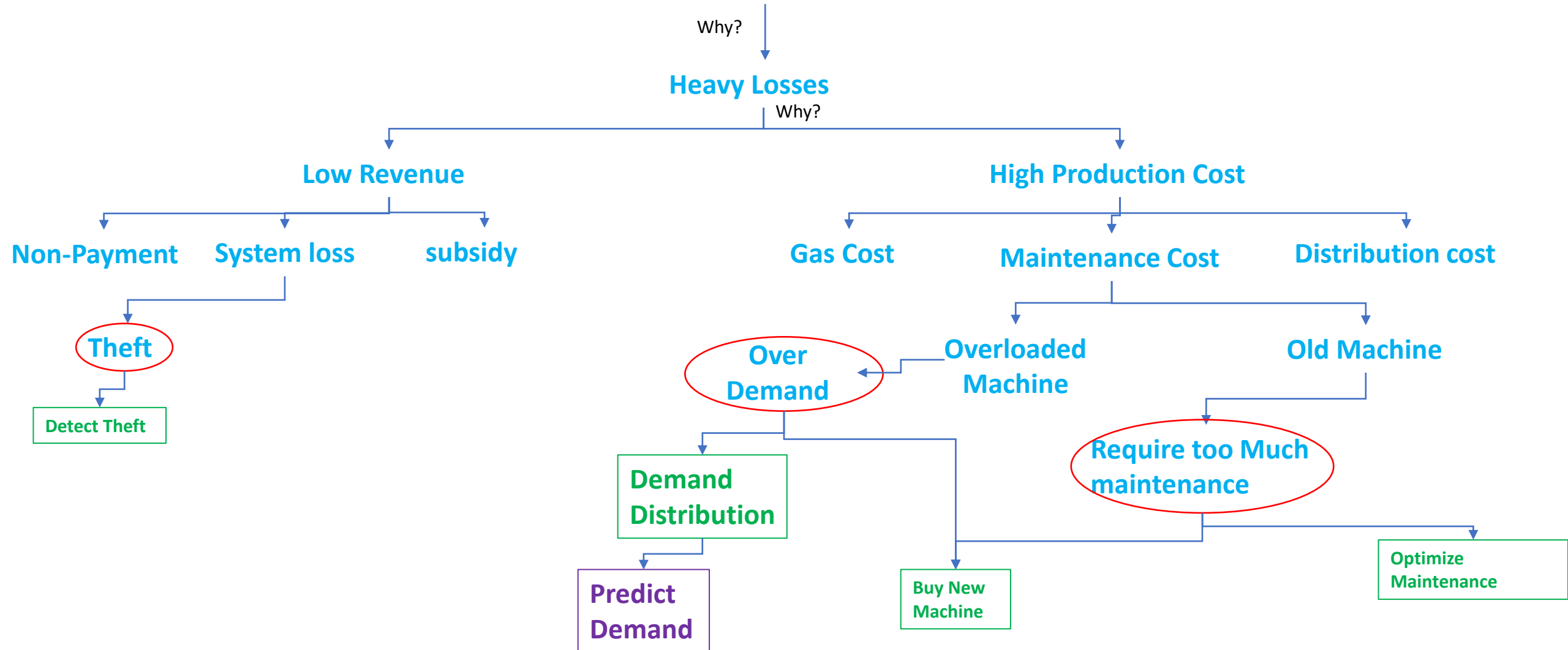
model	transmission	mileage	fuelType	tax	mpg	engineSize
5 Series	Automatic	67068	Diesel	125	57.6	2
5 Series	Automatic	62794	Diesel	160	51.4	3
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Target

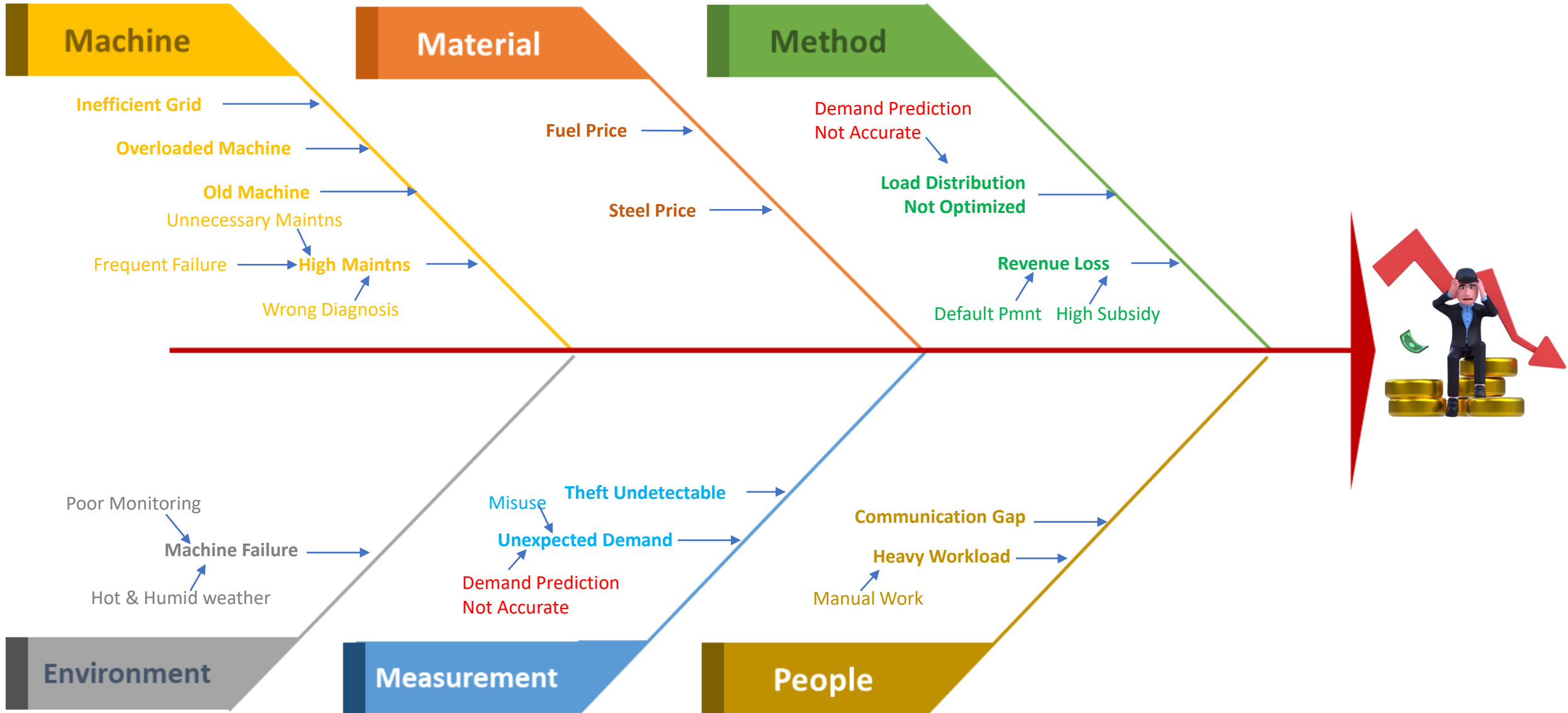
price
11200
16000
12750
14900
16000
16250
14250

Complex Challenge: Losses of Electricity Dept

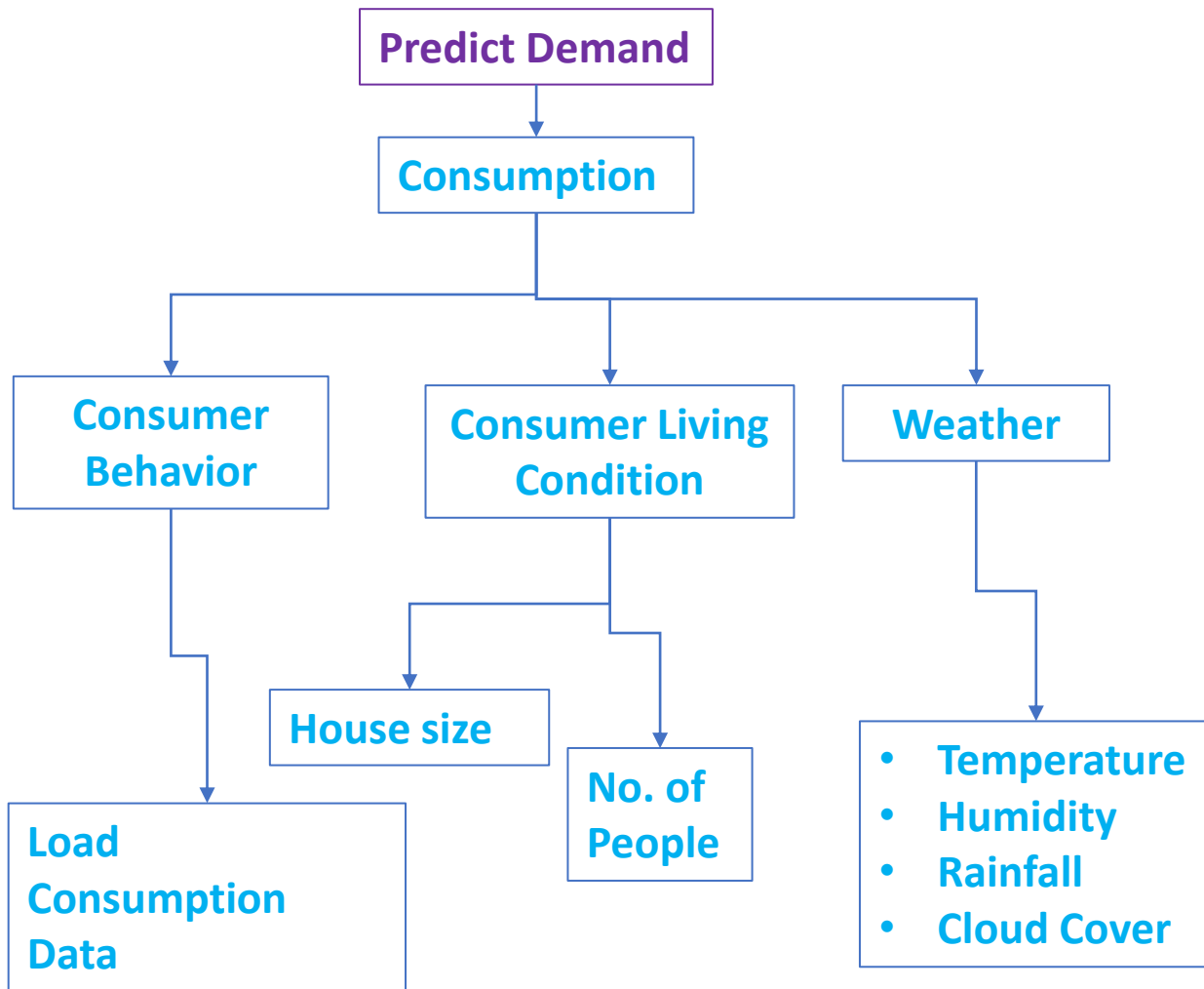
Department of Electricity is taking a heat from upper management and public being profitless!



Losses of Electricity Dept: Fishbone way



Identify data required to address Target: Do Critical thinking on Target:



Consumer Behavior

Living Condition

Weather

Customer no	Date	Weather Station	Avg. Temp (C)	Humidity (%)	Rainfall (mm)	House Size(sqft)	Load (kWhR)
123456	1/1/2022	Dhaka	30	0.2	0	1200	42.30
123456	1/2/2022	Dhaka	27	0.4	0	1200	43.47
123456	1/3/2022	Dhaka	34	0.4	0	1200	54.74
123456	1/4/2022	Dhaka	35	0.8	5	1200	70.35
123456	1/5/2022	Dhaka	31	0.6	4	1200	56.11
123456	1/6/2022	Dhaka	30	0.7	0	1200	57.30
123456	1/7/2022	Dhaka	33	0.5	0	1200	56.43

Variable/Feature

Target

Customer Daily Consumption data

