



Tom Mac Consultation

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Introducing the Case

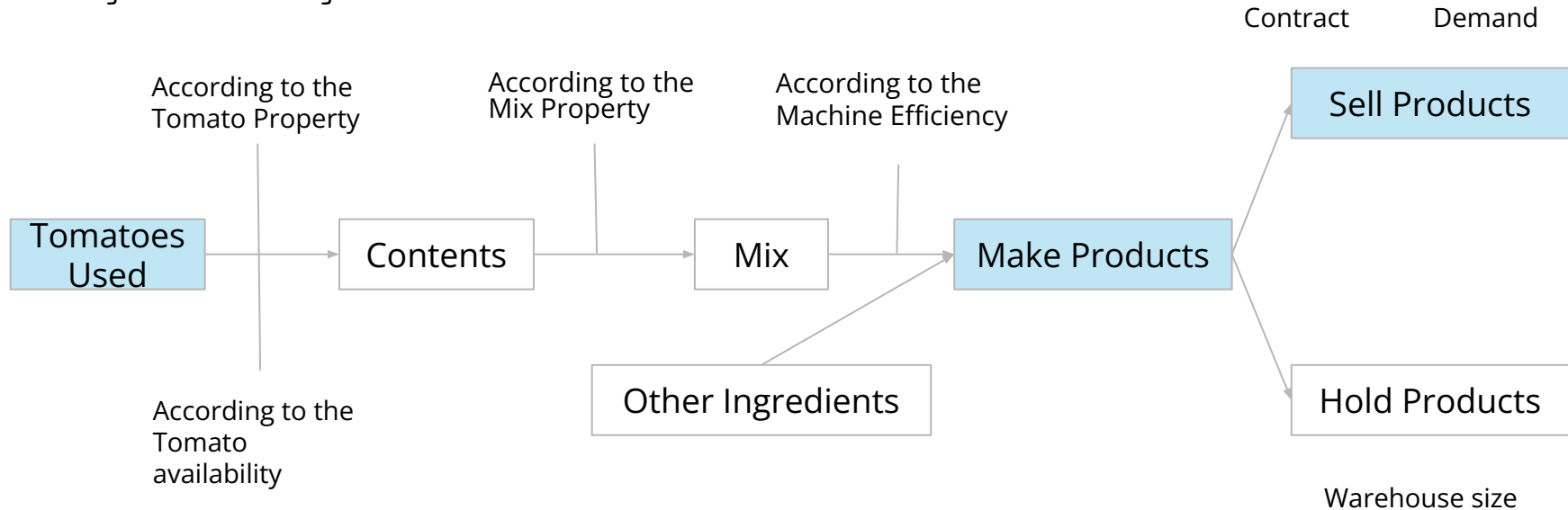
We are here to maximize your profit and keep costs at a minimum.

Using our expertise in linear programming and optimization, we have generated results to meet this goal as TomMac stands now and under potential changes to the business.

How might we organise ingredient purchase, manufacturing and inventory in order to make important strategic decisions for TomMac?

Decision Process for the Base case

Meeting contractual obligations



Base Case Results

LPMS consulting

Total Profit: £24,300

Net Profit: £23,400

Total Cost: £112,200

Total Income: £136,500

Kg of Products Made per Quarter

Type of Product Made	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Juice	923.3	2000	2000	1924.93
Sauce	2000	3000	4410.3	589.7
Paste	825.76	3589.7	7000	1359.96
Canned	5000	5000	5000	5000

Kg of Products Sold per Quarter

Type of Product Sold	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Juice	1848.23	2000	2000	1000
Sauce	2000	3000	3000	2000
Paste	3275.42	3500	3500	2500
Canned	5000	5000	5000	5000

Kg of Tomatoes Purchased per Quarter

Type of Tomato	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Beef	1500	2643.64	4207.81	1500
Plum	4162.88	5544.85	8403.90	4429.98
Moneymaker	4000	9000	13000	4000
Total Cost	£8712.88	£9967.58	£9785.07	£8979.98

New Scenario Investigated

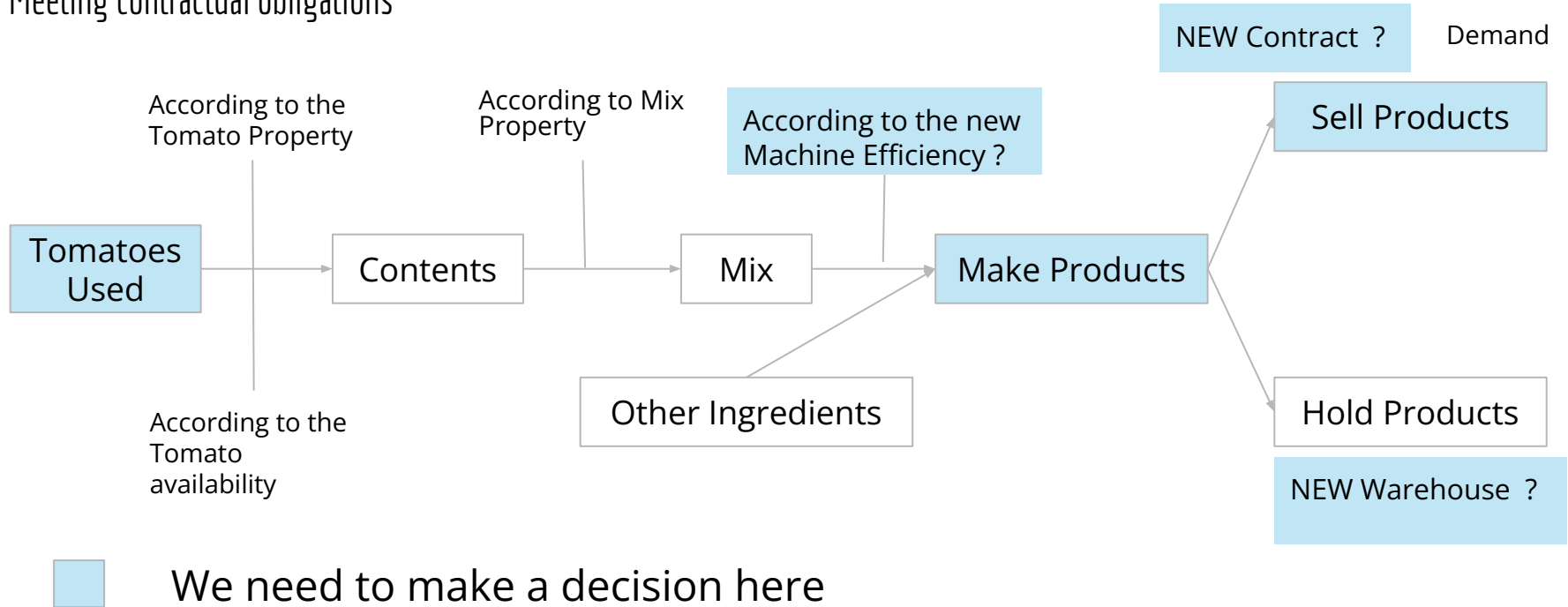
- ☐ Increase in all product prices by 10%.
- ☐ Increase in demand for each product by 10%.
- ☐ Production cost increases by 5%.

Decisions to Consider

- ☐ Should we rent a new warehouse increasing capacity by 5000Kg at a cost of £3,000 per year ?
- ☐ Should we sign the new contract?
- ☐ Should we upgrade our machinery to increase production capacity for all products by 20%

Decision Process for new Scenario

Meeting contractual obligations



Conclusion on Stage 2

- ❑ We do rent a new warehouse.
- ❑ We should sign the new Contract
- ❑ We shouldn't upgrade our machinery to increase production capacity

Stage 2 Results

LPMS consulting

Total Profit: £39,600

Net Profit: £35,000

Total Cost: £178,700

Total Income: £138,100

Kg of Tomatoes Purchased per Quarter

Type of Tomato	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Beef	1500	4000	6000	1500
Plum	5000	10000	12187.35	5000
Moneymaker	4000	9000	13000	4000
Total Cost	£9550	£13900	£12393.67	£9550

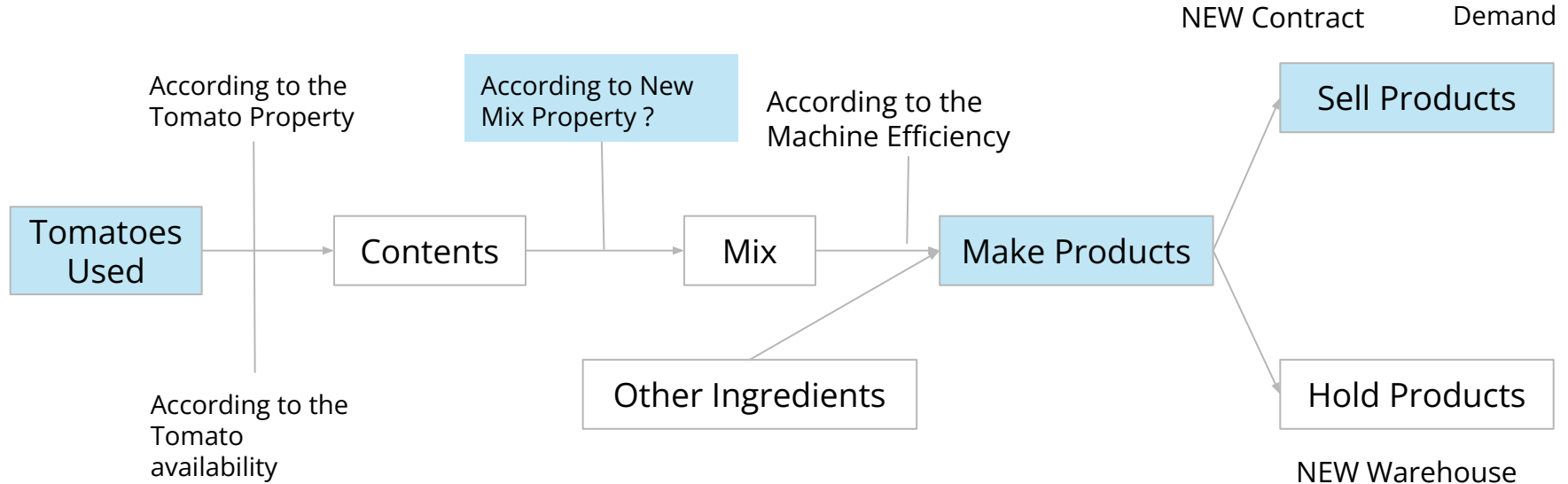
Kg of Products Made per Quarter

Type of Product Made	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Juice	730.46	1793.18	1532.61	2343.75
Sauce	2271.51	3000	6728.49	0
Paste	500.78	5478.18	7000	1468.75
Canned	6332.82	7200	8315.25	5687.5

Kg of Products Sold per Quarter

Type of Product Sold	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Juice	1600	1600	1600	1600
Sauce	3000	3000	3000	3000
Paste	3500	3500	3947.71	3500
Canned	6332.82	7200	7200	6802.75

Decision Process for new Scenario



We need to make a decision here

Reduced Mixes + Costs

Should we change mix properties given the three decisions previously made:

- ☐ We do rent a new warehouse.
- ☐ We should sign the new contract.
- ☐ We should not upgrade our machinery to increase production capacity.

The answer is yes!

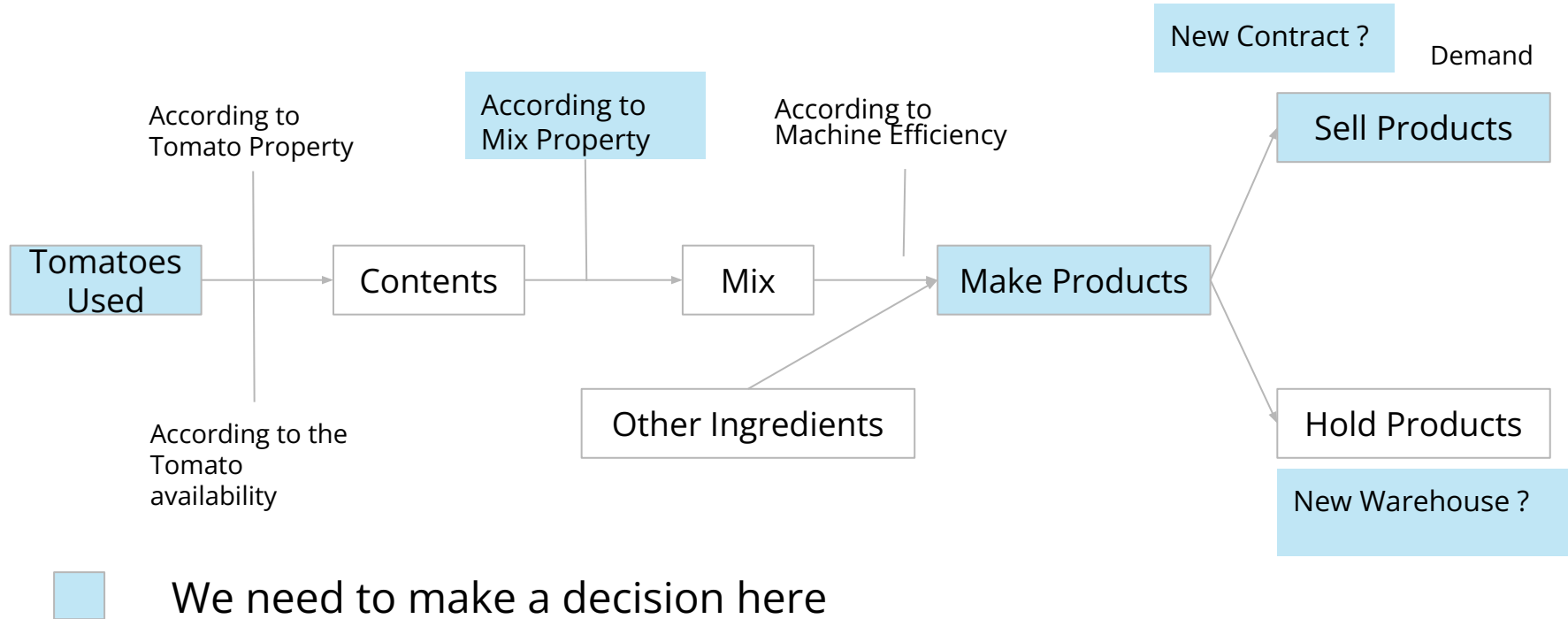
Total Profit: £39713

Type of Products	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Juice	0.6:0.4	0.62:0.38	0.59:0.41	0.62:0.38
Sauce	0.64:0.36	0.64:0.36	0.64:0.36	0.64:0.36
Paste	0.64:0.36	0.63:0.37	0.65:0.35	0.65:0.35
Canned	0.67:0.33	0.68:0.32	0.65:0.35	0.66:0.34

Suggestions

- ❑ Change the mix properties of products by changing the recipe, i.e. adding more other ingredients, such as water.
- ❑ Buy more Moneymaker Tomatoes from a foreign market
 - ❑ For an extra 1kg of Moneymaker Tomatoes, we can get extra £0.99 pounds total profit
- ❑ Consider wholesale of excess tomatoes bought in bulk

Decision Process for Further Suggestions



Reduced Mixes + Costs

Type of Products	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Juice	0.62:0.38	0.59:0.41	0.62:0.38	0.62:0.38
Sauce	0.64:0.36	0.64:0.36	0.64:0.36	0.64:0.36
Paste	0.65:0.35	0.65:0.35	0.65:0.35	0.63:0.37
Canned	0.66:0.34	0.67:0.33	0.65:0.35	0.66:0.34

- ☐ We do rent a new warehouse.
- ☐ We should sign the new contract
- ☐ We should upgrade our machinery to increase production capacity

Total Profit: £40,275

Additional Fair Prices

Increase in Profit for 1kg Increase in Availability

Variety	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Beef	1.41	0.96	1.23	1.41
Plum	0.36	0.41	None	0.36
Moneymaker	0.99	0.8	0.7	0.99

Increase in Profit for 1kg Increase in Demand

Product	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Juice	None	0.57	0.72	None
Sauce	None	0.50	0.68	None
Paste	None	0.86	0.86	None
Canned	0.28	0.62	0.81	0.27