

“Trick or Treat Sweets II” Case study

1 **June 30th of 2012, a wonderful day.**

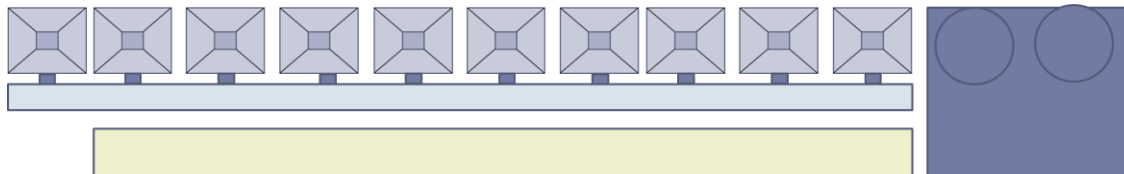
2 The Mercanona supermarket chain has just closed a business deal with your company. Your
3 company will supply them with bags of sweets for Halloween.

4 The contract states an approximate price of 3 euros per bag. Each bag should weigh 750 grams
5 and must contain approximately 10 different types of sweets relatively equally balanced in
6 quantity.

7 You have already selected the sweet manufacturers that will supply you with the sweets.

8 The product for sale should be automatically filled. You have contacted suppliers of equipment
9 which fills and/or weighs this kind of product. The detailed design of the production system to
10 install is still a concern. Basically, a system with 10 industrial hoppers, a washing machine and a
11 filling system is required. The final mixture to place in each bag will be obtained with a 12-head
12 multihead weigher. According to the supplier catalogue, the system has a maximum capacity of
13 25 bags per minute.

14 The hoppers will feed the washing machine and the mixer. Each hopper (inverted pyramid-
15 shaped frustums) are square shaped (1.5x1.5 metres) and 1.2 metres high. The whole system
16 will occupy 18x4 m².
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20 The prognostic of Mercanona is to sell around 500 bags per supermarket during each of the 8
21 working days before Halloween. In total, the expected volume is around 500,000 bags. The bags
22 will have to be sent to the supermarkets via the 5 Mercanona distribution centres in Spain.
23 The product will appear in the supermarkets on October, 1st.

24 The product to be sold will come in specially designed trays with a capacity of 30 bags
25 each. Each tray will measure 600x400x200 mm.

26 The sweet suppliers sell and deliver their products in monoreference europallets. That means
27 that you can order a multiple of europallets for each type of sweet with specific features.
28 Information about each sweet is given in the following table:

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Ref Caramel	Supplier	City	Grams per litre	Kgs per bag	Bags per box	Boxes per pallet	€ per pallet
RC1	Gusug	Elche	575	3	8	24	600
RC2	Gusug	Elche	625	3	10	30	800
RC3	Gusug	Elche	650	3	6	40	850
RC4	La Abuela	Hellín	700	4	8	16	400
RC5	La Abuela	Hellín	725	4	8	40	800
RC6	La Abuela	Hellín	600	4	12	40	600
RC7	Seclud	Bocairent	800	3	10	16	300
RC8	Seclud	Bocairent	850	5	8	24	850
RC9	Seclud	Bocairent	875	5	6	20	420
RC10	Seclud	Bocairent	925	5	8	24	850
RC11	Seclud	Bocairent	950	4	6	32	600
RC12	Molan	Murcia	1,000	5	8	16	500
RC13	Molan	Murcia	1,000	5	10	12	600
RC14	Molan	Murcia	1,050	5	6	24	650
RC15	Molan	Murcia	1,300	5	6	24	750

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As an external consultant, you should advise the company on how to set up the Operations system (Layout design, Supply plan, HHRR decisions, Process design, etc.).