

## “KaPeJu Titanium knees” case study

“KaPeJu Titanium knees” is a company which supplies surgical materials to “repair and substitute” bones and joints.

Basically, the company manufactures and sells prostheses and is responsible for delivering them to the hospitals. Nevertheless, the company’s activity is not limited to delivering the prostheses, but it also has to supply the sophisticated on-hand “toolbox” with all the materials that the surgeons will need to carry out implantations. On average, a complete toolbox costs €5,000.

At this time, you are working in the warehouse department.

The service offered by the company is composed of the following steps:

- a) The doctor sets a date to replace a joint.
- b) The warehouse office is informed of the due date (date of the operation) by the sales department. Usually, the order is placed 3 working days before the date of the operation.
- c) The material is sent to the hospital by courier service (delivery takes 1 to 2 days depending on the destination and mode of delivery).
- d) The operation is carried out on the day it was scheduled for or a few days later.
- e) After the operation, the hospital returns the toolbox. Sometimes, the return is immediate, sometimes a few days later.
- f) Once the toolbox is returned, the warehouse proceeds to wash it, and to check that nothing is missing. This operation takes around 10 working hours.
- g) Finally, the toolbox is stored and awaits the next order.

In the warehouse, the reception, cleaning, preparation, and delivery activities are performed by a 6-person team. Given the difficulty of some activities, polyvalence is a concern. In other words, not all the workers are capable of carrying out all of the activities.

The company offers a catalogue of 200 toolbox references. The annual demand of each one is quite different.

- Less than 10 toolbox references are ordered more than 30 times a year.
- Around 20 toolbox references are ordered between 10 and 30 times a year.
- Around 80 toolbox references are ordered between 6 and 10 times a year.
- Around 120 toolbox references are ordered between 1 and 5 times a year.

Your predecessor resigned 1 month ago...

Before leaving, she mentioned to you that: *“This job would drive you crazy. Up to a point, you are free to buy more toolboxes if they are needed. However, they don’t stop telling you that you have 2 million euros in toolboxes. “Murphy” (-see Murphy’s law-) acts like the owner of the hospitals; they ask nothing of you, but suddenly everything is expected of you. You might not deliver a toolbox in 2 years, and then they order it twice in 2 weeks. You can be idle during most of the year, and suddenly they order a toolbox that is not complete. You’ll find yourself begging the warehouse staff to work overtime some days. Then, Human Resources will shout at you because you are generating too much overtime. The doctors and sales team mislead you; for some operations, they ask you for 3 or 4 toolboxes, then they return them without even having opened them. Or worse still, they return toolboxes in which some tools are unused but have been mixed up. In addition, the Accounts Department shouts at you if you use urgent transport services, and the sales team shouts at you if you don’t. And be careful that a patient does not end up on the operating table with an open knee when the surgeon discovers that a f\*\*\*\*\*g washer is missing”.*