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| **Remarque préalable** Les exercices de TDs que vous allez découvrir sur la plateforme sont uniquement sous forme de QCM. Ces QCM sont de deux natures : * QCM de cours : elles reprennent le contenu du cours. Pour parvenir à répondre à ces questions, vous devez étudier les documents du cours.
* QCM sur les cas d’étude : un ou plusieurs cas d’étude sont proposés dans des documents portant le nom de « **Text-TDxx** ». Ces QCM feront toujours références au numéro de cas d’étude « xx ».
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# Second lecture (Ch 2)

# QUALITY

Quality is consistent conformance to customers’ expectations, in other words, ‘doing things right’, but the things which the operation needs to do right will vary according to the kind of operation. All operations regard quality as a particularly important objective. In some ways quality is the most visible part of what an operation does. Furthermore, it is something that a customer finds relatively easy to judge about the operation. Is the product or service as it is supposed to be? Is it right or is it wrong? There is something fundamental about quality. Because of this, it is clearly a major influence on customer satisfaction or dissatisfaction. A customer perception of high-quality products and services means customer satisfaction and therefore the likelihood that the customer will return.

**Quality inside the operation.** When quality means consistently producing services and products to specification it not only leads to external customer satisfaction but makes life easier inside the operation as well. Satisfying internal customers can be as important as satisfying external customers.

**Quality reduces costs.** The fewer mistakes made by each process in the operation, the less time will be needed to correct the mistakes and the less confusion and irritation will be spread. For example, if a supermarket’s regional warehouse sends the wrong goods to the supermarket, it will mean staff time, and therefore cost, being used to sort out the problem.

**Quality increases dependability.** Increased costs are not the only consequence of poor quality. At the supermarket it could also mean that goods run out on the shelves with a resulting loss of revenue to the operation and irritation to the external customers. Sorting out the problem could also distract the supermarket management from giving attention to the other parts of the supermarket operation. This in turn could result in further mistakes being made. The important point here is that the performance objective of quality (like the other performance objectives, as we shall see) has both an external impact which influences customer satisfaction and an internal impact which leads to stable and efficient processes.

## N° 1 – Organically good quality

‘Organic farming means taking care and getting all the details right. It is about quality from start to finish, not only the quality of the meat that we produce but also quality of life and quality of care for the countryside.’

Nick Fuge is the farm manager at Lower Hurst Farm located within the Peak District National Park of the UK. He has day-to-day responsibility for the well-being of all the livestock and the operation of the farm on strict organic principles. The 85-hectare farm has been producing high-quality beef for almost 20 years but changed to fully organic production in 1998. Organic farming is a tough regime. No artificial fertilizers, genetically modified feedstuff or growth promoting agents are used. All beef sold from the farm is home bred [Breed: Elever] and can be traced back to the animal from which it came. ‘The quality of the herd [troupeau] is most important,’ says Nick. ‘Our customers trust us to ensure that the cattle [bétail] are organically and humanely reared [élevé] and slaughtered [abattu] in a manner that minimizes any distress. If you want to understand the difference between conventional and organic farming, look at the way we use veterinary help. Most conventional farmers use veterinarians like an emergency service to put things right when there is a problem with an animal. The amount we pay for veterinary assistance is lower because we try to avoid problems with the animals from the start. We use veterinaries as consultants to help us in preventing problems in the first place.’

Catherine Pyne runs the butchery and the mail-order meat business. ‘After butchering, the cuts of meat are individually vacuum packed, weighed and then blast frozen. We worked extensively with the Department of Food and Nutrition at Oxford Brooks University to devise the best way to encapsulate the nutritional, textural and flavoursome characteristics of the meat in its prime state. So, when you defrost and cook any of our products you will have the same tasty and succulent eating qualities associated with the best fresh meat.’ After freezing, the products are packed in boxes, designed and labelled for storage in a home freezer. Customers order by phone or through the internet for next-day delivery in a special ‘mini deep freeze’ reusable container which maintains the meat in its frozen state. ‘It isn’t just the quality of our product which has made us a success,’ says Catherine. ‘We give a personal and inclusive level of service to our customers that makes them feel close to us and maintains trust in how we produce and prepare the meat. The team of people we have here is also an important aspect of our business. We are proud of our product and feel that it is vital to be personally identified with it.’

### Réfléchir sur les questions suivantes

1. What does Lower Hurst Farm have to get right to keep the quality of its products and its services so high?
2. Why is Nick’s point about veterinarian help important for all types of operation?

# SPEED

Speed means the elapsed time between customers requesting products or services and their receipt of them. Figure shown in your slides of the lecture illustrates what speed means for the four operations. The main benefit of speedy delivery of goods and services to the operation’s (external) customers lies in the way it enhances the operation’s offering to the customer. Quite simply, for most goods and services, the faster customers can have the product or service, the more likely they are to buy it, or the more they will pay for it, or the greater the benefit they receive. So, for example, TNT Express customers are willing to pay more for the services which deliver faster.

**Speed inside the operation.** Inside the operation, speed is also important. Fast response to external customers is greatly helped by speedy decision making and speedy movement of materials and information inside the operation. And there are other benefits.

**Speed reduces inventories.** Take, for example, the automobile plant. Steel for the vehicle’s door panels is delivered to the press shop, pressed into shape, transported to the painting area, coated for colour and protection and moved to the assembly line where it is fitted to the automobile. This is a simple three-stage process, but in practice material does not flow smoothly from one stage to the next. First, the steel is delivered as part of a far larger batch containing enough steel to make possibly several hundred products. Eventually it is taken to the press area, pressed into shape and again waits to be transported to the paint area. It then waits to be painted, only to wait once more until it is transported to the assembly line. Yet again it waits by the trackside until it is eventually fitted to the automobile. The material’s journey is far longer than the time needed to make and fit the product. It actually spends most of its time waiting as stocks (inventories) of parts and products. The longer items take to move through a process, the more time they will be waiting and the higher inventory will be.

**Speed reduces risks.** Forecasting tomorrow’s events is far less of a risk than forecasting next year’s. The further ahead companies forecast, the more likely they are to get it wrong. The faster the throughput time of a process, the later forecasting can be left. Consider the automobile plant again. If the total throughput time for the door panel is six weeks, door panels are being processed through their first operation six weeks before they reach their final destination. The quantity of door panels being processed will be determined by the forecasts for demand six weeks ahead. If instead of six weeks they take only one week to move through the plant, the door panels being processed through their first stage are intended to meet demand only one week ahead. Under these circumstances it is far more likely that the number and type of door panels being processed are the number and type which eventually will be needed.

## N° 2 – When speed means life or death

Of all the operations which have to respond quickly to customer demand, few have more need of speed than the emergency services. In responding to road accidents especially, every second is critical. The treatment you receive during the first hour after your accident (what is called the ‘golden hour’) can determine whether you survive and fully recover or not. Making full use of the golden hour means speeding up three elements of the total time to treatment – the time it takes for the emergency services to find out about the accident, the time it takes them to travel to the scene of the accident and the time it takes to get the casualty to appropriate treatment. Alerting the emergency services immediately is the idea behind Mercedes-Benz’s TeleAid system. As soon as the vehicle’s air bag is triggered, an on-board computer reports through the mobile phone network to a control centre (drivers can also trigger the system manually if not too badly hurt), satellite tracking allows the vehicle to be precisely located and the owner identified (if special medication is needed). Getting to the accident quickly is the next hurdle. Often the fastest method is by helicopter. When most rescues are only a couple of minutes’ flying time back to the hospital, speed can really save lives. However, it is not always possible to land a helicopter safely at night (because of possible overhead wires and other hazards) so conventional ambulances will always be needed, both to get paramedics quickly to accident victims and to speed them to hospital. One increasingly common method of ensuring that ambulances arrive quickly at the accident site is to position them not at hospitals but close to where accidents are likely to occur. Computer analysis of previous accident data helps to select the ambulance’s waiting position, and global positioning systems help controllers to mobilize the nearest unit. At all times a key requirement for fast service is effective communication between all who are involved in each stage of the emergency. Modern communications technology can play an important role in this.

### Réfléchir sur les questions suivantes

1. Draw a chart which illustrates the stages between an accident occurring and full treatment being made available.
2. What are the key issues (both those mentioned above and any others you can think of) which determine the time taken at each stage?

# Cost

To the companies which compete directly on price, cost will clearly be their major operations objective. The lower the cost of producing their goods and services, the lower can be the price to their customers. Even those companies which compete on things other than price, however, will be interested in keeping their costs low. Every euro or dollar removed from an operation’s cost base is a further euro or dollar added to its profits. Not surprisingly, low cost is a universally attractive objective.

The ways in which operations management can influence cost will depend largely on where the operation costs are incurred. The operation will spend its money on staff (the money spent on employing people), facilities, technology and equipment (the money spent on buying, caring for, operating and replacing the operation’s ‘hardware’) and materials (the money spent on the ‘bought-in’ materials consumed or transformed in the operation).

Although comparing the cost structure of different operations is not always straightforward and depends on how costs are categorized, some general points can be made. Many of the hospital’s costs are fixed and will change little for small changes in the number of patients it treats. Its facilities such as beds, operating theatres and laboratories are expensive, as are some of their highly skilled staff. Some of the hospital’s costs will be payments to outside suppliers of drugs, medical supplies and externally sourced services such as cleaning, but probably not as high a proportion as in the car factory. The car factory’s payment for materials and other supplies will by far outweigh all its other costs put together. Conversely, the city bus company will pay very little for its supplies, fuel being one of its main bought-in items. At the other extreme, the supermarket’s costs are dominated by the cost of buying its supplies. In spite of its high ‘material’ costs, however, an individual supermarket can do little if anything to affect the cost of goods it sells. All purchasing decisions will probably be made at company headquarters. The individual supermarket will be more concerned with the utilization of its main asset, the building itself, and its staff.

**Improving productivity**

One obvious way of improving an operation’s productivity is to reduce the cost of its inputs while maintaining the level of its outputs. This means reducing the costs of some or all of its transformed and transforming resource inputs. For example, a bank may choose to locate its call centres in a place where its facility-related costs (for example rent) are cheaper. A software developer may relocate its entire operation to India or China where skill labour is available at rates significantly less than in European countries. A computer manufacturer may change the design of its products to allow the use of cheaper materials.

Productivity can also be improved by making better use of the inputs to the operation.

For example, garment manufacturers attempt to cut out the various pieces of material that make up the garment by positioning each part on the strip of cloth so that material wastage is minimized. All operations are increasingly concerned with cutting out waste, whether it is waste of materials, waste of staff time or waste through the under-utilization of facilities.

**Cost reduction through internal effectiveness**

Our previous discussion distinguished between the benefits of each performance objective externally and internally. Each of the various performance objectives has several internal effects, but all of them affect cost. So one important way to improve cost performance is to improve the performance of the other operations objectives.

High-quality operations do not waste time or effort having to re-do things, nor are their internal customers inconvenienced by flawed [imparfait] service. Fast operations reduce the level of in-process inventory between micro operations, as well as reducing administrative overheads. Dependable operations do not spring any unwelcome surprises on their internal customers. They can be relied on to deliver exactly as planned. This eliminates wasteful disruption and allows the other micro operations to operate efficiently. Flexible operations adapt to changing circumstances quickly and without disrupting the rest of the operation. Flexible micro operations can also change over between tasks quickly and without wasting time and capacity.

## N° 3 – Everyday low prices at ALDI

Aldi is an international ‘limited assortment’ supermarket specializing in ‘private label’, mainly food products. It has carefully focused its service concept and delivery system to attract customers in a highly competitive market. The company believes its unique approach to operations management makes it ‘. . . virtually impossible for competitors to match our combination of price and quality’.

Aldi operations challenge the norms of retailing. They are deliberately simple, using basic facilities to keep down overheads. Most stores stock only a limited range of goods (typically around 700 compared with 25,000 to 30,000 stocked by conventional supermarket chains). The private-label approach means that the products have been produced according to Aldi quality specifications and are sold only in Aldi stores. Without the high costs of brand marketing and advertising and with Aldi’s formidable purchasing power, prices can be 30 per cent below their branded equivalents. Other cost-saving practices include open carton displays which eliminate the need for special shelving, no grocery bags to encourage recycling as well as saving costs, and using a ‘trolley rental’ system which requires customers to return the trolley to the store to get their coin deposit back.

### Réfléchir sur les questions suivantes

1. What are the main ways in which Aldi operations try to minimize costs?
2. Facultative: How is cost affected by the other performance objectives?