***Chapter 7 Activity and case study solutions***

**Activity 7.1**

1. Increase in productivity by 100%
2. Increase in productivity by 50%
3. Increase in productivity by 10%
4. Increase in productivity by 26.7%
5. Increase in productivity by 26.7%

**Activity 7.2**

\*There are many inputs, transformation processes and outputs for the following types of businesses. For simplicity, the answers are limited.

1. Inputs, transformation and final outputs.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Car dealership | Butcher shop | Accountancy firm | Supermarket |
| Inputs | * Salespeople
* Vehicles
* Time
* Money
* Large retail floor space
 | * Butcher
* Sales staff
* Time
* Meat
* Knives chopping boards
* Shop front
 | * Accountants
* Lawyers
* Client information
* Computer
* Calculator
* Time
* Tax law information
* Office space
 | * Check out staff
* Shelf stacking staff
* Products for sale
* Time
* Large retail floor space
 |
| Transformation | * Receive vehicles
* Arrange vehicles for sale
* Receive and greet customer
* Take customer on a test drive
* Negotiate deal with customer
* Sign contract and exchange payment for vehicle.
 | * Butcher prepares meat for sale
* Butcher arranges meat in cabinet for sale
* Sales staff assist customers to choose a product
* Customers select product
* Meat exchanged for payment
 | * Accountant meets with client.
* Client provides their tax information.
* Accountant reviews client information and prepares tax return.
* Client reviews draft return.
* Accountant submits final tax return.
* Client pays a fee for service and receives any money owing from the Government.
 | * Staff receive stock.
* Stack stock onto the shelves.
* Customer removes stock from shelves.
* Customer checks out items at a register.
* Customer exchanges payment for the goods.
 |
| Final output | * Vehicle sold to customer
 | * Meat sold to customer
 | * Completed tax return.
* Refund check from the Government.
 | * Customer receives required.
 |

1. Evaluation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Car dealership | Butcher shop | Accountancy firm | Supermarket |
| Productivity levels (efficiency)  | * Number of cars sold per month.
 | * Number of sausages produced per hour.
 | * Time taken to complete a tax return.
 | * Number of items scanned at the checkout per minute.
 |
| Levels of quality in goods or services produced | * Number of customer complaints per month.
 | * Results of a customer satisfaction survey.
 | * Percent of repeat customers.
 | * Number of returned items per month.
 |

1. Influence of the external environment
	1. The inputs of an operations system

Suppliers – Determine the quality and cost of inputs.

Regulatory bodies – Prohibit the use of some substances as inputs (e.g., asbestos)

Technological development – Provides access to new and improved inputs.

* 1. The transformation phase of an operations system

Technological development – Improves speed and accuracy of processes.

Trade unions – Lobbies to regulate legal working hours / processes.

Societal expectations – Exerts pressure for sustainable/environmental processes.

* 1. The outputs of an operations system

Competitors – Influences the price of the outputs.

Regulatory bodies – Restricts the sale of certain items.

Lobby / pressure groups – Aims to encourage/disrupt the sale of certain items.

**Case Study 7.1: Operations evolution: Ford Motor Company**

1. 1908
2. Previously, cars had been ‘built using a fixed position layout. Ford developed the production (or assembly) line. Instead of workers going to each car, each vehicle was transported on an assembly line to workers who remained stationary. Each employee was only required to perform one or two tasks repetitively. This reduced wage costs as they only needed to be paid as unskilled employees. Workers were no longer craftsmen.
3. By 1912, the price of a model T Ford had fallen to $575; by 1925 it was less than $300. The time taken to assemble a car had reduced from more than 12.5 hours in 1908 to less than 6 hours by 1925. Costs were reduced on labour and also productivity improved.
4. 1925, in Geelong
5. Over the years improvements enabling productivity growth occurred. In 1925, around 30 vehicles were assembled per day. By 2005 Ford were producing approximately 500 per day. By this stage the whole process was controlled by a master computer and up to 120 different models were being built on the one production line. A just-in-time supply system was also in use. Other innovations included robotics. High-tech robots had replaced hand tools. Painting of the vehicles was also fully automatic.
6. Huge crates were offloaded at the nearby wharf from Canada. Chassis components, engines, transmissions and rear axles were unpacked and stacked. Workers used hand tools to bolt the components together and block and tackle to lift the assembled body onto the chassis. Upholstery was hand-stitched. Body frames were made of wood. As each car was built, it was pushed out the door and across the street to be collected by a dealer or placed on a train. In 1936 the wooden body was replaced with an all-steel frame. In 1937 a massive stamping press was installed, marking the development of the complete steel body.
7. It would have become uncompetitive and gone out of business.

**Activity 7.3**

Please refer to the websites and clips mentioned in the text book for answers to this activity. Cars and chainsaws are both manufactured goods. There may be some similarities in the categories of inputs required. Given they are different products, there will be some differences in the transformation processes required.