***Chapter 7 Summary Question Solutions***

1. Definitions: (definitions drawn from chapter 7 where possible)
   1. **Operations managers**: An operations manager is a senior employee that is responsible for the operations system. They manage the procurement of inputs, the transformation processes and the delivery of outputs to final customers.
   2. **Competitiveness**: Competitiveness refers to the ability of a particular organisation to provide a good or service compared to its rivals. The most competitive organisation in a market often provides the highest quality good/service for the lowest price and excellent customer service. How competitive a particular organisation is, depends on the management of the inputs, processes and outputs in the operations system.
   3. **Goods**: Goods exist in the physical world. They can be seen and are tangible – can be touched. Goods are manufactured. They can be standardised and stored as inventory.
   4. **Services**: A service is a non-tangible product. It is something that is performed by the producer. Production and consumption often occurs simultaneously, which means there is a high degree of contact between producer and consumer. Services are tailored to the consumer. For example, medical services.
   5. **Productivity**: Productivity refers to the ratio of output obtained from a level of input. An organisation may be able to improve its productivity by introducing new technology, or redesigning the tasks and processes involved in the production process.
2. Manufacturing and service industries both aim to produce a quality product at the best possible price. They both hope to maximise their profitability and many hope to employ processes that are ethical and socially responsible. The operations systems of manufacturing and service industries are the same in so far as they use inputs, and processes to produce outputs. The products produced by manufacturing and service industries are different. Manufacturing industries use capital intensive processes to produce goods and service industries use labour intensive processes to perform services. Goods and services have different characteristics. Goods are tangible and can therefore be stored as inventory. Whereas services are intangible, and are therefore difficult to store (however a record of a service can be stored). Production and consumption occurs separately where goods are concerned, and simultaneously where services are concerned. As a result, there is minimal contact between producer and consumer where goods are being manufactured and a high degree of contact between producer and consumer where services are being performed. As a result of the production process, goods are easily standardised and can therefore be mass produced. Whereas services are often customised to fit the needs of a particular consumer.
3. *Competitiveness refers to the ability of a particular organisation to provide a good or service compared to its rivals.*

*A business that produces a quality product is likely to command a larger share of the market than its rivals. Consumers realise that the product for sale will be long lasting and perform as advertised. When consumers are confident about the quality of a product, they are prepared to pay more for it, understanding the relationship between quality and price. Therefore, a business that produces a quality product is more likely to attract and retain customers and make a profit from its product, which creates a competitive business.*

*Productivity refers to the ratio of output obtained from a level of input. A business can increase its productivity by for example, employing highly skilled and experienced staff. Skilled and experienced staff understand what to do and how. Therefore, they make few mistakes meaning less downtime and wastage. A business can also increase productivity by using the latest technology, which can help increase the speed of production, and minimise errors and defects, therefore helping to maximise the quality of outputs. Increasing productivity means reducing waste. The productivity savings can be reinvested into the business helping it to develop further. Increasing productivity helps improve overall business performance, which increases competitiveness*

1. Impacts on business competitiveness:
   1. Speed of production: A business that is able to maximise the speed of production is also able to maximise sales, revenue and profit helping to maximise the competitiveness of the business. For example, a sandwich shop that is well laid out and staffed with an appropriate number of skilled and experienced employees may be able to make 5 sandwiches per minute during the lunch time rush. A sandwich shop that is not so well staffed or laid out may only be able to make 1 sandwich per minute. Say the quality of the sandwiches is the same at both stores. The more productive store can attend to more customers. Which means less waiting for lunch. It is therefore likely to attract more customers, and therefore make more sales, which generates more revenue and profit.
   2. Maintenance of equipment: It is crucial to maintain equipment. Equipment that is poorly maintained will break down, leading to stoppages in the production process. As a result, the business will be unable to fill customer orders on time. As customers lose faith in the business, its reputation will decline. This will lead to fewer future orders, profit loss and a decreasing level of competitiveness.
   3. Quality of inputs: A business that procures cheap, low quality inputs will produce a poor quality product that they will find difficult to sell to consumers. As a result, they will struggle to earn a profit and compete with other businesses in their industry. For example, a bakery that uses stale flour and watery icing mixture will produce a substandard coffee scroll. Consumers will not be attracted to buy product because of the less than appealing appearance of the treat. Those who try it are not likely to return, because of its taste. As a result, the bakery will struggle to attract and retain customers, and will not become a competitive business.
2. Measures of productivity:
   1. **A hospital**: Emergency room wait times
   2. **A brewery**: Number of bottles filled per hour
   3. **A secondary school**: VCE pass rate
   4. **A police station**: The number of minutes taken to respond to a call out.
   5. **A market gardener growing tomatoes**: Crop yield per plant.
3. Differentiating concepts:
   1. *Production* is the process that transforms inputs into outputs. Whereas *productivity* refers to the ratio of output obtained from a level of input.
   2. *Inputs* are the ingredients that combine to create a good or service. Whereas an *output* is the final product of the transformation process. It is the good or service that will be sold to the customer.
   3. *Human resources* refers to the human labour that is used in the production process. Whereas *capital resources* refers to the money, machinery and equipment that is used in the production process.
   4. The *service industry* performs and sells services whereas the *manufacturing industry* produces and sells goods.
   5. *Raw materials* are unprocessed natural resources like coal whereas *component parts* are processed inputs like a windscreen, for the manufacturer of a car.
4. Key element in the operations systems:

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|  | A school | A bakery | A wheat farmer | An airline |
| Inputs | * Teachers * Students * Buildings * Technology * Text books | * Bakers * Sales staff * Raw ingredients. * Equipment – utensils, mixing machines, oven. | * Farmer * Land * Soil * Seeds * Sun * Rain * Farming equipment – seeding machine, tractor, watering equipment, harvester. | * Plane * Fuel * Pilots * Engineers * Mechanics * In-flight crew * Food |
| Processes | * Teachers prepare lessons. * Students attend class. * Teachers deliver lessons. * Students/teachers work through learning exercises. * Students complete homework. * Students take tests and exams. | * Bakers mix ingredients and place in oven. * Bakers arrange produce on shelves, and in cabinets. * Sales staff greet customers and take orders. * Bakes goods are exchanged for payment. | * Farmer prepares soil. * Farmer plants seeds. * Farmer waters seedlings. * Natural sun and water helps seeds to grow. * When mature, Farmer harvests the wheat. | * Engineers and mechanics service plane and fill it with fuel. * Pilot and crew board plane and prepare to greet customers. * Customers board the plane and take their seats. * Pilot flies plane. * Crew provides customers with meals. * Pilot lands plane. |
| Outputs | * Students develop skills and knowledge in a particular subject area. | * Baked goods | * Wheat | * Movement of humans and cargo from a point of departure to a point of arrival. |