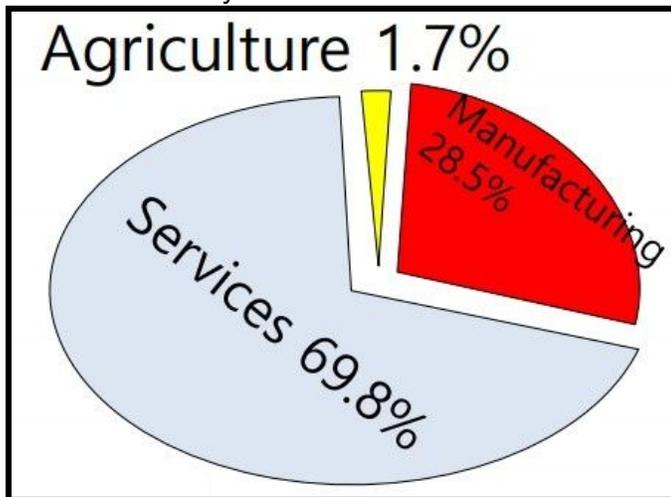


**Lecture Notes:**

- **Operations:**
- **Operations** is managing the creation of goods and services using the factors of production.
- Operations help bring cash into the business (inflow).
- Operations ensure healthy supplier relationships (outflow).
- Operations contribute to the financial well-being of an organisation (net cashflow).
- It's called operations because production implies Canadian businesses "produce" goods rather than "provide" services.
- **Note:** 80% of Canadians work in services.
- **Operations Management:**
- **Operations management** is the planning, organising, leading, and controlling the creation of the goods and services that the businesses' customers demand.
- **Goods and Services:**
- **Goods** are products you can see and touch.
- **Services** are products that are intangible.
- Canadian GDP by Sector - 2012

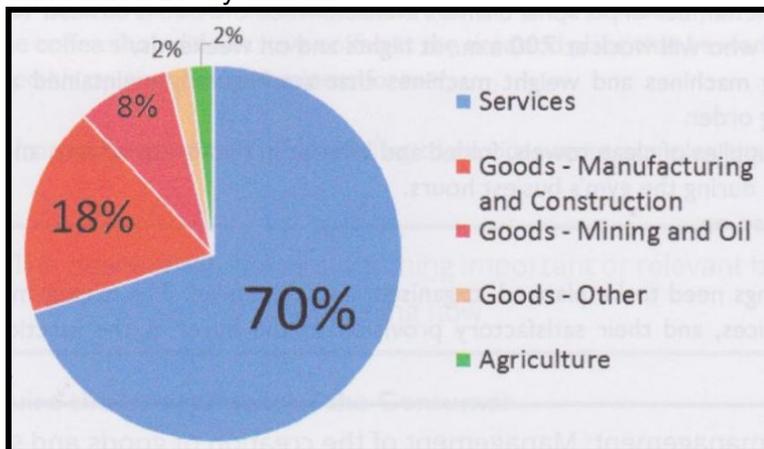


- Examples of services include:
  - Finance: loans, deposits, investments
  - Consulting: marketing, ideas, design
  - Legal advice: leases, wills, contracts
- **Service operations** is the provision of services that needs to be planned, organized, and controlled.
- In some ways services more difficult to provide than goods:
  - 1. Immediacy:**
    - Services can't be stored.
    - Goods such as books, laptops, tvs, etc can be stored.
    - Services can't be stored. You can't store a doctor appointment.
  - 2. Customer involvement:**
    - Goods can be manufactured without customer involvement. E.g. Cars, laptops, etc are manufactured without customer involvement.
    - Services, such as doctor appointments, need customer involvement.
  - 3. Customization:**
    - Goods are usually identical with a few slight differences. Consider the same type of an iPhone. They are mass produced with the same dimensions and features. The only possible difference is the colour of the iPhone.

- Services are customized. If a group of people go see the same doctor, each person will probably have different issues.
- **Operations Management:**
- We need operations managers because general managers are often too busy to pay attention to details.
- What operations managers because:
  1. **Demand planning:** Forecast how much you need to make.
  2. **Capacity planning:** Ensure there is enough space and workers to meet demand.
  3. **Location planning:** Finding the best location for getting raw materials, good employees, and being close to customers.
  4. **Layout planning:** Arrange the store/factory for smooth flow of materials.
  5. **Schedule:** To finish on time, we need to start on time.

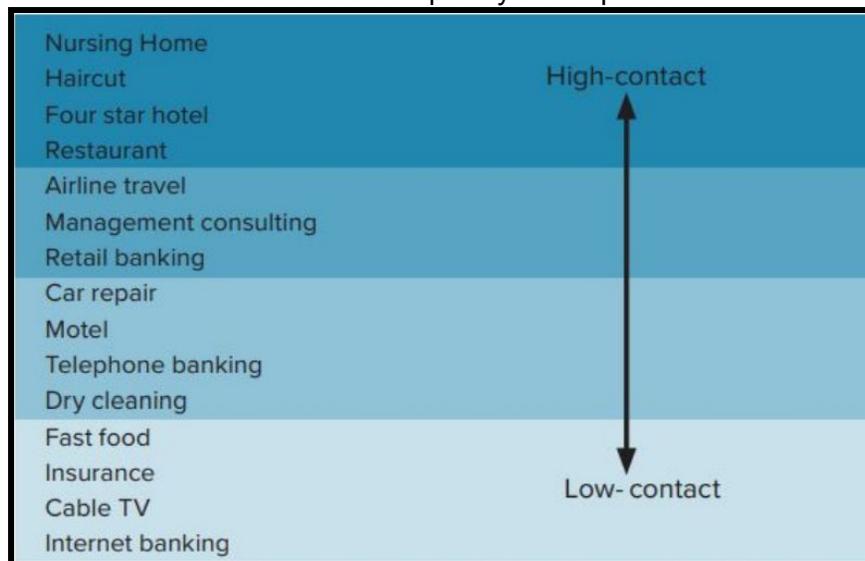
**Textbook Notes (Chapter 6):**

- **Operations - Providing the Things That People Want:**
- **Operations** is the function of the business that transforms factors of production into goods or services that customers want.
- Historically, the business function that created products was known as production and the responsibility of managers in this function was called product management. However, during the last quarter of the 20th century, the term “production” was replaced by “operation”.
- **Production operations** are activities that turn inputs into tangible goods.
- Canadian GDP by Sector:



- **Service operations** are activities that turn inputs into intangible services.
- **Operations management** is the management of the creation of goods and services, and their satisfactory provision to the buyer.
- Operation managers are responsible for ensuring that the business is producing products that work as they should, at the right time, and in the right quantity to satisfy customer needs. At the same time, being mindful of profit, they attempt to do so while using as few resources as possible.
- **Special Characteristics of Services:**
- **Goods** are products which are tangible. Examples include laptops, jeans, pencils.
- **Services** are products which are **intangible** but can be experienced. Examples include healthcare and education. **Intangibility** is the characteristic of services that makes them unable to be touched or seen.

- Differences Between Goods and Services:
  1. **Goods can be made in advance while services are performed immediately:**
    - Consider goods such as laptops, jeans or pencils. They are made in advance.
    - Now, consider services such as healthcare or education. They cannot be made in advance. It must be made there and then.
    - The term used to describe this characteristic of services is **immediacy**. **Immediacy** is the quality that makes something important or relevant because it is happening there and then.
    - Because of immediacy, for businesses that provide services, scheduling is likely to be more complex than for businesses that provide goods.
  2. **Many services require the involvement of the customer:**
    - As a consequence of immediacy, many services necessarily involve the presence and involvement of the customer.
    - E.g. Think of a haircut.
    - Services that require personal interaction with the customer are called **high-contact services**.
    - **Low-contact services** are services that don't necessarily involve interaction with the customer.  
E.g. Mowing someone else's lawn.
    - Customer involvement adds complexity to the product.



3. **Services are customized:**
    - Many goods come in one form or have little variety.
    - Services are tailored made for customers and it's unusual for 2 customers to want the same service delivered in the same way.
    - The characteristic that no 2 customers want the same service delivered in the same way is called **customization**.
  4. **Most goods can be stored while services cannot:**
    - Consider services such as education or healthcare. It can't be stored while goods such as jeans or laptops can.
    - Furthermore, services can't be purchased in bulk while goods can.
- As a result of the 4 factors above, services are harder to provide than goods.
  - About 80% of Canadians work in services.

- **The Activities of Operations Management:**
- Operations planning involves determining how much the business will be supplying to its customers.
- The business' owners and strategic leaders will use their prior knowledge and intuition, observation of existing competitors and market research to develop an idea of the potential size of the overall market. This will allow the business to **forecast** future demand for the business' goods or services.
- The operations plan then needs to address the following:
  - **Capacity:** How much of the market should the business prepare to capture?
  - **Location:** Where should factories, warehouses, stores and offices be located?
  - **Layout:** What is the most efficient design for factories, shops and offices?
  - **Scheduling:** What days of the week and hours should the business operate?
  - **Material Management:** Where to buy materials, how many to buy and when should they be ordered by?
- **Capacity Planning:**
- **Capacity** is the quantity of product that a business plans to produce under normal working conditions.
- Observation and research can help the business' managers estimate future demand.
- The capacity of a business depends on the quantity of machinery and equipment it uses and on the number of people it employs.
- A business can produce more if it buys more, bigger or more modern equipment or if it hires more people. However, equipment is expensive to buy, install and maintain and people are expensive to recruit, train and employ.
- A business whose capacity is too small may have to turn customers away. On the other hand, a business whose capacity is too large is wasting money on unused machinery and under-employed workers.
- **Location Planning:**
- **Location planning** is the decision as to where best to locate the business' facilities and operations.
- Choosing the best location for performing operations needs to take into consideration the location and availability of:
  - Raw materials
  - Employees
  - Electricity
  - Transportation
  - Distribution intermediaries
  - Customers
- A lot of success depends on location.
- High contract service businesses must be located close to the customer. There's a well-known saying in the retail business that success depends on 3 things:
  1. Location
  2. Location
  3. Location
- **Layout Planning:**
- **Layout planning** is designing the business' factories, shops and offices so as to provide maximum efficiency and effectiveness.
- Customer-facing areas need to be spacious and easy to locate.
- The good producing areas in factories must be arranged so that the machinery, equipment and supplies can be efficiently used to make more than one model or one design of product and can quickly respond to each customer's specific needs.

- **Scheduling:**
- **Scheduling** is determining when an activity should take place so as to accomplish a goal by its target completion date.
- Although the production of goods lacks some of the immediacy of the provision of services, businesses that sell or produce seasonal products need to ensure that the product is available to coincide with customer demand.  
For example, a sports store should sell winter gear during winter and summer gear in summer.
- **Lead time** is the gap between the time when a customer wants a product, and when the producer needs to begin the process of creating it.
- To finish on time you must start on time.
- A popular tool used by operations managers to aid their scheduling is the Gantt Chart. The **Gantt Chart** is a visual representation of all of the activities required to complete an activity and the time needed to accomplish each activity. It is named after Henry Gantt.
- The Gantt Chart allows planners to see the sequence of activities, when activity is scheduled to begin or end, duration of activity, when two or more activities overlap they must be done simultaneously.
- A Gantt Chart displays activities, either tasks or events, as a list down the left hand side of a table. Along the horizontal axis at the top is a suitable time scale. This may be expressed in hours, days, weeks, months or years. Each activity is represented by a bar; the position and length of the bar reflects the start date, duration and end date of the activity.
- Example of a Gantt Chart:



- **Supply Chain Management:**
- **Supply chain** is the flow of materials and services between all the businesses that provide inputs into a finished product.
- For example, a bakery can't make buns unless it has flour, flour can't be produced unless it has wheat, wheat can't be produced without fertilizer, etc.
- **Supply chain management** is managing the flow of information and materials between all the suppliers and customers in a chain.
- The saved time and reduced costs that businesses enjoy as a result of good supply chain management should result in greater profits.

- When members of a supply chain communicate with one another to plan, organize and schedule a coordinated system, they are likely to save both time and money.

**Textbook Definitions (Chapter 6):**

- **Capacity:** The quantity of product that a business plans to produce under normal working conditions.
- **Customization:** The characteristic that no 2 customers want the same service delivered in the same way.
- **Forecast:** An estimate of the future demand for a business' goods and services.
- **Gantt chart:** A visual representation of all of the activities required to complete an activity and the time needed to accomplish each activity.
- **Goods:** Products which are tangible.
- **High-contact services:** Services that require personal interaction with the customer.
- **Immediacy:** The quality that makes something important or relevant because it is happening there and then.
- **Intangibility:** The characteristic of services that makes them unable to be touched or seen.
- **Layout planning:** Designing the business' factories, shops and offices so as to provide maximum efficiency and effectiveness.
- **Lead time:** The gap between the time when a customer wants a product, and when the producer needs to begin the process of creating it.
- **Location planning:** The decision as to where best to locate the business' facilities and operations.
- **Low-contact services:** Services that don't necessarily involve interaction with the customer.
- **Operations:** The function of the business that transforms factors of production into goods or services that customers want.
- **Operations management:** Management of the creation of goods and services, and their satisfactory provision to the buyer.
- **Production operations:** Activities that turn inputs into tangible goods.
- **Scheduling:** Determining when an activity should take place so as to accomplish a goal by its target completion date.
- **Service:** Products which are intangible but can be experienced.
- **Service operations:** Activities that turn inputs into intangible services.
- **Supply chain:** The flow of materials and services between all the businesses that provide inputs into a finished product.
- **Supply chain management:** Managing the flow of information and materials between all the suppliers and customers in a chain.