Technical Analysis

Meaning of Technical Analysis

Technical analysis is a trading discipline employed to evaluate investments and identify trading opportunities by analyzing statistical trends gathered from trading activity, such as price movement and volume.

Unlike fundamental analysis, which attempts to evaluate a security's value based on business results such as sales and earnings, technical analysis focuses on the study or price and volume. Technical analysis tools are used to scrutinize the ways supply and demand for a security will affect changes in price, volume and implied volatility. Technical analysis is often used to generate short-term trading signals from various charting tools, but can also help improve the evaluation of a security's strength or weakness relative to the broader market or one of its sectors. This information helps analysts improve there overall valuation estimate.

Technical analysis can be used on any security with historical trading data. This includes stocks, futures, commodities, fixed-income, currencies, and other securities. In this tutorial, we'll usually analyze stocks in our examples, but keep in mind that these concepts can be applied to any type of security. In fact, technical analysis is far more prevalent in commodities and forex markets where traders focus on short-term price movements.

Factors considered in Technical Analysis

(1) Material input & utilities – It involves defining the requirements for materials and utilities, specifying their properties and setting up a supply channel. Material input & utilities may be classified into the following:

Raw materials – Agricultural products, Mineral Products, Livestock, Forest Products, Marine Products

Processed Industrial Materials/Components – Base metals, semi-processed materials, manufactured parts, small component

Auxiliary materials and factory supplies – chemicals, additives, packaging material, paint, oil, grease, cleaning materials

Utilities – power, water, steam, fuel

The following must be kept in mind while taking decisions regarding material, inputs and utilities:

- Physical properties of the material
- Transportation, Handling and Storage costs
- Quantity available from Domestic/Foreign sources
- Past and future trends in prices

(2) Manufacturing process/Technology – Taking a decision on manufacturing process and technology to be used is one of the most important decisions in technical analysis of a project. There are various options and alternatives available for manufacturing a product or service. It is the task of the project manager to select that process or technology that is easy to acquire, appropriate for the project and feasible with budget and technical requirements of the proposed project.

The choice of technology is influenced by the following considerations:

- Plant Capacity
- Material Inputs
- Production cost
- Product mix
- Technological Obsolescence
- Ease of adoption

(3) Product Mix – An important aspect in technical analysis of a project is product mix decision. It is essential to choose an effective product mix as different customers have different taste, preferences and needs. The choice of product mix is usually guided by market requirements. A project manager must keep in mind the quality of products and flexibility in production while taking product mix decisions.

(4) Plant capacity – It refers to the volume or no. of units that can be manufactured during given time period. It is also known as production capacity. It is the task of the project manager to determine the feasible normal capacity and nominal maximum capacity for the project.

Feasible Normal Capacity – It refers to the capacity attainable under normal working condition. It is computed keeping in mind the following factors:

- Installed capacity (machinery and equipment)
- Technical conditions of the plan
- Normal stoppages
- Holidays, shift patterns
- Downtime for maintenance etc.

The feasible normal capacity is the actual production capacity of a plant and usually depends upon the following factors:

- Technical Requirements
- Input Constraints
- Cost of Investment
- Market Conditions
- Resources of the company

- Government policy

Nominal Maximum Capacity – It refers to capacity that is technically obtainable through use of machines. It is usually the capacity guaranteed by the supplier of machinery.

(5) Location & Site – Location refers to a broad area within the city and while site means a specific piece of land where project would be set-up. For the purpose of site selection a critical assessment of the demand, size of plant and input requirements is conducted which involves examining the following factors:

- Proximity of Land to Markets
- Availability of raw materials
- Availability of Labor
- Existing Infrastructure i.e. roads, electricity, power, water supply
- Cost of land
- Government Policies

Miscellaneous other factors like

- Climatic conditions
- General living conditions
- Proximity to auxiliary inputs / units
- Ease of Waste disposal and dumping

(6) Machinery & Equipment – Machinery and Equipment requirement depends upon the production technology and plant capacity of the proposed project. While conducting a technical analysis of a project the following steps must be used to select machinery and equipment:

Steps to select machinery and equipment for a project-

- Estimate levels of production over time
- Define various machining and operations
- Calculate machine hours required for each type of operations
- Select equipment and machinery for each function

Types of Machinery and equipment –

- Plant equipment (process)
- Mechanical equipment
- Electrical equipment
- Instruments
- Controls and Internal Transportation System
- Spare parts and Tools – required with the original equipment and for operational wear and tear.

Things to be considered while selecting machinery and equipment:

- Availability of power to run machines
- Transporting heavy equipment
- Ease of use
- Import Policies of Government if the machines are to be imported from a foreign country

Machinery may be procured in two ways either by placing different orders to different suppliers or through a turn-key contract

Factors affecting procurement of Machinery→

- Quality of machinery

- Level of technical sophistication
- Reputation of supplier
- Expected delivery schedule
- Payment terms
- Performance guarantees

(7) Structure and Civil Works – Technical analysis of a project for buildings, structures and civil works involves preparation and development of site which includes:

- grading and leveling of land
- demolition of existing structures
- relocation of pipeline, cables, roads
- reclamation of sewers and drainage
- connections for utilities
- arranging for electricity, water etc.

Buildings & structures – It involves construction of

- factory buildings
- ancillary buildings
- administrative area
- residential quarters
- non factory buildings – cafe, medical center

Outdoor works – It involves

- supply & distribution of utilities
- handling and treatment of emission, wastes, effluents
- outdoor lighting
- transportation
- landscaping
- enclosure and supervision – boundary, fence, barriers, gates, doors, security posts

Environment Aspect –

- The project must comply with all environmental rules and regulations
- All affluent must be disposed-off properly
- Eco-friendly standards must be adopted in the production process

(8) Projects Charts & Layout – Once the project manager has sufficient data related to market size, plant capacity, production technology, machinery and equipment, buildings etc. he prepares charts and layouts for the proposed project. Project charts and layouts help to:

- Define the scope of the project
- Provide basis for detailed project engineering
- Help is estimating investment and production cost

Plant Layout

The efficiency of a manufacturing operation depends upon the layout of the plant and machinery. Plant layout is the arrangement of the various production facilities within the production area. Plant layout should be so arranged that it ensured steady flow production and minimizes the overall cost.

The following factors should be considered while deciding plant-layout:

i) The layout should be such that future expansion can be done without much alteration of the existing layout.

ii) The layout should facilitate effective supervision of work.

iii) Equipments causing pollution should be arranged to be located away from other plant and machinery. For example, generator is a major source of noise pollution.

iv) There should be adequate clearance between adjacent machinery and between the wall and machinery to enable undertaking of regular inspection and maintenance work.

v) The plant layout should ensure smooth flow of men and material from on stage to another.
vi) The plant layout should be one that offers maximum safety to the personnel working inside the plant.

vii) The plant layout should provide for proper lighting and ventilation.

viii) The plant layout should properly accommodate utilities like power and water connections and provisions for effluent disposal.

Location of Projects

Choosing the location for a new project is to be done taking many factors into account. The study for plant location is done in two phases. First a particular region/ territory is chosen that is best suited for the project. Then, within the chosen region, the particular site is selected. Thus, we may say that there are two major factors, viz., Regional factors and site factors, to be considered.

The location of a business is the place where it is situated. There are a number of factors that need to be considered in choosing a location for a business. One of the earliest decisions any entrepreneur has to make is where to locate his or her business. In order to do this, he or she has to make a careful assessment of costs. The ideal location would be one where costs are minimized. The entrepreneur would need to look at the benefits which each area had to offer as well as any government help which might be available.

Main Factors Affecting Location

1. Market

The nearness of the market and the cost of delivering the goods are likely to be important factors.

2. Raw materials

If the raw materials are bulky and expensive to transport it will clearly be in the entrepreneur's interest to locate near to them.

3. Transport costs

The two major influences are the pull of the market and the pull of the raw materials and these are determined by whether or not the industry is bulk-increasing or bulk-decreasing.

4. Land

Land costs vary considerably nationally and some firms, e.g. wholesalers, might need a large square-footage. They might, therefore, be influenced by the cheaper rents and property prices found in some areas.

5. Labor

The availability of labor might well attract firms to an area, particularly if that labour force has the skills they require.

6. Safety

Some industries have to locate their premises well away from high density population levels and their choice of location is limited.

7. Waste disposal

Certain industries produce considerable waste and the costs associated with the disposal of this might affect their location.

8. Government

Government provides special assistance to areas of high unemployment. This takes place within the UK, and is also a feature of wider European Union regional policy.

A convenient location

A number of businesses have set up close to Heathrow Airport because of its location. For example, companies engaging in importing and exporting find this a convenient location. In addition there is a range of hotels, and taxi firms who benefit from the international flow of passengers. Additionally security and aircraft maintenance firms have located there.