

PAINTS AND
COATINGS
SKILL COUNCIL



Participant Handbook

Sector
Paints and Coatings

Sub-Sector
Application

Occupation
Decorative Application

Reference ID: **PCS/Q5006, Version 1.0**
NSQF Level 3



**Assistant Decorative
Painter**

Published by

**PAINTS AND
COATINGS
SKILL COUNCIL**



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Shri Narendra Modi
Prime Minister of India

“ Skilling is building a better India.
If we have to move India towards
development then Skill Development
should be our mission. ”



PAINTS AND
COATINGS
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Complying to National Occupational Standards of

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We would also like to acknowledge here the long hours spent by our colleagues in editing and improving the drafts to make the final work more reader friendly and compact.

Paints and Coatings Skill Council

About this book

This Participant Handbook is designed to train participants for the job 'Assistant Decorative Painter', a NSQF approved level 3 qualification covered by QP reference no. PCS/Q5006.

The job involves supporting the painter in preparation and application of paints and related materials on various substrates like interior and exterior walls of buildings, metal/ wood frames of doors and windows, metal/ wooden furniture.

This QP consists of 6 NOS, each dealt under a separate unit as follows

1. PCS/N5016 Support preparation and application of paint to masonry surface.
2. PCS /N5017 Support preparation and application paint to metal surface.
3. PCS/N5018 Assist in preparation and painting of paint, varnish and polish on wooden surfaces.
4. PCS/N9901 Coordinate with colleagues and/or Customers.
5. PCS/N9902 Maintain standards of product/service quality.
6. PCS/N9903 Maintain Occupational, Health and Safety standards and follow environmental norms.

Symbols Used



Key Learning Outcomes

The key learning outcomes are listed at the beginning of each module. These outline the focus areas that the learners will cover in every module.



Tips

Wherever possible, tips are included in every module. They provide additional insight to learners on a particular topic being discussed.



Steps

These provide step-by-step instructions for a specific process.



Notes

Notes at the end of each module is a space for learners to list down their key points related to the topic.



Summarize

These provide the summary or the takeaways of the unit.



Unit Objectives

These are listed at the beginning of each unit under every module. They highlight the focus areas that the learners will cover in every unit.

6 Employability and Entrepreneurship Skills 101

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PAINTS AND COATINGS SKILL COUNCIL



1. Introduction

- Unit 1.1 - About Paints and Coatings Sector in India
- Unit 1.2 - Classification of Paints and the Coatings Industry
- Unit 1.3 - Basics of Paint Chemistry and Paint Manufacture
- Unit 1.4 - Colour
- Unit 1.5 - Colour Standards
- Unit 1.6 - Types of Finish
- Unit 1.7 - Gloss Measurement
- Unit 1.8 - What are Decorative Paints?
- Unit 1.9 - Job Role of an Assistant Decorative Painter



Key Learning Outcomes



At the end of this module, you will be able to:

1. Discuss the paints and coatings sector in India, and its sub-sectors
2. What is paint and how it is made?
3. Name different types of paints and their characteristics.
4. Mix and prepare the paint by mixing the base, hardner (if recommended) and thinner as recommended by the manufacturer.
5. Assist in estimating the time, material and equipment required.
6. Importance of colours and standards for colour.
7. Gain in-depth knowledge about finish and types of finish
8. Describe the role and responsibilities as an Assistant Decorative Painter.
9. Demonstrate how to apply the paint on the prepared surface, using either brush/roller or spray.

UNIT 1.1 About Paints and Coatings Sector in India

Unit Objectives



At the end of this unit, you will be able to:

1. Explain what paints and coatings are
2. Describe the purpose behind the use of paints

1.1 About Paints and Coatings Sector in India

Paints are present all around us. Wherever we look we see paint in some form – on walls, doors, floors, furniture, fans, cell phones, gas cylinders, cars, computers and laptops, motorcycles and scooters, trains and buses, shop signage and road signs, bridges, electric poles, pipelines—the list goes on. As you see, there are very few articles or items that we see or use in our daily lives that do not carry some coating or the other. You will be surprised to know that even metal cans that are used to pack food and beverages, glass bottles carrying soft drinks and other products, metal tips of shoe laces, door knobs and handles, airport runways and factory rooftops, aeroplanes and ships – all have coatings applied on them for protection, indication or decoration. The paint industry adds so much colour and convenience to our everyday lives that it would be difficult to imagine a world without it! As you look around and see the universal presence of coatings everywhere, you would also realise that the paint and coatings field is quite complex.

What is the purpose behind the use of paints? Decoration is certainly one important reason why paints are used. They lend colour and beauty to objects on which they are applied and greatly increase their visual appeal. An equally important reason for the use of paints is protection. The life of products, especially those made of metal or wood is enhanced if an appropriate coating is applied on them. The universal use of iron and steel on various industrial and household products would be unthinkable in the absence of coatings to protect them. Likewise, Wooden furniture and articles are known to last centuries if they are protected by regular application of coatings on them. Our ancestors understood this, which explains why varnishes and lacquers are as old as civilisation itself.

Coatings are also used for “indication”. All of us are aware that red is a colour used to indicate danger or fire and hence fire tenders, stop signs and caution/danger signals are invariably painted red. Ambulances and hospital furniture are always painted white while school buses are yellow. You will find that paints help to identify and make life convenient for us. White road marking, red post boxes, green park fencing, black and yellow taxis and auto rickshaws – one can think of many such examples.

Paints also help to improve cleanliness and hygiene. Coatings with antifungal properties help to keep walls in homes and buildings free from fungus especially in damp weather. Coatings used in food cans prevent the contents from spoiling and serve as a protective barrier. Coatings can even help retard fire or enhance the protection against fire. Thus, there are many uses for paints and coatings in our everyday life.

While the common person sees it as being colourful with a great deal of variety, to the technical people formulating and making paint and to those who apply it on surfaces, it is a complex world—of different chemistries and technologies, of a range of demanding and often conflicting requirements of many application challenges and steadily increasing customer expectations.



Exterior Wall



Bus



Commercial Vehicle



Road Marking



Wood Polishing



Motorcycle



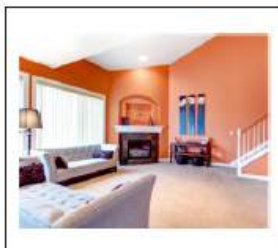
Runway



Aeroplane



Bicycle



Interior Wall



Car



Household Appliances

Fig 1.1: Paints are used everywhere

Notes



UNIT 1.2 Classification of Paints and the Coatings Industry

Unit Objectives

At the end of this unit, you will be able to:

1. List different types of paints

Broadly, paints are of two types, viz. decorative and industrial.

Decorative paints consist mainly of products that go on interiors and exteriors of buildings as well as on furniture items to make them look aesthetically pleasing. Industrial paints include a wide variety and are further classified under various subgroups, such as Automotive OE, Automotive Refinish, Powder Coatings, General Industrial, Coil Coatings, Protective and Marine Coatings, Packaging Coatings etc.

Decorative	Industrial
Building Exteriors	Automotive OE Finish
Building Interiors	Automotive Refinish
Furniture	Powder Coatings
	General Industrial Paints
	Coil Coatings
	Protective Coatings
	Marine Coatings
	Packaging Coatings

Notes

UNIT 1.3 Basics of Paint Chemistry and Paint Manufacture

Unit Objectives

At the end of this unit, you will be able to:

1. Talk about the components of paint and their types
2. Explain characteristics of resins/binders used for paints.
3. Explain different paint systems and their features or characteristics

1.3.1 Components of Paints and Coatings

The success of any coating depends on its nature, chemical composition, the physical condition of the substrate and application techniques. The compositions vary considerably depending on the end applications, economics and the durability expectations of the coated components. A typical paint product is a homogenous mixture of pigments, extenders, resins or binders, additives and solvents.

Pigments: Pigments are powder material insoluble in resin, water, or solvents and impart colour and opacity (hiding power) to the paint. They may be organic or inorganic. Combinations of different coloured pigments give a variety of other colours. In metallic colours, aluminium / other metal pigments and effect pigments (pearl mica) are used to impart sparkling / metallic effect.



Fig 1.3.1 (i): Colour pigments



Fig 1.3.1 (ii): White pigment

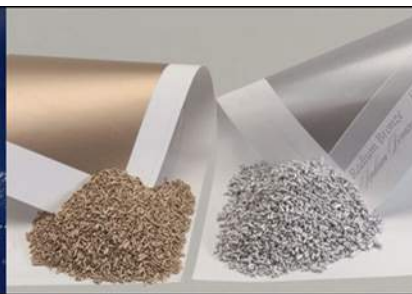


Fig 1.3.1 (iii): Metallic pigments



Fig 1.3.1 (iv): Extender

Extenders: Extenders are economical minerals added to increase the pigment content of the paint and contain the cost. They give filling properties, increase bulk volume and add certain desired properties to the paint. Calcium carbonate is a typical extender.

Resins or Binders: Resins are prepared by a chemical process called polymerisation. The resin helps to bind the pigment particles together and hence it is also called a binder. It is a major ingredient of any paint and is responsible for the film formation in a paint. The paint performance depends mainly

on the type and quality of resin. Different resins are used in paints depending on the end use. Resins may be solvent based or water based.



Fig 1.3.1 (v): Resins used in coatings

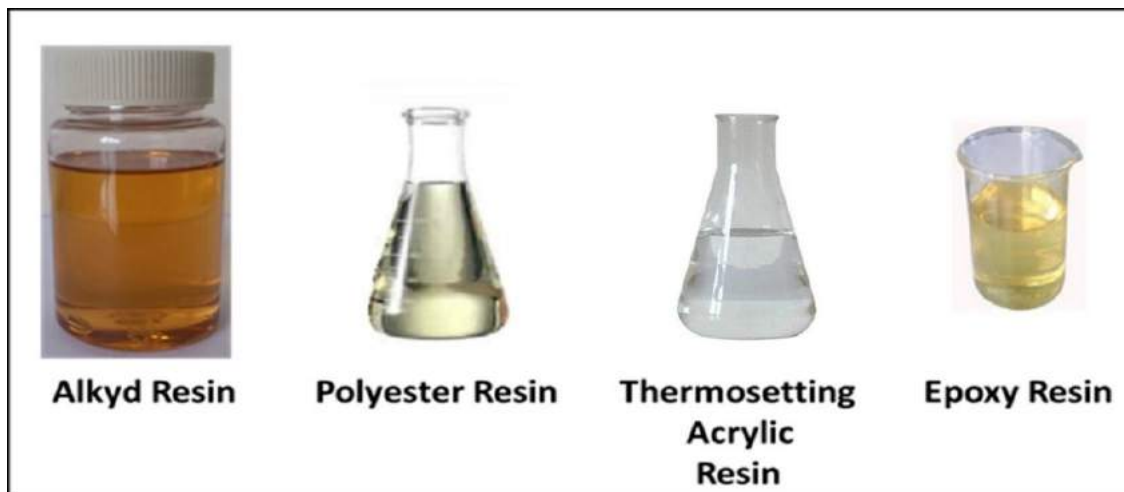


Fig 1.3.1 (vi): Types of resins

Additives: Additives are used in small quantities for enhancing certain desired properties like pigment wetting and dispersion, ease of application, flow and levelling, drying, curing, UV resistance, colour stability etc. In general, additives upgrade the performance properties of paint. Examples – anti-settling agent, anti-skinning agent, anti-sag agent, flow modifier, adhesion promoter, de-foamer, wetting agent, driers, matting agents etc.



Fig 1.3.1 (vii): Additives in liquid and powder form

Solvents: These are liquids used to reduce the viscosity of paint so that it can be easily applied on the surface. Solvents can be classified as aliphatic (mineral turpentine), aromatic (xylene, toluene), alcohols, ketones and esters. For water-based products, water is the solvent.

A solvent may be a true solvent, co-solvent or a diluent. Different solvents have different ability to dissolve resin. A solvent that dissolves a resin is the true solvent for that resin. Co-solvent dissolves the resin in the presence of the true solvent. A diluent is used only to reduce the viscosity. There are fast evaporating, medium evaporating and slow evaporating solvents. Generally, a combination of different solvents is used to achieve the desired film performance.

Powder coating, which is paint in a dry powder form, does not require any solvent during manufacture or application. As we shall see in the next sections, the manufacturing process for powder coating differs from that of liquid paints. The equipment used for powder manufacture are also different.

1.3.2 Characteristics of Different Resins

As we have already seen, resin is a major ingredient in paint and is responsible for making the paint into a film. There are different types of resins that can be used to make paint. It is important to understand the characteristics of each resin type as they determine the properties of the final paint.

TYPE OF RESIN	CHARACTERISTICS
ALKYDS	Alkyds are economical resins, mainly used in architectural paints. Enamel or oil paint is based on this resin. Technically, an alkyd is an oil modified polyester. By adding driers (special additive) these paints are made air-drying type. Paint film formation takes place at room temperature.
POLYESTERS	These resins are superior to alkyd resins in performance. They are mainly used in automotive/general industrial paints and powder coatings.
ACRYLICS	These resins have good durability against ultraviolet rays. They are mainly used in automotive clear coats, base coats and mono coats.
EPOXIES	Epoxies have good corrosion resistance, chemical resistance and water resistance properties. They are used mainly in protective coatings. These paints are supplied as base and hardener packed in separate containers. Such paints are called two pack (2K) paints.
AMINO	These are melamine formaldehyde (MF) or urea formaldehyde (UF) resins used for curing and achieving hardness of the paint film. These resins crosslink with alkyd, polyester, epoxy resins and give excellent toughness. This reaction starts at high temperature (above 120° C). Hence, such paints are supplied as one pack (1K) paint. MF resin is widely used in automotive paints.
ISOCYANATE	This hardener reacts with alkyd, polyesters and acrylic resins to form Polyurethane coatings. The crosslinking reaction between the -OH of the resins and -NCO of the isocyanate hardener starts at room temperature, once the two are mixed. Hence these paints are supplied as 2K (base and hardener) packed in separate containers.

UNIT 1.4 Colour

Unit Objectives



At the end of this unit, you will be able to:

1. Explain the concept of colour
2. Talk about different categories of colour
3. Discuss how we perceive colour

1.4.1 Colour Concepts

When we speak of paints, the first thought that comes to our mind is that of colour. We always associate paints with colour. We see the colour of an object when light falls on it and gets reflected. In darkness, we see no colour. Similarly, under different light sources such as sunlight, fluorescent light or sodium vapour street lights the same object will appear different in colour. So the colour that we perceive depends on the light source. When we speak of colour, we normally refer to what is seen in day light. The colour of an object that we perceive changes with the light source.

Colours can be classified as follows:

Primary colours

- Red, yellow and blue are called primary colours.
- They cannot be obtained by mixing together other colours.

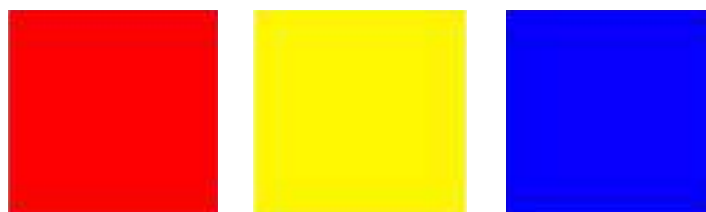


Fig 1.4.1 (i): Primary colours

Secondary colours

- Orange, green and violet are called secondary colours.
- They are obtained by mixing in equal amounts two adjoining primaries.



Fig 1.4.1 (ii): Secondary colours

Mixing of colours

- Yellow + Blue = Green
- Red + Yellow = Orange
- Blue + Red = Violet

Mixing Colours

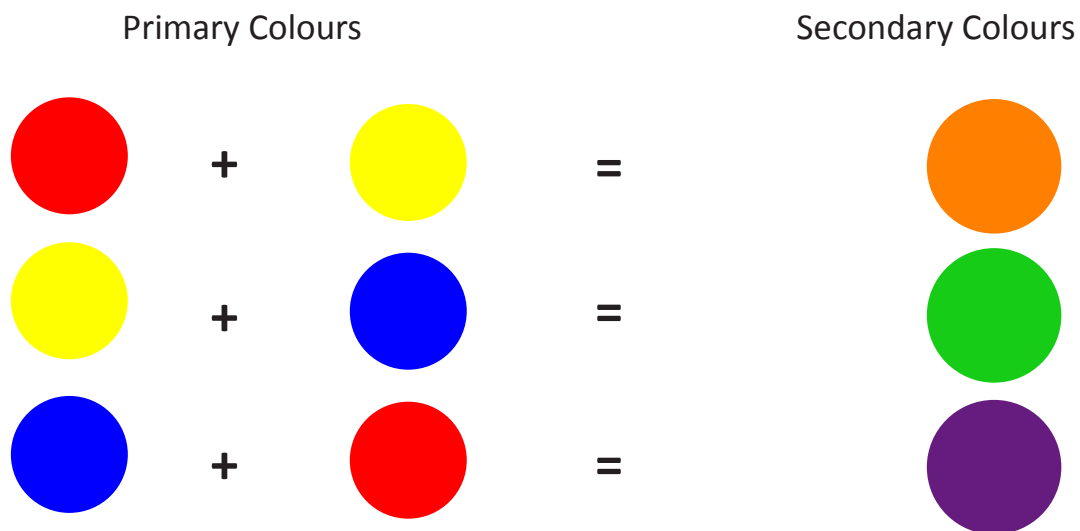


Fig 1.4.1 (iii): Mixing of colours

Intermediary colours

When the primaries are not mixed in equal amounts, intermediary colours are formed, such as yellow-green (chartreuse), green-yellow (apple green), etc.

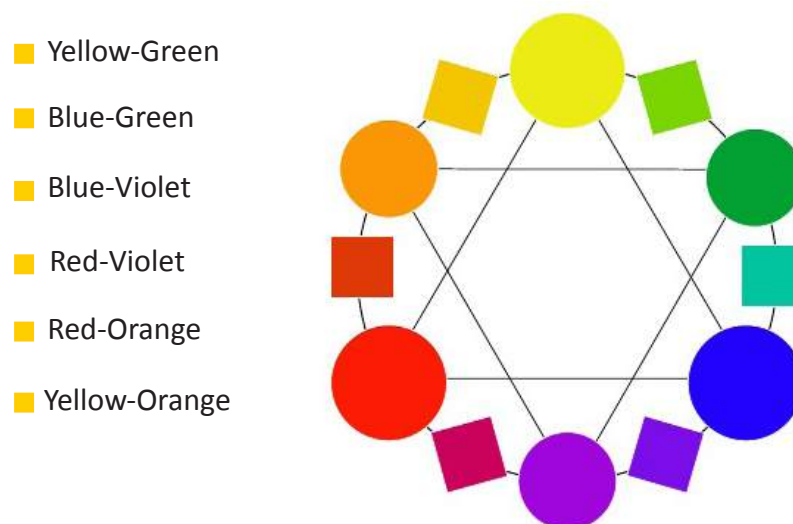


Fig 1.4.1 (iv): Intermediary colours (pinsdaddy.com)

Tertiary Colours: Tertiary colours are obtained by mixing two secondary colours, such as orange with green (olive), green with violet (slate) or violet with orange (russet).



Fig 1.4.1 (v): Tertiary colours (firstascenddesign.com)

Complimentary Colours: Colours that appear opposite each other on the colour wheel are called complimentary colours. Complimentary colours include: red and green, yellow and blue etc. A complimentary colour is often used to reduce the chroma (brightness or intensity) of its opposite. When two complimentary colours are mixed in equal parts, although theoretically they should produce black, they produce neutral a greyish dark brown.

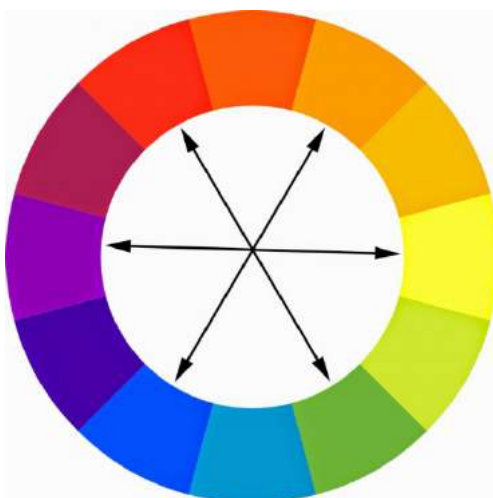


Fig 1.4.1 (vi): Complimentary colours (copicmarkertutorials.com)

	Warm Colours	Cool Colours
HUES	Reds Yellows Oranges Red violets	Blues Blue-greens Blue-violets
NATURE	Vivid, bold	Calming, soothing
USUALLY DEPICT	Sun, fire, heat, warnings	Water/water bodies, cold environs, freshness

UNIT 1.5 Colour Standards

Unit Objectives

At the end of this unit, you will be able to:

1. Explain what are colour standards and why they are useful



Fig 1.5: RAL shade card

RAL is used for information defining standard colours for paint and coatings. It is the most popular central European Colour Standard used today. The colours are used in architecture, industry and road safety. The human eye distinguishes about ten million colour shades. How can we tell exactly which colour we mean? With the use of RAL colour charts!

Since 1927, RAL has created a uniform language when it comes to colour. It has standardised, numbered and named the abundance of colours. These standards are easily understandable and applicable - worldwide. Some example colours from the RAL colour chart are mentioned below. The first digit relates to the shade of the colour:

1xxx Yellow RAL 1000	Green Beige - RAL 1034 Pastel Yellow (27)
2xxx Orange RAL 2000	Yellow Orange - RAL 2012 Salmon Orange (12)
3xxx Red RAL 3000	Flame Red - RAL 3031 Orient Red (22)
4xxx Violet RAL 4001	Red Lilac - RAL 4010 Telemagenta (10)
5xxx Blue RAL 5000	Violet Blue - RAL 5024 Pastel Blue (23)
6xxx Green RAL 6000	Patina Green - RAL 6034 Pastel Turquoise (32)
7xxx Grey RAL 7000	Squirrel Grey - RAL 7047 Telegrey 4 (37)
8xxx Brown RAL 8000	Green Brown - RAL 8028 Terra Brown (19)
9xxx White/Black RAL 9001	Cream - RAL 9018 Papyrus White (12)

UNIT 1.6 Types of Finish

Unit Objectives



At the end of this unit, you will be able to:

1. Explain finish
2. List different types of finishes commonly used

Besides colour there are two other aspects describing the appearance of a finish that you will come across – ‘Gloss’ and ‘Type of finish’. Gloss refers to the shine in the paint film. A high gloss surface appears mirror like whereas a matt finish is dull or flat. The gloss level is expressed as percentage of the light that is reflected from a surface in a mirror like fashion. Since the extent of reflection also depends on the angle at which the surface is held, gloss level is measured and expressed as a value at a specific angle.

FINISH	GLOSS LEVEL
Dead Matt	0-15%
Matt	15-30%
Egg Shell Matt	30-45%
Satin	45-60%
Semi Glossy	60-75%
Glossy	75-90%
High Gloss	90% +

Type of finish refers to the texture or the visual feel of the finish. Examples of common types of finish are illustrated below.



Fig 1.6 (i): Gloss, semi-gloss and matt finish

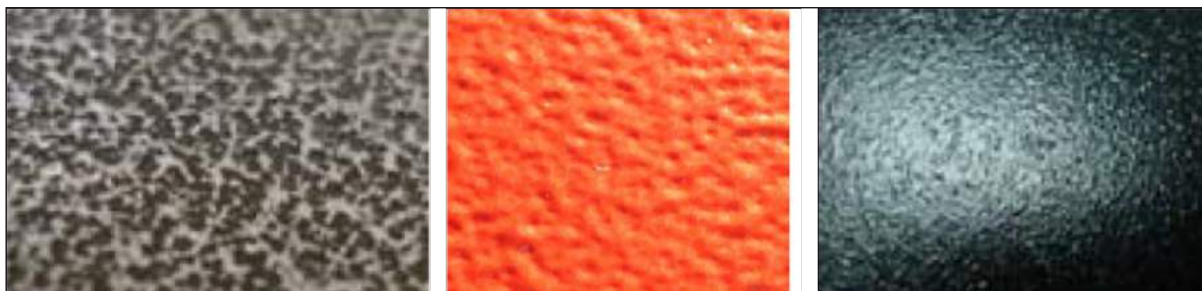


Fig 1.6 (ii): Hammer tone finish, structure finish and coarse texture

UNIT 1.7 Gloss Measurement

Unit Objectives

At the end of this unit, you will be able to:

1. Explain gloss and its measurement
2. Describe how gloss value is expressed

- Gloss is measured by a gloss meter at different angles
- Gloss reading depends on the angle at which it is measured. So, gloss is always expressed as a percentage at an angle (e.g.: 60% at 20°)
- An angle of 60° is most common in the coating industry. Usually recommended for medium gloss levels
- An angle of 20° is used to achieve a more differentiated result of high gloss surfaces usually recommended for Automotive class “A” finish using liquid coatings
- An angle of 85° is used to achieve a more differentiated result of low gloss surfaces, not so popular in coating industry

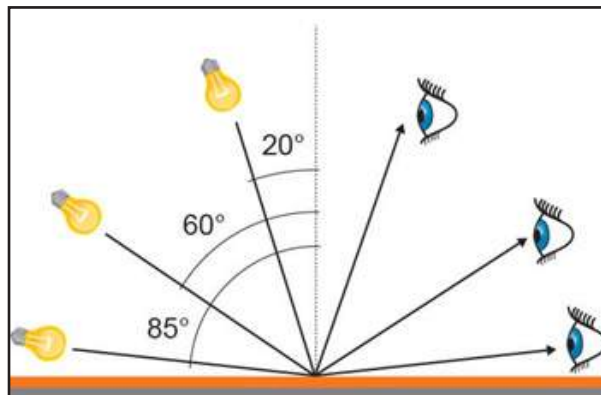


Fig 1.7: Reading gloss at different angles



Fig. 1.7.1: Digital Gloss meter

UNIT 1.8 What are Decorative Paints?

Unit Objectives



At the end of this unit, you will be able to:

1. Describe what are decorative paints
2. Discuss different forms of decorative paints
3. Explain the differences between types of decorative paints

Decorative Paints comprises interior wall paint, exterior wall paint, wood finishes, enamels and ancillary products such as primers, putty, etc. In the decorative paints segment, a good part of the demand comes from household painting. One salient feature of this segment is that the demand peaks during festive seasons. Decorative paints account for 75% of the Indian paint market. Application plays a very important part in the quality, appearance and performance of paints. Given that 75% of the paint demand is in the decorative segment and this segment is projected to grow in the years ahead, the opportunities for decorative painters is large and growing. Apart from general painters who do painting of masonry, metal and wooden surfaces, there are specialists in wood finishes who polish and spray paint wooden surfaces, specialists who do textured finishes and so on. There is a great demand for skilled, professional painters and it is growing.

Several established paint companies are now offering painting services to their customers and therefore, opportunities in established companies for painters is growing fast. This will mean professional growth from painters to supervisors and managers of projects.



Fig 1.8: A well painted wall (associatedpaints.com)

Notes



1.8.1 Forms of Decorative Paints

LIQUID PAINTS	PASTE	POWDER
<ul style="list-style-type: none"> Liquid paints, most common form of paints, may be either solvent thinnable or water thinnable. Examples of solvent thinnable paints are Enamels, Solvent based primers and Varnishes. Examples of water thinnable paints are interior and exterior emulsions and water-based primers. 	<ul style="list-style-type: none"> Some economy paints are supplied in a thick paste like consistency. Example is Distempers. These are diluted to the required consistency prior to painting. Putty is also in paste form and is used to fill cracks or dents in the surface. 	<ul style="list-style-type: none"> In decorative paints, Cement Paints are supplied in powder form. This is mixed with water and converted to a liquid paint and then applied on the surface.



Fig 1.8.1: Liquid paints and powder paints (durgambasuppliers.net, bakerross.co.uk)

1.8.2 Types of Decorative Paints

WATER THINNABLE PAINTS	SOLVENT THINNABLE PAINTS
Emulsions	Enamels
Distempers	Varnishes
Cement paints (These are generally supplied in powder form and mixed with water for application)	

- Emulsions** are water-based paints and can be used for interior or exterior application. Exterior emulsions are specially fortified for protection against UV rays and to withstand direct rainfall on the surface. This is achieved by adding certain additives to the emulsion paints. In interior emulsions there are several types available: (a) matt finish (b) silk (c) lustre or pearlescent finish. The difference in these different types of emulsions is varying levels of gloss and in the case of pearlescent finish additives to give a metallic feel. All this is achieved by adding special additives.

UNIT 1.9 Job Role of an Assistant Decorative Painter

Unit Objectives



At the end of this unit, you will be able to:

1. Clearly state different aspects of an assistant decorative painter's job

An Assistant Decorative painter is a person who supports the painter in surface preparation and application of paints on masonry, wood and metal surfaces. Performance of paints depends on three factors: the quality of the paint in the can; the surface preparation and the paint application. Any shortfall in any one of three will result in a less than good paint performance and hence an unhappy customer. The assistant decorative painter's main role is to effectively assist the painter to manage these three factors to deliver a satisfactory paint performance. For a household customer the key concerns are quality, cost and time. So, a good assistant decorative painter will assist the decorative painter in not only delivering a quality paint job but also within the cost estimate provided to the customer. The Assistant Decorative Painter also needs to understand the time frames to complete the job and assist the painter to complete the whole job as estimated. Completing the job within the agreed time frame enhances the overall experience of the customer is good and favourable for getting future business.

Due to rapid economic growth in India, income levels of people are rising. This is leading to higher spending on home maintenance and decoration. A number of new buildings are also being constructed to meet the needs of employed persons with good income levels. These factors are contributing to a rapid rise in decorative painting jobs. Therefore, the future for a person skilled in this field is very good.



Fig 1.9: Special effects on interior walls (classic.mouldings.com, diynetwork.com, archiexpo.com)

2. Support Preparation and Application of Paint to Masonry Surface, Metal Surface and Wooden Surface

**PAINTS AND
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- Unit 2.1 - Assist Supervisor/ Painter in Measuring the Painting Area and Estimating the Material Requirement
- Unit 2.2 - Cleaning and Sanding the Surface
- Unit 2.3 - Types of Primers
- Unit 2.4 - Application of Paint



**Applicable NOS – PCS/N5016,
PCS/N5017, PCS/N5018**

Key Learning Outcomes



At the end of this module, you will be able to:

1. List the measurements to be carried out to calculate the area to be painted.
2. Explain the different cleaning and surface preparation steps for interior and exterior masonry surfaces, metal surfaces and wooden surfaces.
3. Identify the different types of primers and topcoats. Define the criteria for selection of the primer and topcoat for a given substrate.
4. Describe the method of application for the selected primer/ topcoat and substrate.
5. List the criteria for selection of an application tool
6. Identify the different application tools, it's maintenance, cleaning and storage.

UNIT 2.1 Assist Supervisor/Painter in Measuring the Painting Area and Estimating the Material Requirement

Unit Objectives

At the end of this unit, you will be able to:

1. Explain how to measure the painting area.



Fig 2.1 (i): (saharanpurweb.in)

A careful estimation of time and manpower required to complete the job. It is based on the following:

1. The total area to be painted:
 - Interior walls
 - Ceiling
 - Doors
 - Windows
 - Exterior walls
 - Any other surface to be painted
2. The quality and condition of the surface
3. The painting system being applied – complete system or over coating
4. The number of painters/assistant painters/helpers required to meet the customer's timelines
5. Customer's preferred painting sequence

To estimate the material required, the area to be painted needs to be measured/ estimated.

For estimating masonry paint requirement, the following thumb rule may be used:

$$\text{Total wall area} = (\text{length} + \text{breadth} \times 2) \times \text{Height} - \text{total area of windows and doors}$$

Example:

Let us take a room of 12ft × 15ft and height from floor to ceiling is 8ft. The room has two windows 4ft × 3ft each and a door 6ft × 3ft.

$$\text{Wall painting} = (12\text{ft} + 15\text{ft}) \times 2 = 54\text{ft.}$$

$$54 \times 8 \text{ (Height)} = 432 \text{ ft.}$$

$$\text{Less door and windows} : 432 - 42 = 390 \text{ sq. ft.}$$

$$\text{Ceiling area to be painted} = 12 \times 15 = 180 \text{ sq. ft.}$$

$$\text{Windows} = 4 \times 3 = 12.$$

$$\text{Two windows} \quad 12 \times 2 = 24 \text{ ft.}$$

$$\text{Door} = 6 \times 3 = 18 \text{ ft.}$$

$$\text{Total doors and windows} = 42 \text{ sq. ft.}$$



Fig 2.1 (ii): clipart-library.com

The material requirement is worked out based on these surface area measurements.

For example: If the emulsion paint for walls covers 100 sq ft / litre per coat you will need approximately 8 litres for a two-coat job. Similarly, based on the covering capacity of the product, as given by the manufacturer in their product data sheets, the experience of the supervisor/ painter and the condition of the surface, an estimate of the total material requirement – putty, primer, brushes, rollers, putty blades, thinners for enamels, sand papers, emery paper, cleaning cloth, masking tape and so on, for all types of substrate to be painted, is arrived at.

Practical Activity

To estimate the material required, the area to be painted needs to be measured practically/estimated.

Measure the area of the wall using a measuring tape.

UNIT 2.2 Cleaning and Sanding the Surface

Applicable NOS – PCS/N5017

Unit Objectives

At the end of this unit, you will be able to:

1. Examine the condition of the surface and estimate the cleaning requirements.
2. Identify the appropriate cleaning method, available cleaning machines and its use.
3. Distinguish between different grades and quality of sand paper and its use.
4. Discuss the use of sanding machines and its advantages.
5. Explain the different methods of surface preparation based on the substrate
6. Carry out masking

Surfaces must be prepared before paint is applied. The objective of surface preparation is to ensure adhesion of the paint coats to the surface. Adhesion becomes an even more critical condition when paint is applied over metal substrates in corrosive area. Modern day paints require a clean and roughened surface to achieve long term durability. Inspection for surface cleanliness is a continuous process and should take place at least 3 times during the painting process.

- Before any surface preparation activity
- After surface preparation, before coating begins
- Between each application of coating in a multi-coat system

Surface preparation is the essential first stage treatment of a surface before the application of any paint. It is generally accepted as being the most important factor affecting the total success of a paint system. The performance of paint is significantly influenced by its ability to adhere properly to the surface. It includes assessment and inspection of surface condition, including surface defects and removing

- Dirt, dust and loose particles
- Fungus, mildew, algae growth
- Residues of oil, grease and soil
- Residues of (nonvisible) soluble salts, which can induce blistering, flaking and corrosion under the coating
- Rust on the surface, which interferes with the coating bonding
- Loose or broken mill scale resulting in early coating failure and tight mill scale resulting in later failure
- Anchor pattern (formed by surface preparation actions) – sharp ridges, burrs, edges, or cuts from Mechanical cleaning equipment, which prevent adequate thickness of coatings over the irregularities
- Surface condensation which, if painted over, may result in blistering and delamination failure
- Old paint that may have poor adhesion or may be too deteriorated for recoating

Adequate cleaning of masonry and concrete, mild steel, aluminium and wood surfaces is essential to achieve proper performance of the selected paint system. The nature and condition of the surface to be prepared and painted affects the degree of surface preparation required. A severe service environment - marine or chemical - normally requires a higher degree of cleanliness to ensure good performance of the paint system. A milder service environment—with less pollution—will allow better performance of the same paint system or the same performance when applied to a lesser degree of surface preparation.

There is a large variety of cleaning machines available in the market. From simple household vacuum cleaners to heavy duty steam cleaners to clean masonry surfaces.



Fig 2.2 (i): Wall steam cleaning machine and pressure washing a brick wall

For thorough and simple cleaning there are cleaning machines with scrubbers (thick brushes) mounted on a rotary wheel. These scrubbers thoroughly clean the wall and suck in the dust into a dust bag. Thus, the working space remains dust free and workers do not suffer the discomfort of dust inhalation. At the other end, there are high pressure water washers mainly used for exterior surfaces. These high-pressure washers have a motor, water pump, pressure hose and a trigger switch. These washers mostly operate with gas or compressed air as power source. Use of electric motors is not practical while cleaning exterior surfaces. The high-pressure water washers are hazardous equipment and need to be used with extreme care. They can cause serious injury if directed on a person and can damage the surface if the nozzle is closer than the specified distance.

Techniques available for surface preparation include:

- Sanding – for all substrates
- Solvent cleaning – mainly for metal substrates
- Hand tool cleaning – mainly for metal substrates
- Power tool cleaning – for metal and wooden substrates
- Flame cleaning – for metal and plastic substrates
- Acid pickling – for metal substrates

- Blast cleaning, using shot or grit – for metal and exterior masonry walls
- Water jetting, using water only – for masonry and metal substrates
- Wet abrasive blasting, using water with injected abrasives – for metal substrates
- Chemical pre-treatment – for metal substrates

Sanding: For sanding the most commonly used abrasive material is sand paper. Sanding can be done either manually or with electrically operated equipment.

DIFFERENT TYPES OF SAND PAPER	
Aluminium Oxide	Used mainly for wood and metals and is a hard-synthetic abrasive
Silicon Carbide	Used for masonry surfaces and between coats of paints
Emery	Natural abrasive with fine grains and used on metals
Garnet	Natural abrasive used for bare wood

Sandpaper is available as paper sheets, backed by cloth and disks. It is graded on the coarseness; the lower grade is coarse and as the number goes higher the coarseness reduces and the grains get finer. So, it is important to choose the right sanding paper to achieve best results in surface preparation.



Fig 2.2 (ii): Metal, wood and wall sanding

Metal surface sanding: Use emery paper (No.150) to thoroughly sand the surface. After thorough sanding of the surface use mineral turpentine to clean the surface of dust and loose particles. NOTE: Wait for the surface to completely dry.

Wooden surface sanding: While sanding wooden surfaces care must be taken to sand along the grains and not across. Wooden surfaces must be sanded in phases – changing the coarseness of the sand paper from coarse to medium. (60/80/100/120)

Wall sanding: Masonry surfaces and previously painted wall surfaces must be sanded using a coarse silicon carbide sandpaper (No.80) and finally must be sanded using a fine grade of sand paper like 180, 220 etc.

Note: At regular intervals, dust the surface and fold the sand paper for a newer sanding side; replace the sandpaper when the grains have worn off.

Traditionally sanding the surface, whether masonry, wood or metal, has been a tedious manual process. It is a time-consuming process and especially difficult in large expanse of surface. Technology has come up with a solution in the form of the electric or pneumatic sander which is efficient, fast and ensures uniformity.

Electric sanders have an important added benefit of dust extraction as part of the sanding system. Sanders are basically power tools with abrasives attached and are powered either by electricity or compressed air. There are several types of electric sanders to suit different surface requirements.



Fig 2.2 (iii): Wall sanding with electric sander (doityourself.com)

The key components of an electric sander are:

1. **Sanding disc:** Sanding discs are abrasives on a paper / cloth or other synthetic material and come in different sizes (diameters) and also in different sizes of grit (grains sizes). Sanding discs come with velcro to be fixed to the rotating wheel. The discs have holes in them to collect the dust produced by the sanding process.
2. **Electric motor:** The electric sander has a 1.2 KV electric motor to power the disc and the dust collector.
3. **Dust collector:** Like a vacuum cleaner, the electric sander sucks all the dust generated by the sanding through the holes in the disc into a dust bag.
4. **Handle:** Handles come in different shapes to suit customer preferences. The most common are the palm grip and long handle. Electric sanders also come with D handles.
5. **Trigger switch:** The trigger switch is to switch on or off the rotating disc. Some sanders also have speed control radials to change the speed of the sanding.

2.2.1 Types of Electric Sanders

There are several types of electric sanders to suit every requirement. However, the three most popular types are:

- Belt sander
- Orbital sander
- Random orbit sander



Fig 2.2.1 (i): Orbital sander, belt sander and random orbit sander

An orbital sander is a sanding device most commonly used for sanding wood. An orbital sander comprises a motor that powers a rotating wheel. Sanding discs are attached to the sanding wheel. The orbital sander can be used freely on wood without worrying about the grain direction. Some orbital sanders also come with a dust collector to collect the fine wooden dust.

A belt sander is most commonly used on wooden surface. Belt sander is very effective and suited for flat surface. A flat belt, in a continuous loop, runs on two roller drums. The belt is made of abrasive cloth material. While using a belt sander care must be taken not to apply too much pressure as this will choke the sander with the dust.

A random orbit sander is a superior version of the orbital sander. The discs rotate and also move in an elliptical fashion. This eliminates swirl marks.

Apart from these there are several other sanders for different surfaces and applications. For example, there are table top drum sanders, detail sanders, floor sanders, stroke sanders and so on.

Because of the high-speed action and rugged discs, loose particles and dust tend to fly fast and can cause injuries to the eyes. Therefore, protective gear especially protective eye wear is a must while machine sanding. Similarly, it is important to be familiar with the sanding machine operation especially how the abrasives are fixed to the wheel before using the sanding machine.

Solvent Cleaning: For simple oil or grease stains in walls, cleaning with vinegar or soap solution is sufficient. For stronger and stubborn stains, especially on metal surfaces, chemicals are available to clean the surface.



Fig 2.2.1 (ii): Solvent cleaning with a soft swab



Fig 2.2.1 (iii): Use of alkaline cleaners

Chemical paint stripping: Solvents such as kerosene, turpentine, naphtha, mineral spirits, xylol, etc., clean the metal by dissolving and diluting the oil and grease contamination on the surface. Inorganic materials such as chlorides, sulphates, weld flux, and mill scale are not removed by organic solvents. The last wash or rinse should be made using a clean solvent to remove the slight film of oil or grease that may be left on the surface. This film, if left in place, may interfere with the adhesion of the coating to the surface.



Fig 2.2.1 (iv): Hand cleaning

Hand and power tool cleaning: Hand tool cleaning is a method to prepare surfaces using non-powered hand tools. Hand tool cleaning removes all loose mill scale, rust, paint, and other detrimental foreign matter. Adherent mill scale, rust, and paint are not generally intended to be removed by this process. Mill scale, rust, and paint are considered adherent if they cannot be removed by lifting with a dull putty knife.



Fig 2.2.1 (v): Tools used in hand cleaning

Power tool cleaning: Power tool cleaning is a method of surface preparation using power assisted mechanical cleaning tools. These tools are essentially like the tools used for hand tool cleaning, but a power source, such as electricity or compressed air, is used. Power tools are ideal when the area of the surface to be prepared is very large. Power tool cleaning is frequently used in maintenance operations to remove loose mill scale, rust, and paint. Modern power tooling has been developed not only to achieve a good standard of surface cleanliness and profile but also to provide near total containment of all dust and debris generated. New equipment is now available to use percussive reciprocating needles, rotary abrasive coated flaps and right-angle grinders, all within a vacuum shroud to enable on-site surface preparation to be environmentally acceptable.

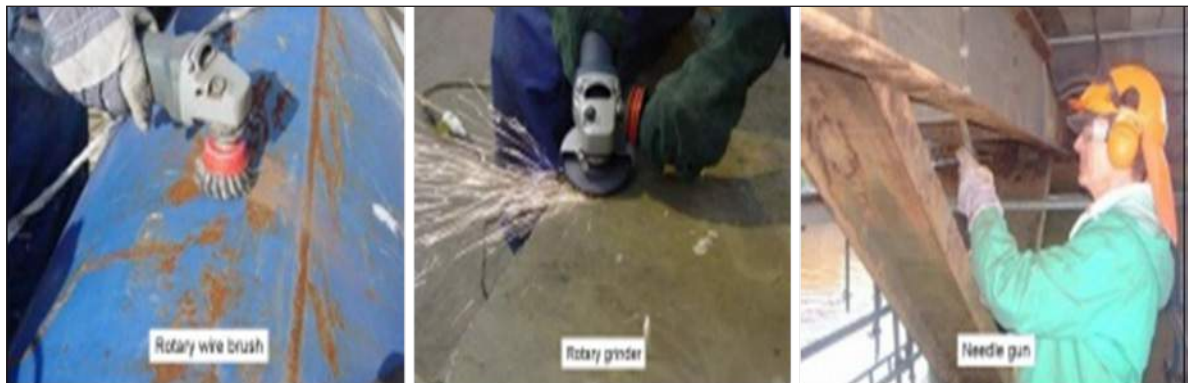


Fig 2.2.1 (vi): Rotary Wire Brush

Fig 2.2.1 (vii): Rotary Grinder

Fig 2.2.1 (viii): Needle Gun

Flame Cleaning: This method uses an oxy/gas flame that is passed over the steel surface. The sudden heating causes rust scales to flake off as a result of differential expansion between the scales and the steel surface. All loose rust can then be removed by scraping and wire brushing followed by dust

removal. Flame cleaning is not an economical method and may damage coatings on the reverse side of the surface being treated. Also, the technique is not very effective in removing all rust from steel, so it is rarely used.

Blast Cleaning: Sandblasting of concrete surface is resorted when the texture of the wall needs change or thorough removal of the previous paint system is required on a large area. Sandblasting is usually done on exterior walls. Blast cleaning is more often used for protective coatings and industrial applications.



Fig 2.2.1 (ix): Sand blasting interior wall (billtonnesen.com)

Normally high-pressure washers are preferred to sand blasting for households because there is every possibility that sandblasting can damage some intricate part of the house. However, it can be used for exterior walls when the area to be prepared is large.

Care must be taken that while sand blasting, proper protective equipment is worn to protect the eyes and to protect from inhaling the dust. So, eyewear and masks are mandatory.

Some of the methods of blast cleaning are:

- Centrifugal blasting
- Sand-injected water blast
- Slurry blast
- Wet abrasive blast
- Dry abrasive blast
- Dry grit blast cleaning

Practical Activity

Sanding – Sand the job using a sand paper.



Fig 2.2.1 (x): Manual abrasive blasting

The most generally established method of surface preparation for the application of coatings is by dry *grit blasting* as defined below. A highly-concentrated stream of small abrasive particles projected at a surface removing rust, mill scale, or other contaminants and creating a rough surface good for adhesion. The surface is abraded through the high-velocity impact of abrasive particles. In preparing surfaces for painting by blast cleaning, rust, mill scale, and old paint are removed along with some of the base surface.

Chemical Pretreatment: For previously unpainted metal surfaces, an alternative to mechanical surface preparation is chemical pretreatment. It prepares the surface and enhances the adhesion of the coating to the surface thus improving its resistance to corrosion. Pretreatment involves passing the job through multiple baths containing various chemicals for cleaning and treating the component. A phosphate coating is deposited on the metal to enhance corrosion protection and improve adhesion of the subsequent coating.

Other pretreatment methods

A three-in-one chemical combining degreasing and phosphating in a single chemical, is also being used. The performance in this case is not as good as a multi stage system. It is mainly used for repainting structures and components which cannot be pre-treated through a multi stage system.

Masking: It is done when only a specific area of the surface must be exposed to a process. Masking tapes, sheets are used to mask areas such as switch boards, metal work, borders, handles, etc. Old newspapers with masking tape attached at the edges is a cost-effective masking process for large areas. Parts of surfaces which are not to be coated are masked.

Masking is generally carried out for tubular components to prevent water/ chemical solution entering the component. The masking in this case is generally done using metal/ rubber/ plastic plugs.

Notes





Fig 2.2.1 (xi): Masking with tape (vancouver.sun.com and listinspired.com)



Fig 2.2.1 (xii): Masking with sheets (house-painting-info.com and prettyhandygirl.com)

Primer Application: For a good performance of the paint system, it is important to have a smooth and even surface. The surface should not have pores that will absorb paint. And the surface should provide good adhesion to the paint. All this is done by the primer. A good primer fills all surface imperfections and provides adhesion to the surface and to the finish coat. Application of paint without a primer coat can lead to performance problems such as cracking, peeling, flaking, etc.

Notes



UNIT 2.3 Types of Primers

Applicable NOS – PCS/N5018

Unit Objectives

At the end of this unit, you will be able to:

1. Differentiate between different primers available, it's characteristics and use.
2. Define "putty" and its application.
3. Prepare paint for application by mixing with appropriate thinners.

Solvent based primer: are the most commonly used primers for metal and wooden surfaces. For ferrous metal surfaces, red oxide primer is commonly used. Red oxide primer protects the surface from rust and corrosion. For Aluminium substrate, Zinc Chromate primers are used for adhesion and protection.

For wooden surfaces, specially formulated wood primers are available. Wood primers seal the pores in the wood and prevent resinous material from oozing out of the wood.

Wood Primers are available in two colours – White and Pink. Wood Primers are also thinned with mineral turpentine (MTO).

Solvent based primers are used for new masonry surfaces and have excellent alkali resistant properties. They effectively seal all the pores and provide good adhesion to the top coat. Care must be taken that the primer coat is fully dried before applying the finish coat. Solvent thinnable masonry primer is thinned with mineral turpentine (MTO).

There are higher grades of primers for metals depending on service atmospheric conditions such as red oxide zinc chrome primer, zinc rich primer, etc.

Water based primer: is thinned with water and extensively used for masonry surfaces, both interior and exterior. The primers are quick drying and offer the advantages of sealing pores, filling cracks and imperfections and providing adhesion. This coat is also used as an undercoat to achieve better opacity when the existing colour is dark and is being changed. Tinting the primer to the topcoat colour tone is also done to improve the opacity and colour of the topcoat. While painting on existing pre-painted surface which is clean, free of loose particles or flaking paint, primer coat application may not be necessary. However, it is still recommended to apply a primer coat to improve performance and durability of paint system.

The use of low VOC primers and/ or water-based primers for metal and wood is slowly increasing due to environmental protection awareness.

Primer application: The primer is normally applied using a brush. Spray application, using a spray gun, is sometimes followed for exterior wall painting, metal and wood primers. The Product/ Technical Data Sheet of the manufacturer generally mentions the thinning ratio and the recommended re-coating interval. Follow the instructions of the supervisor/ painter for thinning the primer and application. After each coat of primer application and drying, the surface needs to be sanded to achieve smoothness and an even surface. The sanded surface must be cleaned thoroughly and completely, with a moist cloth. Seek the supervisor's/ painter's approval before application of the next coat.



Fig 2.3 (i): Putty application

Putty application: Putty is an elastic material in a paste like consistency and is used as a filler to smoothen and level the surface. Ideally, putty is applied on a primed surface. The surface must be free of dirt, dust, loose particles and any kind of contamination.

The masonry surface may be lightly wetted prior to putty application for ease of application.

Putty is applied with a spatula, putty blade or trowel. Care must be taken not to apply very thick coat of putty as this will lead to several paint defects like cracking at a later stage.

Thin, even coat of putty is applied and left to dry for at least 12 hours (over-night). Putty must be applied in a bottom to top direction in even strokes. This method is to avoid material wastage and spillage. After the surface is levelled with putty, and the putty has completely dried, the surface must be sanded. All loose particles, dust, etc must be cleaned thoroughly, preferably with a moist cloth.

Mixing paint: After the surface is thoroughly cleaned, sanded, levelled with putty and primed with an appropriate primer, it is ready for application of the finish coat.



Fig 2.3 (ii): Stirrer

The paint in the can must be stirred well to ensure that it is a homogeneous mixture without any settling or lumps in it. Air drying solvent-based paints have a tendency of skin formation, if the container is not kept air-tight. This must be removed before mixing the paint. This stirring is a difficult and a long process manually. Mixing and stirring can be done efficiently and in lesser time with mixers

and stirrers which are electrically/ pneumatically powered. There is a vast array of stirrers and mixers to suit different volumes and consistency. There are specialised stirrers / mixers for putty. Stirrers are available as hand held devices and on a stand. The stirrers comprise an electric motor, a rotating rod and flat blades / spatulas attached to the rod. There are stirrers with varying speed.



Fig 2.3 (iii): Stirrer

While using stirring / mixing machine care must be taken to have the container covered or else the paint is likely to splash and spill. The normal practice is to make a hole through a piece of cardboard and have the rod go through it. The cardboard needs to cover the lid of the container and must be held in place.

Putty, primer and finish paint must be mixed with recommended thinners to achieve the right application consistency.

1. After stirring thoroughly, if necessary, the paint must also be sieved, using appropriate sieves/ cloth mesh, to ensure that it is free from any foreign particles or lumps.
2. Ensure that dust from the top of the can is wiped/ blown off before opening the can. The spatula or stirrer to be used for mixing should be clean to prevent contamination.
3. Small quantity of the paint is usually transferred from the supply can into another can for application. Ensure that the can used for application is clean. This smaller quantity is adjusted for application viscosity/ consistency, by mixing the recommended thinner – water for water-based paints and MTO (Mineral Turpentine)/ recommended thinner for solvent based paints, as recommended in the Product Data Sheet by the manufacturer.

Adjust the application viscosity/ consistency: The paint supplied by the manufacturer is usually at a higher viscosity/ consistency, not suitable for application. Therefore, the consistency of the paint needs to be adjusted to suit the application method. The application consistency depends on the method of application and the manufacturer's Product Data Sheet gives the recommended thinner and it's mixing ratio, for application by brush, roller and spray.

In case of water-based paints using water as a thinner, care should be taken to ensure that "hard" water is not used or the "hard" water is suitably softened before use. Most reputed, large paint companies' products are formulated to be compatible with "hard" water and no additional 'softeners' are required.

After mixing the paint for achieving application consistency, apply on a small trial area to check if the desired consistency has been achieved for application. If not, fine tune the consistency by adding more water / solvents, as the case may be.

UNIT 2.4 Application of Paint

Unit Objectives



At the end of this unit, you will be able to:

1. Identify and use the different tools for paint application
2. Explain the basis for selection of an application tool
3. Explain the different types of spray application, its characteristics and use
4. Describe a two-component paint system and its critical factors to be considered

Brush and roller is the most commonly used application tool for decorative painting on masonry, metal and wooden surface. Spray application is the most widely used method for industrial and protective coatings. Use of spray for masonry surfaces, decorative metal surfaces and wood is slowly increasing. One or more of the following may influence the choice of the method used.

Size and type of job	Bigger jobs are more likely to use more sophisticated equipment. The type of job (defined by the specification) will determine what application method is required or most suitable.
Accessibility of the areas to be coated	Some areas (e.g. ornamental arches, elevated water tanks, radio/TV masts) will place restrictions on the type of application equipment used for practical reasons.
Configuration of areas to be coated	Complex areas may be difficult to coat adequately with spray equipment. Large flat areas are mostly suited for spray application. The use of brushes and rollers rather than spray equipment is preferred if there are areas or surrounding environment that could be damaged by overspray.
Type of coating	<p>Many modern coatings, particularly high-solids and high-build coatings, are designed for spray application. Brush or roller application is not recommended and should only be used when spray application is not possible or when small areas, such as repair areas, are to be coated.</p> <p>Application method depends on the type of coating being used. Some specialised coatings may be restricted to a specific application method. Coatings that are 100%-solids, for example, can only be applied using special equipment such as heated airless spray pumps or by mechanical methods, such as by trowel or by hand.</p>

Conventional liquid paints: Applied by brush, roller, or spray - should generally be applied in multiple passes, thin enough to allow proper evaporation of the solvents as the paint dries and cures. Paints used on porous surfaces should be able to penetrate and fill the surface voids in the substrate and should be thinned if necessary to ensure penetration.

Brush application: Brush application is the oldest painting method in common use today. The advantage of brush application is the paint's good penetration in the surface pores. Brush application is a slow process and a relatively expensive one. On large surfaces, brush application does not produce a sufficiently uniform and good-quality film.

Roller application is often preferred to brush application because of the speed of the method - the paint is rolled onto the surface. The paint roller is primarily a paint application tool for the application of top coats on large and smooth surfaces and is not recommended for use with a primer. These days it is common to see paint rollers with designs on them as illustrated in the picture below.



Fig 2.4 (i): Variety of paint brushes and paint application with brush (homedepot.com, diynetwork.com)

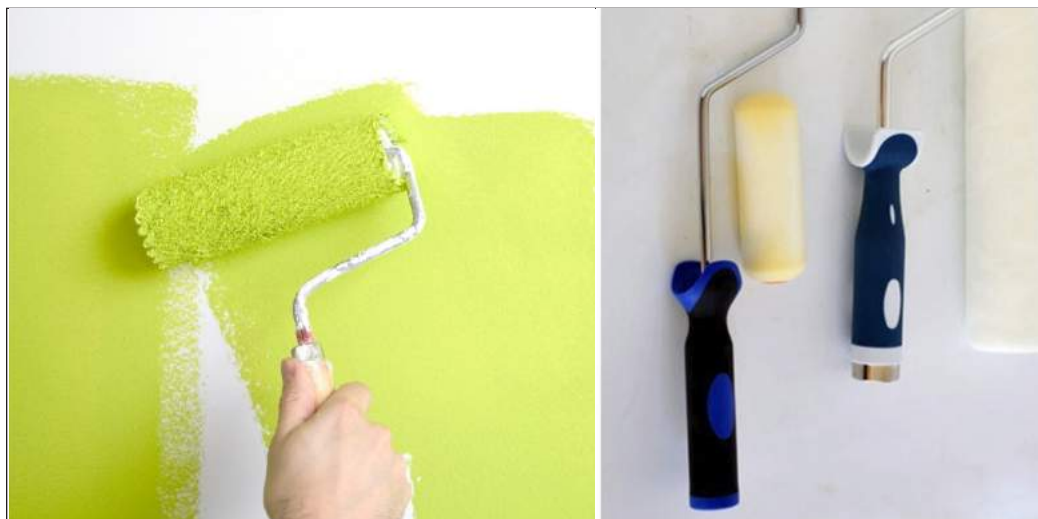


Fig 2.4 (ii): Roller application and anatomy of a roller



Fig 2.4 (iii): Variety of rollers for texture painting



Fig 2.4 (iv): Rollers with patterns (1.bp.blogspot.com &img.etsystatic.com)

Spraying: Spraying is the most commonly used painting method for large surfaces today. Different types of sprayers have been developed for various paint applications. In spray application, a liquid paint is transformed into a fine droplet spray. This is called atomisation, wherein droplets with high energy come out. It is a physical mechanical process. These atomised droplets are seen as a spray cloud. Atomisation Energy (AE) and Coating Flow (CF) are important components of spray.



Fig 2.4 (v): Spray guns

- Plural component spray guns have two or more suction hoses for the base and hardener respectively, which are then mixed at the tip of the spray nozzle, this eliminates the problem of using up the two component paints within the pot life.
- Coating Flow means volume of paint coming out from spray equipment. It is expressed in ml /minute.
- The air pressure, fan width and paint flow rate are important application parameters to be controlled for consistent quality of deposition of the coating, in spray application.



Fig 2.4 (vi): Roof being spray-painted (oldprocessroofing.com)

Low pressure (conventional) air spray: Air atomising sprayer, is the oldest of the sprayer types. It is still in extensive use for example, for painting homes, cars etc. In low pressure air spraying, the liquid is injected, either under hydrostatic pressure or slight overpressure, into the middle of the sprayer gun nozzle. The liquid from the nozzle is then atomised into fine mist by air jets directed at different angles to the paint material being ejected. The volume of the liquid flow to the nozzle can be adjusted using the needle valve or by adjusting the nozzle orifice size. The spray pattern is determined by the angle and volume of the air jets. The method requires the availability of pneumatic air and thinning of the paint material. The quality of the finish is uniform and smooth. The method is not suitable for forming thick coats, since thinning is used to regulate the coating finish. Conventional spraying is not recommended for coating complex structures. Atomising prevents paint material from entering tight corners and the surface pores. Air atomising spraying is also called low-pressure spraying because of the low operating pressure used.



Fig 2.4 (vii): Gravity feed gun, suction feed gun and pressure pot

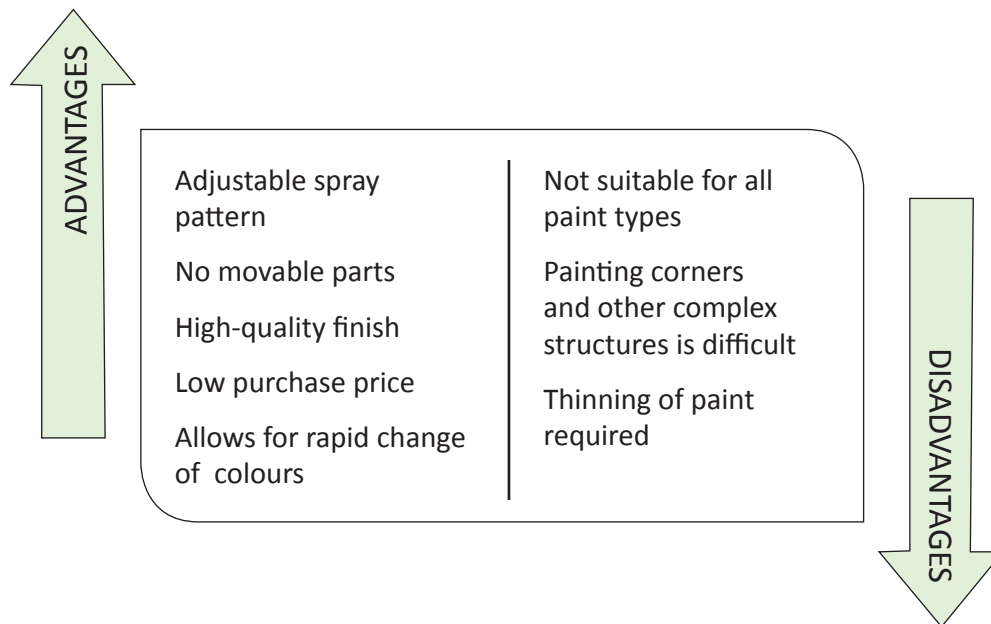


Fig 2.4 (viii): Advantages and disadvantages of using spray guns

Airless – High Pressure Spraying

Airless spraying is the most commonly used painting method for thicker coating thickness and exterior masonry surfaces. The atomisation of liquid paint in airless spraying is based on the great pressure difference induced by conveying the liquid under high pressure through a small nozzle orifice. The resulting paint mist is fine in quality and the droplets hit the surface at a high velocity. Because there is no “air lock” to overcome, the paint enters freely into corners and to the bottom of the surface pores. The pressure required for airless spraying is supplied by a high-pressure pump, which increases the pressure by tens of times, depending on the surface area ratio between the air-side pistons and the liquid-side pistons.



Fig 2.4 (ix): Nozzle sizes

For spraying paint without thinning, a nozzle pressure of 120 – 250 bar is usually required. Using too high a spraying pressure should be avoided, since this will increase the volume of spray dust and, thus, the visual texture of the finish. As low a pressure as possible should be applied to achieve a cost-effective outcome. The operating pressure can also be significantly reduced by using an appropriate paint heater as an auxiliary device.

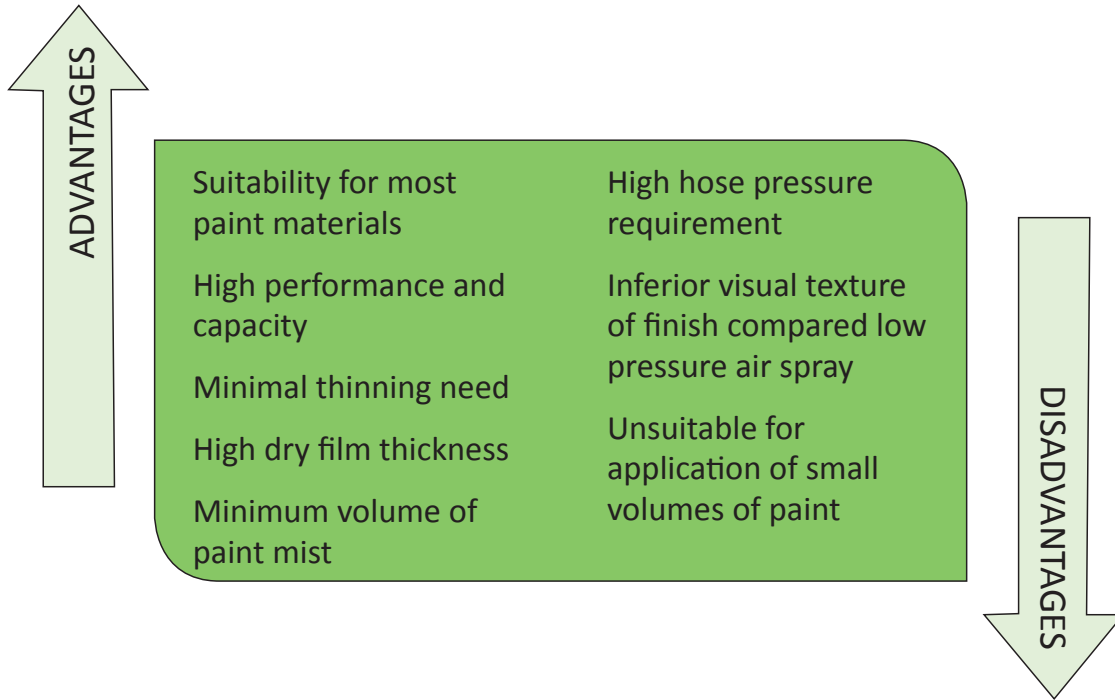


Fig 2.4 (x): Advantages and disadvantages of airless spraying

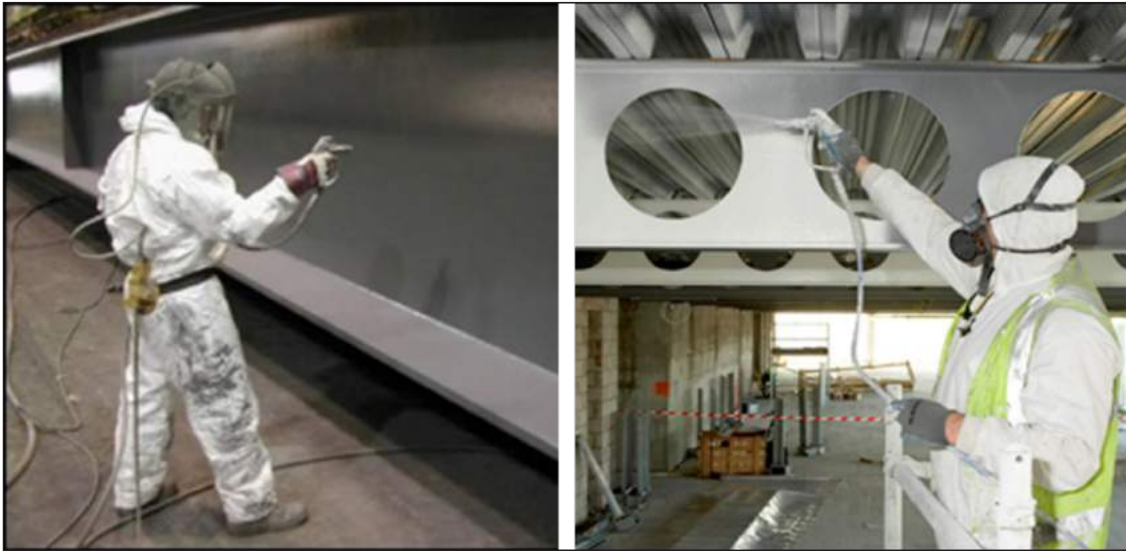


Fig 2.4 (xi): Airless spray technique

Two-pack spraying

In certain two-pack coatings, the curing reaction time is so short that dedicated two-pack spray applicators have been developed. The applicators pump the curing agent and the base component from separate containers and mix the components to the correct proportion before the liquid reaches the spray gun.

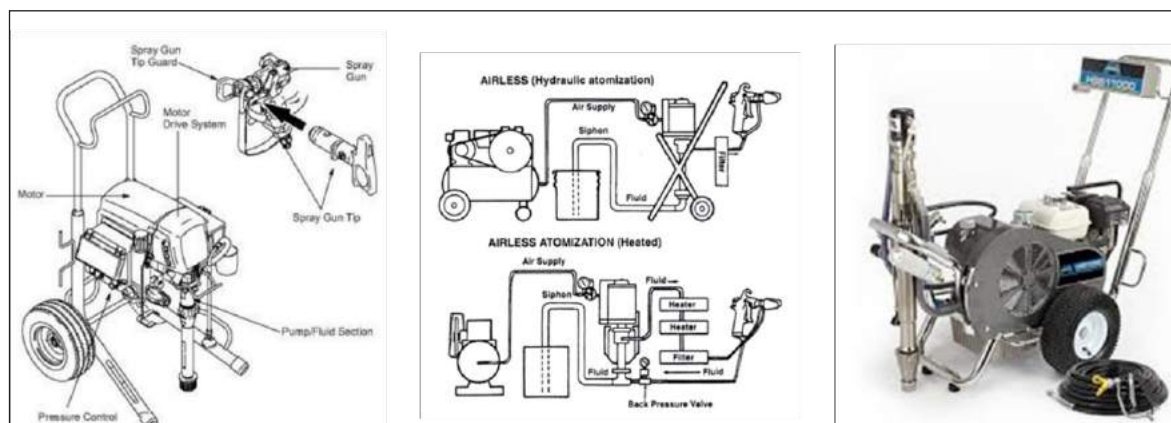


Fig 2.4 (xii): Plural component system

BRUSH APPLICATION	ROLLER APPLICATION	SPRAY GUN APPLICATION
<ul style="list-style-type: none"> • The paint must be thinned as recommended by the manufacturer and strained through a clean cloth. • For large, flat wall areas a 4 or 6-inch brush must be used. • Brush must be dipped in paint to cover up to half the height of the bristles, but care must be taken not to carry excessive paint, for it will cause dripping. • Tap the brush on the rim of the paint can to shed the excess paint. • Paint must be applied in even strokes vertically first and horizontally next. It must be finished with vertical strokes. • Overbrushing on the same area must be avoided to avoid brush marks. • The first coat must be allowed to dry for 4 to 6 hours or as recommended by the manufacturer before applying the second coat. • In case a pastel colour is chosen, a third coat may be necessary to get the opacity and the required colour. • When painting involves two colours, for e.g. white for the ceiling and a slightly darker colour for the walls, paint the lighter colour first. It is easier to cover the lighter colour with the darker colour in the edges when painting the darker colour. • The surface to be painted must be clean and dry and free from dust. The area to be painted must be clean and well ventilated. • Door / window trims must be first 'cut in' meaning narrow strips and edges must be first painted with a narrower paint brush, eg. 1" brush and then the rest of the larger flat surface with a 3" or 4" brush. 	<ul style="list-style-type: none"> • Roller is ideal for painting large, flat surfaces. However, even when using a roller, the edges of the walls must be brush applied first. • Pour the paint in a flat tray or vessel for full access of the roller. • Dip the roller in paint to ensure that the roller has picked up sufficient paint. • Roll up and down in sweeping long motion with a slight overlap. • Apply the paint with a slight pressure. • Without reloading on the paint, go over painted surface lightly to smoothen the paint. 	<ul style="list-style-type: none"> • Make sure the paint is thinned as per the manufacturer's recommendation and strained to avoid clogging. • Apply the paint from a distance of a foot. • Hold the gun straight, perpendicular to the surface. • First spray a sample on a panel or on a sampling surface before actual painting. • Start moving the gun before actually releasing the paint. • While applying paint avoid lighter areas by overlapping. Generally, a 50% overlap is recommended. • The tip of the spray gun nozzle may get clogged so clean the tip with a cloth at regular intervals.

**PAINTS AND
COATINGS
SKILL COUNCIL**



3. Coordinate with Colleagues and Customers

Unit 3.1 - Interacting with Superior

Unit 3.2 - Communicating with Colleagues

Unit 3.3 - Communicating Effectively with Customers



Applicable NOS – PCS/N9901

Key Learning Outcomes



At the end of this module, you will be able to:

1. Learn behavioural skills to interact with your colleagues and co-workers effectively
2. Describe steps to achieve customer satisfaction
3. List quality and service orientation markers

UNIT 3.1 Interacting with Superior

Unit Objectives



At the end of this unit, you will be able to:

1. Describe best ways of interaction with your superiors at work

An organisation is a group of people working collectively towards a common goal linked to an external audience/environment. Simply put, all the employees in an organisation act as tiny parts of a large machinery which help seamless and efficient functioning.

Every organisation must have a structure. The organisation structure enables clarity of purpose and role of every individual ensuring there are no overlap in functions. It also clearly defines a hierarchy which determine who takes what decision and thus how those decisions shape the organisation. These decisions provide the direction needed in the organisation.

Interpersonal relations / communication between employees across hierarchies are thus very important. A code of conduct / protocol ensures expectation management and reducing the gap between superior and subordinates by increasing the levels of trust and support ultimately achieving organisational and personal goals.

Openness and comfort in communication plays a very important role in achieving job satisfaction. Reporting problems and asking for possible solutions after your own unsuccessful attempts, taking feedback etc. all come under interactions with your superior.

Notes



UNIT 3.2 Communicating with Colleagues

Unit Objectives



At the end of this unit, you will be able to:

1. Describe best ways of communication with colleagues

Building trust with colleagues and co-workers is as important as doing your work efficiently and effectively. Here are a few actions you can take to build a relationship of trust and respect with your colleagues and co-workers:

- Greet everyone in the workplace with a smile and positive body language.
- Offer help to a new colleague to settle down in the job.
- Show courtesy and respect to colleagues.
- Do not disturb others when they are working.
- Keep your workstation clean.
- Leave washroom and other common facilities clean after use, for others.
- Do not waste your time and others' time by holding long conversations which are not related to work.
- Do not use cell phones at work.
- Do not mope. Keep a smiling face.

Following right communication rules is very important to keep a healthy relationship with colleagues and co-workers. In modern day workplace, people generally work in teams. It is important to build healthy relationship with the team members. Following are some important communication rules to follow:

- Speak in a polite and respectful tone. A voice tone suggesting impatience, sarcasm or taunt is not acceptable in the workplace.
- Use positive words and body language. Avoid words and topics which may offend anyone at workplace.
- If there is any conflict with a co-worker, resolve the issue amicably without raising your voice or getting angry.
- Greet your colleagues and co-workers in the morning or at the beginning of the shift.
- Use positive words and body language.

The quality of relationship you build with your colleagues and co-workers will depend on the behaviour you demonstrate while interacting with them. A relationship built on trust, good and clear communication, polite language and appropriate behaviour at all times helps you to be successful at work.

UNIT 3.3 Communicating Effectively with Customers

Unit Objectives



At the end of this unit, you will be able to:

1. Describe best way of communicating with customers
2. List quality and service satisfaction markers

A customer in your context is anyone – internal or external who might legitimately have a work-related expectation from you. Both their opinions are critical to the success of your company and sale of your products.

Internal customers are persons within the organisation who use products or services delivered by you as inputs in their work. For example, production staff in a factory are internal customers of maintenance technicians. The feedback provided internal customers is valuable. It must be implemented and taken seriously.

External customers are the end consumers and/or companies who buy your products. They do not belong to your organisation. These individuals are essential to the success of your company, as they purchase your product. Satisfied external customers make repeat purchases. They also refer the experience to others.



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- Understanding customer expectations and implementing the same helps achieve customer satisfaction. Delivering more than expected adds to the overall experience of a good sale. It brings repeat customers.
- Managing customer relations requires dedicated and committed effort. It involves understanding the customer's need correctly and fulfilling it every time. With a business customer, it involves understanding their business and in what ways our product / service can help grow and improve their business.

General tips for interactions with customer are as follows:

- Greet and welcome the customer in a friendly manner
- Make an earnest effort to understand customer needs. Ask specific pertinent questions.
- Be attentive, listen carefully and make notes. Suggest upgradation and add-ons if they give value to the customer.
- Find out customer’s likes and dislikes by soliciting their opinion and comments on the demonstrated samples
- Never promise more than you can deliver. Always deliver more than you promise, never fall short
- Agree on all terms and conditions

When the customer is another organisation (such as an OE company, a cooperative society or a club), many persons from the customer organisation get involved. Each may have different needs and expectations. In such situations,

- Identify all the stakeholders (internal and external) and opinion makers right at the outset and understand their needs
- Understand the organisation’s strategy and its priorities. This is critical to understanding which needs rank high.
- Be aware that there will be internal dynamics at work in any organisation, and one needs to steer clear of getting caught up in any interpersonal conflicts.
- Document what will be delivered (quantities, specifications and timelines) with a formal sign-off from the customer’s side. This can avoid misunderstanding and disappointment later. Such document should also list key expectations from the customer that are critical for timely and quality delivery.
- With a long-term customer, explore ways of bringing about continuous improvements that can help the customer’s business. This is critical to keep getting continuing business.
- Be available to deal with the customer’s queries and concerns promptly and at all times.

Notes



**PAINTS AND
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4. Maintain Standards of Product / Service Quality

- Unit 4.1 - Meeting and Exceeding Customer Expectations
- Unit 4.2 - Coating Defects, Tests and Standards
- Unit 4.3 - Your Responsibility as an Assistant Decorative Painter
- Unit 4.4 - Prevention of Injuries



Applicable NOS – PCS/N9902

Key Learning Outcomes



At the end of this module, you will be able to:

1. Explain product / service quality requirements for wood polishing
2. Follow company's policy and work instructions on quality standards to achieve customer satisfaction.
3. List out various defects and tests to check the quality of the wood polishing

UNIT 4.1 Meeting and Exceeding Customer Expectations

Unit Objectives

At the end of this unit, you will be able to:

1. Describe the target customer and the quality standards defined by the company.
2. Implement the improvement suggested by supervisor and the customer.

A thorough understanding of the total polishing system is necessary to begin the discussion with the customer.

1. Understand customer requirements:

You should be able to obtain clear instructions and specifications from the customer about the desired finish, look, durability expectation and corrosion protection specifications. Some customers may not have a clear idea about their requirements. In such cases they will need to be guided. Prepare a few samples and get the customer to choose finish, gloss, and shade, which are some basic visual requirements for a coated film.

Established industries generally have well defined specifications stating their requirement. However, even here it is necessary to engage with the customer to ensure common understanding on tolerances, subjective parameters, working limitations and skill levels at customer factory as well as other unstated terms. For example

- When the customer asks for exact match to a standard colour panel, what is the level of tolerance permitted? Will the customer go by visual judgement or by an instrument match?
- What are the testing methods and standards that the customer would use?
- What is the process for maintaining and updating standard panels?
- What are the application equipment, parameters and conditions at the customer end?
- Are there any work restrictions at the customer's premises, for example on working hours, holidays, use of elevators, etc.? It is important to be clear on these while committing to aggressive completion targets.
- Can we describe what performance would be seen as exceeding the customer's expectations?
- Does the customer have internal targets for continuous improvements over time? What are the expectations from the coating supplier/ contractor in this regard?

2. Understand the total coating application system/process, nature of the facility and limitations:

Delivering good and consistent quality in the design, production or application of paints and coatings requires understanding application conditions in detail. This includes obtaining insights and information on all relevant factors such as:

- Type and quality of the substrate and variations that may be encountered
- Surface preparation needed
- The type of coatings to be applied
- The application equipment available/ needed

- Applicable/expected quality standards
- Ambient conditions and site conditions
- Maximum size of components which can be fitted
- Overall magnitude of the job
- Maximum weight the conveyor can take (known as point load)
- Bake conditions, oven design, baking window
- Support facility limitations (e.g. conveyor speed, maximum loading etc.)

3. Fool-proof the process and have the right equipment

Analyse and find areas which need to be corrected to gain control of the overall process. This will reduce variations/ surprises and facilitate meeting quality expectations in a consistent and timely manner.

- Inspect the material(s) to be coated before starting the process to ensure good quality and good finish
- Check materials and consumables to be used. Make sure that they conform to specifications
- If the input jobs do not meet the requirements, discuss with the customer and quality in-charge and take appropriate actions
- Follow the right processes and use correct equipment for the job
- Ensure that applicable SOPs are adhered to

4. Get feedback from the customer and incorporate suggestions for improvement:

- After delivering the product/ output, proactively find out specific customer feedback
- Make a note of the feedback and improvements the customer is looking for
- Tell the customer what improvements you will incorporate in the next job

4.1.1 Quality Standards of the Company

When coating is carried out under proprietary or customer specifications usually the following criteria are considered to check the quality of the finished job.

- On visual inspection, the coating should show the desired finish and correct curing without defects or blemishes.
- Mechanical strength checks are performed to ascertain that the DFT (Dry Film Thickness), hardness and flexibility criteria are met
- The film is tested for corrosion resistance. This may include salt spray resistance test, humidity resistance test etc.
- Outdoor durability tests include ultraviolet resistance test and actual outdoor resistance test



UNIT 4.2 Coating Defects, Tests and Standards

Unit Objectives

At the end of this unit, you will be able to:

1. Explain the process of maintaining and enhancing quality standards.
2. Describe various tests and their pass/fail criteria and acceptable tolerance level.
3. List the equipment used for quality tests.
4. Describe the ways to improve company's customer satisfaction rating.

A company's policy defines and helps ensure adherence to quality standards.

- What kind of durability must the finished product meet?
- What are the criteria laid out for the quality assurance program?
- What are the customer specifications?

Based on these a 'Standard Operating Procedure' or 'SOP' is generated with specific work instructions. An **SOP** is a procedure specific to the operation that describes the activities necessary to complete tasks in accordance with industry regulations, legal requirements and quality standards

Why is it important to follow an SOP?

- Saves time and eliminates mistakes
- Ensures that consistent standards are followed throughout the process
- Reduces training costs
- Supports quality goals

4.2.1 Tests and Standards to Check Quality

- Dry Film Thickness (DFT) measurement
- Gloss
- Colour
- Flexibility / bend test
- Pencil hardness test
- Adhesion test

4.2.1.1 Dry Film Thickness (DFT) Measurement

This test is devised to check the correct coating thickness on the components as per the specifications.

- Dry film thickness (DFT) is the thickness of the coating

- DFT is measured for cured coatings. Proper thickness range is recommended in specifications
- There are various types of DFT gauges available in the market, from simple magnetic gauges to digital gauges
- The gauge should be calibrated periodically by using a bare metal plate (zero setting) and standard thickness plastic foils (shims) which are supplied with the gauge
- Different gauges are available for ferrous and non-ferrous substrates (F and NF)
- Destructive method or ultrasonic method of DFT measurement is used for non-metallic substrates like wood, plastic, etc.



Fig 4.2.1.1 (i): Magnetic Gauge



Fig 4.2.1.1 (ii): Digital Gauge

4.2.1.2 Gloss Check



Fig 4.2.1.2: Gloss meter

- Gloss is measured with Gloss Meter of different designs. The reflection is measured, and the angle of reflection is specified at 20°, 45°, 60° and 85°
- An angle of 60° is most common in the coating industry
- An angle of 20° is used for a more differentiated result of high gloss surfaces; usually recommended for Automotive class "A" finish
- An angle of 85° is used for a more differentiated result of matt surfaces, not so popular in coating industry

4.2.1.3 Colour Check

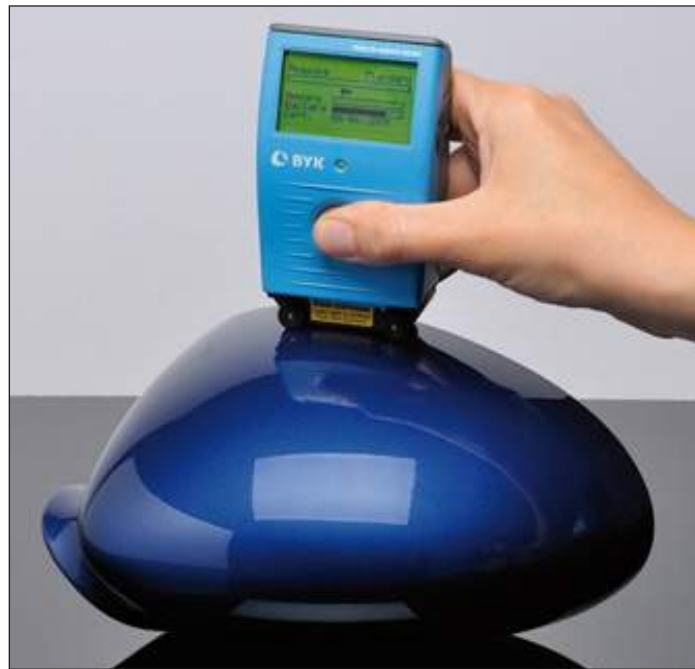


Fig 4.2.1.3: Spectrophotometer

Colour may be checked visually or using a computer aided spectrophotometer. If measured by a spectrophotometer, the colour difference is reported as ΔE (Delta E). The ΔE should fall within the demarked tolerance zone.

- Visual inspection, compared to a master. It is very important to use a relevant light source when judging colour
- Computer aided spectrophotometer
- Stationary equipment or portable equipment

4.2.1.4 Flexibility - Bend Test

This test is to determine the elasticity, adhesion and elongation ability of a dry coated film applied on a flat metal support. **This test cannot be performed on rigid substrates like wood, plastic, etc.**

- It is checked using either a conical or cylindrical mandrel with a graduated scale
- The apparatus contains a holder for a mandrel, a bending lever fitted with height adjustable rollers, and sliding tongs for fastening the sample
- It is a laboratory apparatus to bend coated test panels over a conical/cylindrical shaped mandrel in order to assess the elasticity of the coating, in accordance with ISO 6860 and ASTM D522
- The conical shape of the bending area allows the deformation of the test panel and examination of the elasticity range of a coating over any diameter between 3.1 and 38 mm in one single test

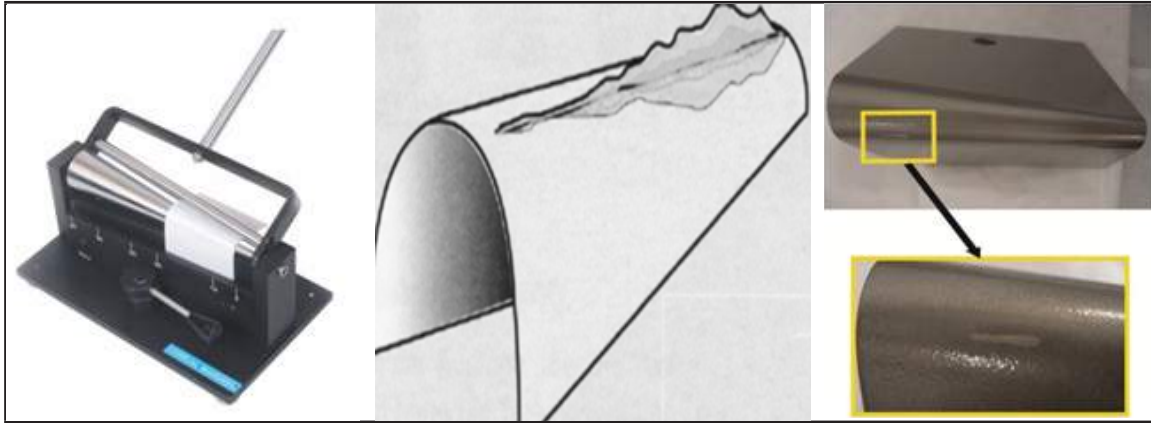


Fig 4.2.1.4: Bend test on a conical mandrel

4.2.1.5 Pencil Hardness Test



Fig 4.2.1.5: Pencil Hardness Test

Pencil hardness test is one of the many tests used to evaluate coatings. It is a simple and dependable test that uses pencils that are graded. The grade of the pencil is determined by the amount of baked graphite and clay in its composition. The test is performed by scratching the coated surface with pencils of known hardness.

Softer Pencils							Harder Pencils						
6B	5B	4B	3B	2B	B	HB	F	H	2H	3H	4H	5H	6H

4.2.1.6 Adhesion Test

Adhesion test is used to determine if the paint or coating will adhere properly to the substrate to which it is applied. There are three different tests to measure the adhesion of the coating to the substrate.

- Cross-cut test
- Scrape adhesion
- Pull-off test

Cross-cut test: This test determines the resistance of the coating to separation from the substrate by utilising a tool to cut a right-angle lattice pattern into the coating, penetrating all the way to the substrate. It is a quick test to establish pass/fail test. When testing a multi-coat system, the resistance to separation of different layers from one another can be determined by this test.

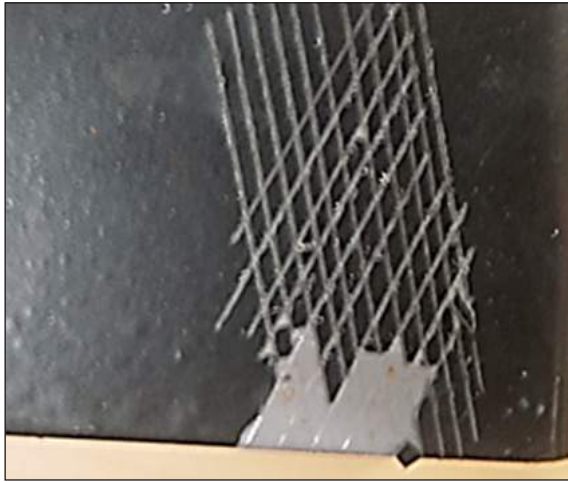


Fig 4.2.1.6 (i): Adhesion test fail

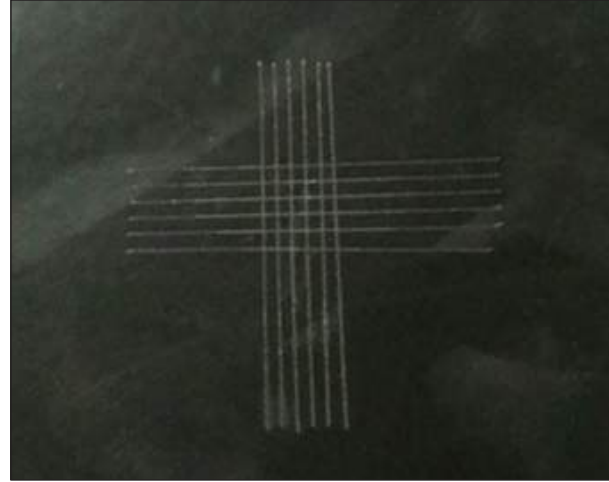


Fig 4.2.1.6 (ii): Adhesion test pass

Pull off dolly test: Unlike the other methods, this method maximises the tensile stress, therefore results may not be comparable to the others.

- The test is done by securing loading fixtures (dollies) perpendicular to the surface of a coating with an adhesive. Then the testing apparatus is attached to the loading fixture and is then aligned to apply tension perpendicular to the test surface.
- The force that is applied gradually increases and is monitored until a plug of coating is detached.

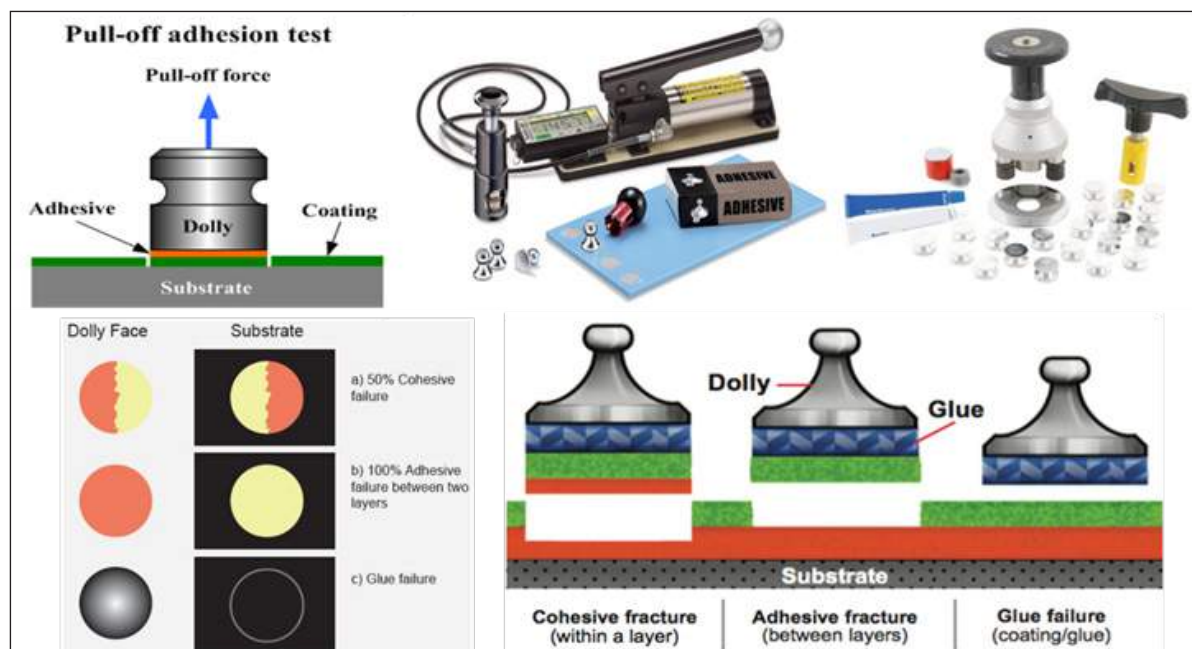


Fig 4.2.1.6 (iii): Pull-off Adhesion Test

4.2.1.7 Impact Test

Impact test is also known as drop weight test. The coated panel is subjected to mechanical impact by dropping a standard weight which can deform the coating and /or the substrate. With this test coating is tested for elasticity, brittleness, and adhesion to the substrate. As per ISO 6272-1:2011 - it is a method for evaluating the resistance of a dry coating film to cracking or peeling from a substrate when it is subjected to a deformation caused by a falling weight, with a 20-mm-diameter spherical indenter, dropped under standard conditions.

- Measures the deformation of a coating film
- Test performed on the front and reverse sides of a panel
- Result expressed as Pass or Fail
- Test is mainly performed on metal substrate.



Fig 4.2.1.7 (i): Impact Tester



Fig 4.2.1.7 (ii): Impact Test

4.2.2 Defects in a Coated Film

Quality checks and maintenance are a mandate every coating applicator must follow. Quality maintenance reflects excellence in your own skills and makes you an expert at your job. The quality parameters to be met and the checks to be performed will depend on the coating and where it is applied. For example, the requirements of a performance or industrial coating are very different from that of a house paint.

No.	DEFECT	CAUSES
1	RUNS AND SAGS	<ul style="list-style-type: none"> • Over thinned paint • Use of very slow evaporating thinner • Applying paint without proper flash time between coats • Very low air pressure during spray application • Improper spray gun set-up or an unbalanced spray pattern • Very cold substrate
2	CHALKING	<ul style="list-style-type: none"> • Chalking is a surface phenomenon, generally caused by exposure to UV radiation produced by the sun and its action on the organic binder • In the presence of UV light, airborne reactants such as oxygen, humidity, and pollution react with the resins in the binder, causing it to disintegrate and leaving the pigments free on the surface • Typically, amine-cured epoxies and epoxy esters chalk rapidly and acrylics and acrylic-modified resins have good chalk-resistant properties since they are less affected by the sun's radiation • Chalking may not be a serious problem, and typically the coating will continue to provide protection in most cases, even though it may look faded
3	EROSION	<ul style="list-style-type: none"> • It is a surface defect often associated with chalking and often seen in brush applied coatings where the brush marks are exposed as the coating wears away • It is caused largely by heavy rainfall, high winds, hail or a combination of wind and rain; by sand erosion along beach areas; or by sandstorms in desert areas • Erosion of internal linings can be a significant problem in pipes carrying slurry or cooling water • Resins with some elastomeric quality may be effective, providing resilience to combat the impact of the eroding particles
4	CHECKING	<ul style="list-style-type: none"> • Checking is a form of cracking and is identified by small breaks in the coating that form as the coating ages and becomes harder and more brittle • It is a surface phenomenon that does not go all the way to the substrate • It can be caused by the mixture of resins, solvents and pigments that are not compatible. • Excessive film thickness, low flash off between coats, inadequately dry or thick undercoat are also some of the causes for checking • To minimise checking, the coating should be formulated with weather resistant resins, non-reactive pigments that do not contribute to checking, long lasting and stable plasticisers, and reinforcing pigments that reduce stress in the coating surface • Apply thinner coats of paint with adequate flash off or drying between coats

5	ALLIGATORING	<ul style="list-style-type: none"> • It is mostly a formulation-related failure and prevention is a matter of selection • The coating system selected should not specify a soft primer under a harder topcoat. The coating should be applied in thin coats, which should be allowed to cure before application of successive coats • Never apply a hard coating that oxidises or requires polymerisation over a permanently softer or more rubbery primer
6	CRACKING	<ul style="list-style-type: none"> • This formulation related failure is due to premature aging or weathering and, unlike checking or alligating, the cracks break through the coating, extending to the substrate • Cracking is a much more serious type of failure than checking • Checking results from the stress on the coating surface, while cracking results from stress throughout the film and between the film and the substrate • The use of proper resins, plasticizers, and pigments in coating formulation minimises the tendency of the coating to cracking • Fibrous or acicular (needle shaped) reinforcing pigments can help in reinforcing the coating against cracking
7	MUDCRACKING	<ul style="list-style-type: none"> • Unlike alligating, mudcracking goes directly to the substrate. It presents an immediate corrosion problem with possible chipping and flaking of coating from the surface • It occurs when highly filled or pigmented coatings, particularly zinc rich coatings are applied too thick • Highly filled water-based coatings sometimes mud crack, with the reaction occurring as soon as the solvent or water carrier begins to dry out of the coating • Mudcracking can be prevented by a combination of coating selection and proper application. If fast drying conditions exist or are expected, the user should avoid highly filled water-based coatings. • The coating should be applied during more moderate drying conditions, in thin coats without runs and sags
8	WRINKLING	<ul style="list-style-type: none"> • Wrinkling generally occurs when coatings are applied too thick. • It results from the swelling of a coating where the surface of the coating expands more rapidly during the drying period than the body of the coating • Occurs most with oil-based coatings • If a coating contains an excess of surface driers, wrinkling may occur wherever the coating is thicker than normal • Wrinkling is likely to occur in cold weather when the thickened coating is applied so that a heavy film develops or in hot weather when the topcoat dries quickly but the coating underneath remains soft

9	BLISTERING	<ul style="list-style-type: none"> • Blister develops first in localised spots where the adhesion is weakest • Blisters can be large or small and may exist in isolation or in groups • Blisters may be initiated by several causes. Mostly, they are formed due to the presence of moisture or other vapours, such as air or solvent, within the coating • A blister generally first appears when the vapour within the coating expands at elevated temperatures. It can also arise from soluble pigments in the primer and soluble chemical salts. • Yet another cause could be inadequate solvent release by the coating
10	INTER-COAT DELAMINATION	<ul style="list-style-type: none"> • Delamination is the loss of adhesion between coats in a multi coat system and is most common where repair or maintenance coatings are applied over cured coatings • New coatings applied over existing coatings may not be compatible with the previous coating, and delamination can occur • Precautions should be taken to minimise the problem by cleaning adequately and by applying coatings as quickly as possible after the cleaning operation • Another cause of delamination is the application of a coating over another coating that has over cured • Some modern coating formulations have been specifically developed with a low cross-link density to reduce this problem
11	EXCESSIVE ORANGE PEEL	<ul style="list-style-type: none"> • Film thickness out of proper range In case of powder coating, too slow heat-up rate and slow oven ramp-up time is the main cause • The oven temperature should cross 120°C -140°C very quickly • Grounding should be checked • The kV setting of the spray gun to be lowered • In case of liquid paints, a balance of slow and fast evaporating thinner should be maintained to achieve a smooth, orange peel free film without causing runs and sags. • In air assisted spray, the recommended air pressure should be maintained
12	GLOSS TOO LOW FOR HIGH GLOSS TYPE COATING	<ul style="list-style-type: none"> • Incompatibility between different coats • Micro-pinholing from outgassing • Excessive orange peel due to inadequate DFT • Over-curing of parts
13	INCONSISTENT FILM THICKNESS	<ul style="list-style-type: none"> • Incorrect positioning of spray guns • Defective spray equipment / nozzle • Reciprocators not matched to line speed • Air flow in booth disturbing spray pattern • Improper manual technique

14	POOR IMPACT RESISTANCE AND/OR FLEXIBILITY	<ul style="list-style-type: none"> • Over baked film • Poor cleaning • Excessive film thickness
15	POOR ADHESION	<ul style="list-style-type: none"> • Poor cleaning / pretreatment • The PT line is not properly maintained • Oil removal from the degreasing stages not proper • Under-cured film
16	PINHOLES	<ul style="list-style-type: none"> • Moisture in coating • Moisture in compressed air • Mixing of two different coating types • Porous component like casting • Heating too fast creating outgassing while curing
17	CISSING OR CRATERS	<ul style="list-style-type: none"> • Moisture in coating • Oil in compressed air
18	CHIPPING	<ul style="list-style-type: none"> • Loss of adhesion of the film to the substrate due to impact from stones or other hard objects • Sand and featheredge damaged areas to remove chips, then refinish. • Use premium two component undercoat and topcoat system. • Use a flex agent in undercoat and/or topcoat system in areas that are prone to chipping.
19	DUST CONTAMINATION	<ul style="list-style-type: none"> • Inadequate cleaning of the surface • Dirty spray environment • Inadequate air filtration in the booth • Use of poor grade masking paper • Dirty spray gun • Dirty work clothes • Fine dust contamination can be removed by sanding and polishing
20	FISHEYES	<ul style="list-style-type: none"> • Spraying over surfaces contaminated with oil, wax, silicone, grease etc. • Use of thinner/ reducer in place of a solvent cleaner Spraying over previously repaired areas containing fisheye eliminator additive • Remove wet paint film with solvent cleaner and refinish. Add recommended fisheye eliminator and respray the affected areas. • Do not use fisheye eliminator in undercoat or basecoat colour. • If the paint has dried, sand to a smooth finish below the fisheye cratering and refinish

21	LOSS OF GLOSS	<ul style="list-style-type: none"> • Top coat applied in heavy, wet coats • Inadequate flash time between coats • Insufficient film thickness of topcoat colour or clearcoat • Using a poor grade and/or too fast evaporating thinner • Improper cleaning of the substrate • Insufficient air movement during and after application • Spraying over a deteriorated or solvent sensitive substrate finish without proper priming or sealing procedures • Natural weathering of the finish • Allow finish to cure thoroughly, compound or polish to restore gloss. • Sand and refinish
22	MOTTLING	<ul style="list-style-type: none"> • An uneven distribution of metallic flake • Too much thinner/reducer • Colour overthinned/ reduced • Applying clear coat to a basecoat that has not thoroughly flashed/dried • Improper application of basecoat <p>To get a uniform single stage metallic finishes, apply a higher-pressure mist coat, panel by panel, while previous coat is still wet or allow basecoat colour to flash, then apply a low-pressure mist coat. Finishes that have dried must be sanded and refinished. Use recommended spray gun, including fluid tip and air cap for the material being sprayed</p>
23	SANDING MARKS	<ul style="list-style-type: none"> • Scratching or distorting metallic/mica flakes close to the surface of the paint film <p>Allow finish to dry, sand and refinish. Avoid sanding basecoat finishes before clear coating. If sanding is necessary, apply additional colour following label direction. When sanding single stage, finishes confine the sanding to minor imperfections – nib sanding rather than entire panel</p>
24	SOFT FILM	<ul style="list-style-type: none"> • Applying undercoat and/or topcoat excessively wet • Insufficient dry time between coats • Improper shop ventilation or heating • Adding too much or too little hardener to the paint material. • Using the incorrect thinner/reducer for spray conditions • Omission of drier in enamel/ urethane topcoat <p>Allow additional dry time, maintaining a shop temperature of 30 degrees centigrade or above or force dry following temperature and time recommendations or remove coating film and refinish. Use recommended spray gun, fluid tip and air cap for the material being sprayed.</p>

25	BLEEDING	<ul style="list-style-type: none"> • Solvent in the new topcoat dissolves soluble dyes/pigments in the original finish, allowing them to seep into and discolour the new topcoat. • Remedial measures can be to remove original paint film and refinish. • Preventive measure can be to isolate the suspected bleeding finish by applying a two-component surface/sealer. • Allow to cure and then apply desired topcoat.
26	TRANSPARENCY	<ul style="list-style-type: none"> • Paint not thoroughly stirred • Colour over thinned/reduced • Substrate not uniform in colour • Wrong colour undercoat used • Insufficient number of colour coats applied <p>Apply additional coats of colour until hiding is achieved or sand and apply similar coloured undercoat/ground coat and refinish.</p>



Fig 4.2.2 (i): Sagging of paint coating



Fig 4.2.2 (ii): Chalking



Fig 4.2.2 (iii): Erosion



Fig 4.2.2 (iv): Checking

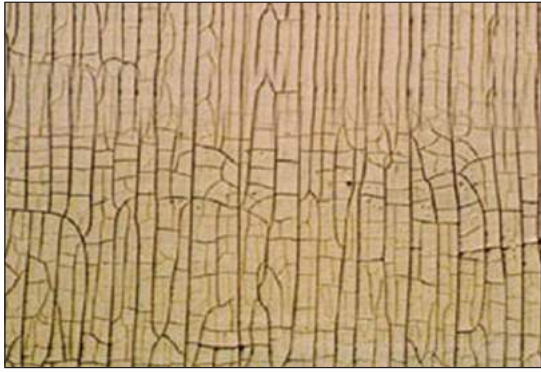


Fig 4.2.2 (v): Alligatoring



Fig 4.2.2 (vi): Cracking



Fig 4.2.2 (vii): Mud cracking



Fig 4.2.2 (viii): Wrinkling



Fig 4.2.2 (ix): Blistering



Fig 4.2.2 (x): Inter-coat delamination



Fig 4.2.2 (xi): Orange peel

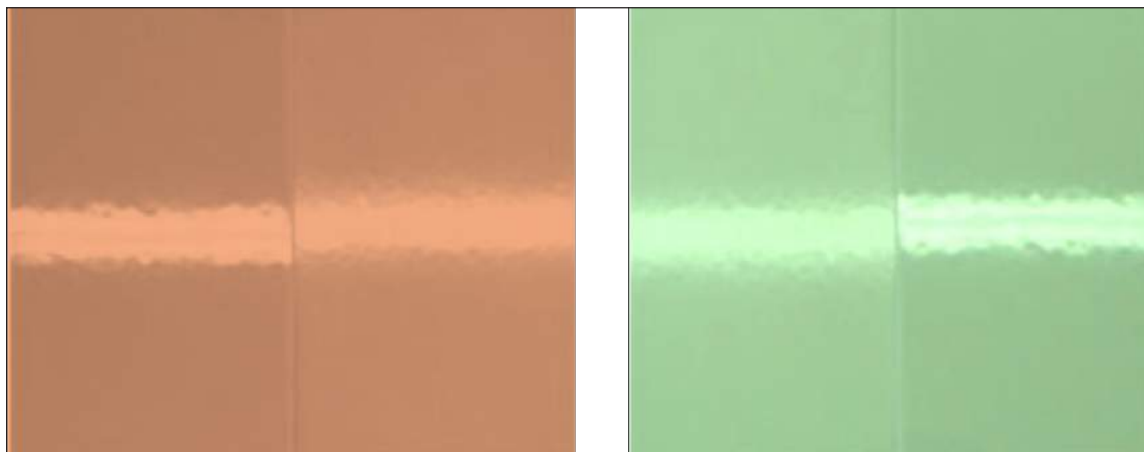


Fig 4.2.2 (xii):
Standard Gloss Lower Gloss

Fig 4.2.2 (xiii):
Standard Gloss Higher Gloss



Fig 4.2.2 (xiv): Varied DFTs mentioned on panel



Fig 4.2.2 (xv): Poor pencil adhesion

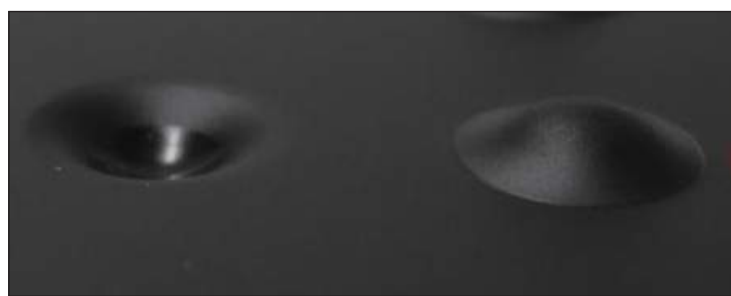


Fig 4.2.2 (xvi): Impact

Reverse Impact



Fig 4.2.2 (xvii): Failed impact test

Notes



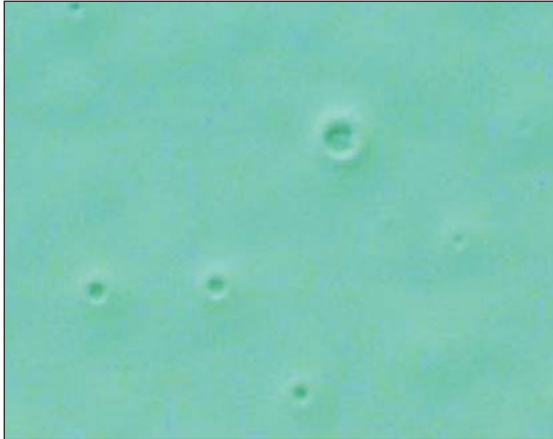


Fig 4.2.2 (xviii): Pinholes

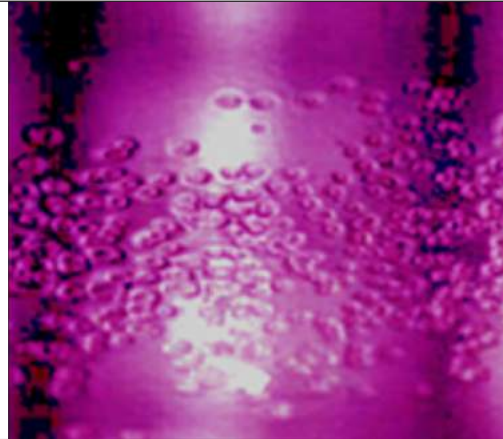


Fig 4.2.2 (xix): Cissing or craters



Fig 4.2.2 (xx): Chipping

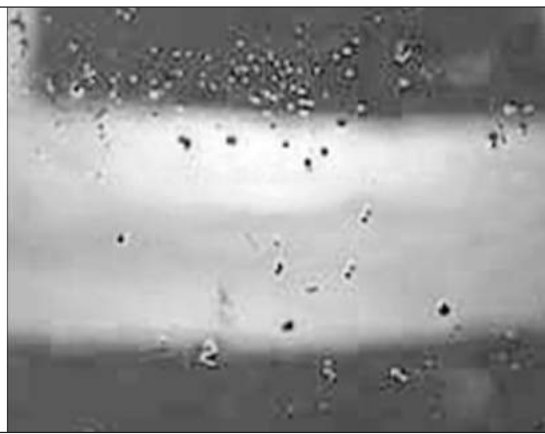


Fig 4.2.2 (xxi): Dust contamination



Fig 4.2.2 (xxii): Fisheyes

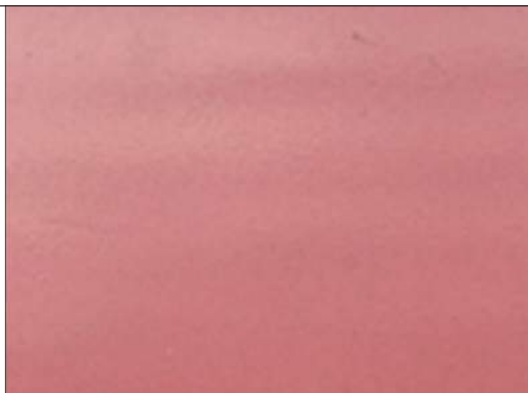


Fig 4.2.2 (xxiii): Loss of gloss

Notes





Fig 4.2.2 (xxiv): Mottling



Fig 4.2.2 (xxv): Sanding marks



Fig 4.2.2 (xxvi): Soft film



Fig 4.2.2 (xxvii): Bleeding



Fig 4.2.2 (xxviii): Transparency

Practical Activity

Carry out the quality tests in the paint laboratory.

UNIT 4.3 Your Responsibility as an Assistant Decorative Painter

Unit Objectives



At the end of this unit, you will be able to:

1. Organise paint material and tools for painting as per customer's requirement
2. List down the quantity of paint consumed and consumables used to work out the cost incurred

Your job responsibilities may vary from job to job, but general duties always include:

- Obtain, read, and fully understand the coating specification. Bring up any questions with the appropriate person, and get them resolved
- Fully comply with specification requirements and that work performed matches the required standard of quality
- Determine that all essential raw materials, especially coatings, are stored correctly and used in batches within the manufacturer's recommended shelf life
- Maintain records of all work done, the conditions under which it was done, and any other appropriate report items required by the supervisor
- Ensure that the necessary test instruments and standards required are available at all times and that each instrument is fully functional and properly calibrated

Notes



UNIT 4.4 Prevention of Injuries

Unit Objectives



At the end of this unit, you will be able to:

1. Apply safe working practices to avoid injuries due to use of high-pressure equipment, moving parts and electric shocks
2. Identify toxic ingredients by reading a MSDS and use recommended PPE

Avoiding skin injections:

- Stay clear of high-pressure fluid streams and sprays
- Never remove protective devices, such as spray gun tip guards, during application
- Use proper pressure-relief procedures
- Use proper flushing practices described in instruction manual
- Never try to stop leaks with your hands or body
- Always use the spray gun trigger safety lock when not spraying
- Don't feel for leaks with your hands or a rag

Avoiding pressure-related injuries:

- Do not exceed the working pressure ratings (WPR) of components, paying special attention to high-pressure equipment
- Operate the motor within the recommended air or hydraulic pressure
- Do not repair permanently coupled hoses
- Use only genuine service parts as specified by the manufacturer
- Properly align spray tips to prevent back-spray
- Do not use low-pressure fittings on high-pressure equipment
- Do not use damaged or worn out equipment
- Check for proper connections and make sure they are tight before pressurising the system
- Follow procedures for relieving fluid pressure whenever you stop equipment for service or repair

Avoiding injury from moving parts:

- Never operate equipment with guards or other protective devices removed
- Check regularly to ensure that safety devices are operating properly
- Properly use bleed type shut-off valves

Avoiding toxicity:

- Use recommended personal protection equipment (PPE) to avoid contact with hazardous materials
- Read and follow directions on all coating material labels and material safety data sheets (MSDS)
- Never operate gas engines indoors

Avoiding electric shocks:

- Properly ground all objects in the system, including operators
- Follow the procedures in instruction manuals to avoid shocks from electrostatically charged components
- Never operate electric equipment when it is wet or when the surrounding area is wet
- Use only grounded outlets, extension cords and fluid hoses designed for high-pressure spraying that are in good condition
- Do not modify or remove electrical cords

Tips

Defects on the painted / coated surface reflects poor skills and workmanship. This may lead to early failure of the coating. Hence a greater emphasis on excelling at your job is important.

Notes

**PAINTS AND
COATINGS
SKILL COUNCIL**



5. Maintain OH&S Standards and Follow Environmental Norms

Unit 5.1 - Responsibility Regarding Safety

Unit 5.2 - Waste Disposal

Unit 5.3 - Use Safety Tools and Personal Protective Equipment (PPE)

Unit 5.4 - Handling of Coating Materials and Equipment as per Safety and Environmental Standards

Unit 5.5 - Precautionary Measures



Applicable NOS – PCS/N9903

Key Learning Outcomes



At the end of this module, you will be able to:

1. List the personal protective equipment and its uses to be used at the workplace
2. Explain the precautionary measures for emergencies

UNIT 5.1 Responsibility Regarding Safety

Unit Objectives

At the end of this unit, you will be able to:

1. Explain safety
2. Identify various types of hazards in your workplace
3. Describe what an MSDS is and why it is important

Safety is the responsibility of all employees whether at the job site or in a factory. The employer has the prime liability for safety, but every employee should be knowledgeable on safety. They should be able to work in a safe manner without any safety violation.

As a member of the plant team or the site team you are responsible for:

- Your own safety
- Reporting any unsafe conditions or practices to the safety engineer or supervisor
- Following all specific safety requirements as set forth in the specification and by the safety engineer or supervisor
- Adopting safe practices while working with solvents, coatings, spray equipment, scaffolding, abrasive blasting, etc.
- Knowing the location of first aid stations
- Knowing the location of the nearest telephone and emergency telephone numbers like ambulance, fire department, safety engineer etc.

5.1.1 Primary Hazards

Fire	Explosion	Reactivity	Health Hazards
<ul style="list-style-type: none"> • All solvent based coatings, whether in a container or as a wet film on a surface, are flammable. In most cases, the coating's binder resin is also flammable. Precaution should be taken to prevent a spark or a flame from coming in contact with wet film or liquid paint. 	<ul style="list-style-type: none"> • When sufficient solvent vapour is present in the air, a spark or a flame, can cause the entire air volume to react at one time, creating an explosion. Explosion can occur without fire, although they are often combined. Every effort should be made to prevent the solvent-air mixture from reaching 50% of the lower explosive limit. 	<ul style="list-style-type: none"> • Reactivity is not ordinarily a major problem from safety standpoint. However, in two pack systems, the mixing of the base and the hardener makes the system reactive and can generate substantial amount of heat. Epoxies, polyurethanes, and similar reactive materials such as polyesters catalysed with acid, develop a substantial amount of heat, whenever they are mixed. Hence the base and the hardener or catalyst should be stored separately. 	<ul style="list-style-type: none"> • Most coatings are not so toxic and protective clothing and proper equipment can provide full protection. Any worker sensitive to heights should not work on ladders, scaffolds, or rigs.

5.1.2 Hazards Associated with Coating Materials and Equipment

Most paint materials are hazardous to some degree. All paints, except water-based paints are flammable; many are toxic, and others can irritate the skin. However, most paints are quite safe to use if simple precautions are followed every time.

Among paint raw materials, solvents, resins and solvent based drier solutions are flammable. Some solid materials such as metallic powders carry explosion risk. Products such as fungicides used in certain water-based paints are toxic. Powder raw materials such as pigments and extenders pose risk of inhalation. All these materials need to be handled with appropriate personal protective equipment and, following all safety instructions correctly.

Surface preparation materials like solvents, acid or alkali cleaners can cause skin irritation if not used with care.

Due precautions need to be observed during the use of high pressure abrasive or water blasting methods for surface preparation. Safety gear should be used when using ladders, scaffolds and rigs for working at heights.

Slippery floors and obstacles located on the floor may cause falls.

Electrical /mechanical equipment may produce shocks or other serious injuries if not handled with care. An obvious hazardous location is the interior of a tank at a paint factory or at a customer site. Deviations or taking short cuts and not following proper procedures may produce unsafe working conditions which may result in accidents, loss of life, time and materials.

5.1.3 Chemical Hazards

Chemical manufacturers are required to evaluate chemicals produced to determine if they are hazardous. The manufacturer reviews the chemical substance to determine if it is carcinogenic, toxic, irritant or dangerous to human organs, flammable, explosive, or reactive. This information is available in the material safety data sheets (MSDS) that are supplied with materials.

What is a Material Safety Data Sheet (MSDS)?

A Material Safety Data Sheet (MSDS) is an information sheet that lists the hazards, safety and emergency measures related to specific products. An MSDS is required for industrial products used in the workplace like chemicals, paint, thinners, pretreatment chemicals and cleaners.

Why do I need to use an MSDS?

You may want to know if there are chemicals in the products that can cause adverse health effects such as allergies or asthma during its handling and use. This information may be helpful to prevent exposure to chemicals from new products or in finding out if existing products may be causing symptoms.

Where can I get an MSDS?

Suppliers provide a MSDS for each product supplied to the customer. This may be available with the safety department of your company. You may also obtain an MSDS from data bank available on internet.

Why is an MSDS sheet required for a medical emergency?

In an emergency, the doctor can request an MSDS, to understand the nature of the hazard and the anti-dote recommended for treatment.

Where can I get more Information?

Some product labels include a full list of ingredients. Some suppliers will provide a full list if you request it. You can also ask the supplier's chemist for more information, including a list of additional ingredients.

Are all ingredients Included in MSDS?

No. Only specific hazardous chemicals are mentioned on a MSDS. Thus, perfume or a chemical odorant that may not be considered hazardous may not show up in the MSDS. Manufacturers do not disclose information they consider proprietary. Such information may relate to the chemical composition.


The MSDS lists each required substance that makes up more than 1 per cent of the product. However, if the chemical causes cancer, respiratory sensitisation, or reproductive effects, then it must be listed even if it makes up more than 0.1 per cent.

How much of a chemical is a problem?

It is important to consider several factors to determine if you should be concerned. For example, the quantity, toxicity and other effects, and the potential exposures of each chemical are important to think about. It is also important to know that most of the information on an MSDS relates to exposure to one chemical at a time.

Notes



	Material Safety Data Sheet	Identity No.	GHS - IPA - 001
	ISOPROPYL ALCOHOL CAS No. : 67-63-0	Page	1/10

0

1. Product and company identification

1) Product name : ISOPROPYL ALCOHOL
 2) Advisable use and Restriction
 ◦ Advisable use
 - Solvent (oils, gums, waxes, resins, alkaloids, cements, primers, varnishes, paints, printing inks)
 - Medical (antiseptic disinfectant for home, hospital, and industry ; rubbing alcohol)
 ◦ Restriction of product using : Not available
 3) Manufacturer/Supplier/Distributor information
 ◦ Company : LG Chem, LTD. Acrylates plant
 ◦ Address : 70-1, Hwachi-dong, Yeosu-si, Jeollanam-do
 ◦ Emergency response number : 061-690-1331
 ◦ Respondent: 2AA Team

2. Hazard identification

1) GHS classification of the substance:
 - Flammable liquid: Category 2
 - Eye Damage/Irritation : Category 2A
 - Specific target organ toxicity (single exposure) : Category 3(respiratory tract irritation, narcotic effect)


2) GHS label elements, including precautionary statements
 ◦ Pictogram and symbol :

 ◦ Signal word: Danger
 ◦ Hazard statements
 H225: Highly flammable liquid and vapour
 H319: Causes serious eye damage
 H335: May cause respiratory irritation
 H336: May cause drowsiness or dizziness
 ◦ Precautionary statements:
 - Precaution:
 P210: Keep away from heat/sparks/open flames/ hot surfaces - No smoking.
 P233: Keep container tightly closed.
 P240: Ground/bond container and receiving equipment.
 P241: Use explosion-proof electrical/ventilating/lighting equipment.

Fig 5.1.3: Material Safety Data Sheet (freenergystore.com)

Technical Terms: Listed below are some definitions of terms you may find on an MSDS.

- Carcinogen: causes cancer
- Hormonal: some chemicals act like hormones
- Reproductive toxin: damages the male or female sex organs, sperm, or eggs
- Sensitisation: a body response which makes you react to a smaller amount than before
- Teratogen: causes developmental abnormalities to the foetus (unborn child)
- Toxin/toxic: poison/poisonous

UNIT 5.2 Waste Disposal

Unit Objectives



At the end of this unit, you will be able to:

1. Describe how and why improper waste disposal is hazardous

Impact of dumping waste in the open:

- Water pollution – toxic liquid seeps into surface and groundwater
- Soil pollution – toxins seeps into the soil and surrounding vegetation
- Dump fires – waste decomposition releases inflammable methane which can result into explosion
- Disease – flies, rodents and pets can spread diseases from open dumpsites
- Other impacts – visual ugliness, foul smell, bird menace which can be a hazard to airplane

Waste is treated in an effluent treatment plant, as recommended by the supplier and then disposed of safely, in a specially designed landfill with protective measures to save the environment. Landfills also serve as a backup in case of malfunction in the plant treatment facility.

A good deal of waste is generated even in a simple household painting or polishing job. Such waste includes used sand paper, waste papers, used masking tapes, dust resulting from sanding, waste solvent, waste water after cleaning brushes and containers, empty containers, cotton rags, waste paint etc. It is important to plan, in advance how to minimise such waste and how to safely collect and dispose them off.

Never assume that it is the job of the customer to deal with the waste. Do not throw these sneakily into household waste bins. The waste collection systems in a house or a cooperative housing society may not be designed for such waste.

Discuss the options with the customer before starting the work. At the least most housing waste collectors (such as municipal trucks) would expect the waste to be segregated and handed over. Items that can be recycled (such as used tins and bottles should be sold to scrap dealers who deal in such scrap. Flammables such as solvent soaked cleaning rags should be disposed in a safe manner.

Notes



UNIT 5.3 Use Safety Tools and Personal Protective Equipment (PPE)

Unit Objectives

At the end of this unit, you will be able to:

1. List the different types of personal protective equipment mandatory while working

Personal Protective Equipment (PPE) and their usage is not an option; it must be practiced always without any deviations. In case of emergency, ensure you safeguard yourself first before helping others.

Personal Safety	Ladders	Scaffolding	Power Tools
<ul style="list-style-type: none"> • Use Personal Protective Equipment (PPE) to limit exposure to the eyes while handling powders or while spraying paint • Use regulated air respirator while spraying • Position yourself upwind of object being sprayed 	<ul style="list-style-type: none"> • Use ladders that are stable • Wear shoes with heels • Inspect for loose, worn, or damaged rungs • Do not carry any tools in hand while climbing • While climbing face ladder, never jump from a ladder • Guard against metal ladder coming in contact with electric power lines 	<ul style="list-style-type: none"> • Inspect for damage or deterioration • Ensure scaffolding is plumb and level • Ensure handrailing is provided on all scaffolding 	<ul style="list-style-type: none"> • Verify safety guards are fitted and operational • Dust collection systems are operational when working with hazardous materials

Recommended PPEs

1. Gloves

- a) Nitrile gloves - used against solvent handling / painting
- b) Leather gloves - used against handling hot objects / blasting
- c) Surgical gloves - made up of latex, general purpose
- d) Polyethylene and cotton gloves - in powder coatings / painting

A painter should not use gloves as his hand should connect to the spray gun for grounding of his body. Use of special conductive gloves is recommended.



Fig 5.3 (i): Latex gloves for painting



Fig 5.3 (ii): Gloves for component handling non-skid

2. Masks



Fig 5.3 (iii): Worker with a paint mask

- Solvent mask - Dry charcoal network is used as filter in mask used with cartridge or pre-filtered
- Powder mask - It is used while feeding and it is not efficient than solvent mask

3. Ear plug/Muff



Fig 5.3 (iv): Ear plugs

- Ear plugs are used to protect ears when large sounds are produced
- Ear plus- it can be used for 2 hours
- Non-disposable ear muffs - these can be reused after washing with water

4. Eye shield



Fig 5.3 (v): Eye shield

- Eye shield must be used while spraying and working with dust and powder.
- Eyewash bottle is also used.
- An eye shield can be used for 8 hours

5. Industrial barrier cream

It should be used before work on hand so that any paint can be removed easily.

6. Renal hands rub cream

It is used after work to remove paint on hands.

7. Head guards and steel toe shoes (safety shoes)

They are used while working on the shop floor.



Fig 5.3 (vi): Safety precaution chart

Notes



UNIT 5.4 Handling of Coating Materials and Equipment as per Safety and Environmental Standards

Unit Objectives

At the end of this unit, you will be able to:

1. State how one can practice safe handling of materials and equipment used in painting and coating

Coatings Materials	Pretreatment Chemicals	Safety actions for fire risk	High temperature environments
<ul style="list-style-type: none"> • Read the MSDS. • Avoid excessive skin exposure. • Wear proper respiratory equipment. • Wear proper clothing and eyewear. • Always follow the manufacturers written procedures. 	<ul style="list-style-type: none"> • Read the MSDS • Avoid skin contact • Wear recommended safety clothing • Maintain good ventilation • Always stay alert while handling chemicals 	<ul style="list-style-type: none"> • Eliminate sources of ignition • Maintain a safe concentration of powder/ solvent vapour in air- below 50% of the lower explosion (flammability) limits • Maintain a good ground throughout the racks • Maintain a good ground on everything in the electrostatic coating application system 	<ul style="list-style-type: none"> • Allow the temperature to attain the room temperature before carrying out any work • Disconnect power before entering • Use good lighting when entering • Wear a hard hat in areas where it is necessary to stoop • Never open washer or oven during operation • Know the hazards inside the equipment

Other than the above mentioned, basic elements of combustion such as electrical equipment, matches and cigarettes should be eliminated from site.

Notes

UNIT 5.5 Precautionary Measures

Unit Objectives

At the end of this unit, you will be able to:

1. Learn about ergonomic lifting, bending and moving equipment
2. List what goes into a first aid kit
3. Learn the actions to take during emergency procedures
4. Identify different kinds of safety signs

5.5.1 Ergonomic Lifting, Bending or Moving Equipment and Supplies



Fig 5.5.1 (i): Correct lifting techniques (worldartsme.com)

5.5.2 First Aid



A well-stocked first aid kit is a must at the workplace. It is essential to check the kit regularly and have items such as medications, emergency phone numbers, allergy details of employees and medical assistance numbers in the first aid kit. All expired and out-dated medication should be discarded.

As per Red Cross recommendation, following articles must feature in a first aid box

- 2 absorbent compress dressings
- 25 adhesive bandages (assorted sizes)
- 1 adhesive cloth tape
- 5 antibiotic ointment packets
- 5 antiseptic wipe packets
- 2 packets of aspirin
- 1 blanket
- 1 breathing barrier (with one-way valve)
- 1 instant cold compress
- 2 pair of no latex gloves (size: large)
- 2 hydrocortisone ointment packets
- Scissors
- 1 roller bandage (3 inches wide)
- 1 roller bandage (4 inches wide)
- 5 sterile gauze pads
- 5 sterile gauze pads (4 x 4 inches)
- Oral thermometer (non-mercury)
- 2 triangular bandages
- Tweezers

5.5.3 Emergency Procedures

On rare occasions, you may experience an emergency while working in a coating plant such as:

- Fire
- Medical emergency
- Armed hold up/robbery
- Bomb threat
- Natural disaster

Find out the emergency procedures and evacuation plan for emergency and obtain information on the evacuation plan of the company. Emergency procedures are reviewed from time to time based on the actual incidents. Remember your safety is of utmost importance in case of any emergency. Please refer to your supervisor/manager for specific information regarding your workplace.

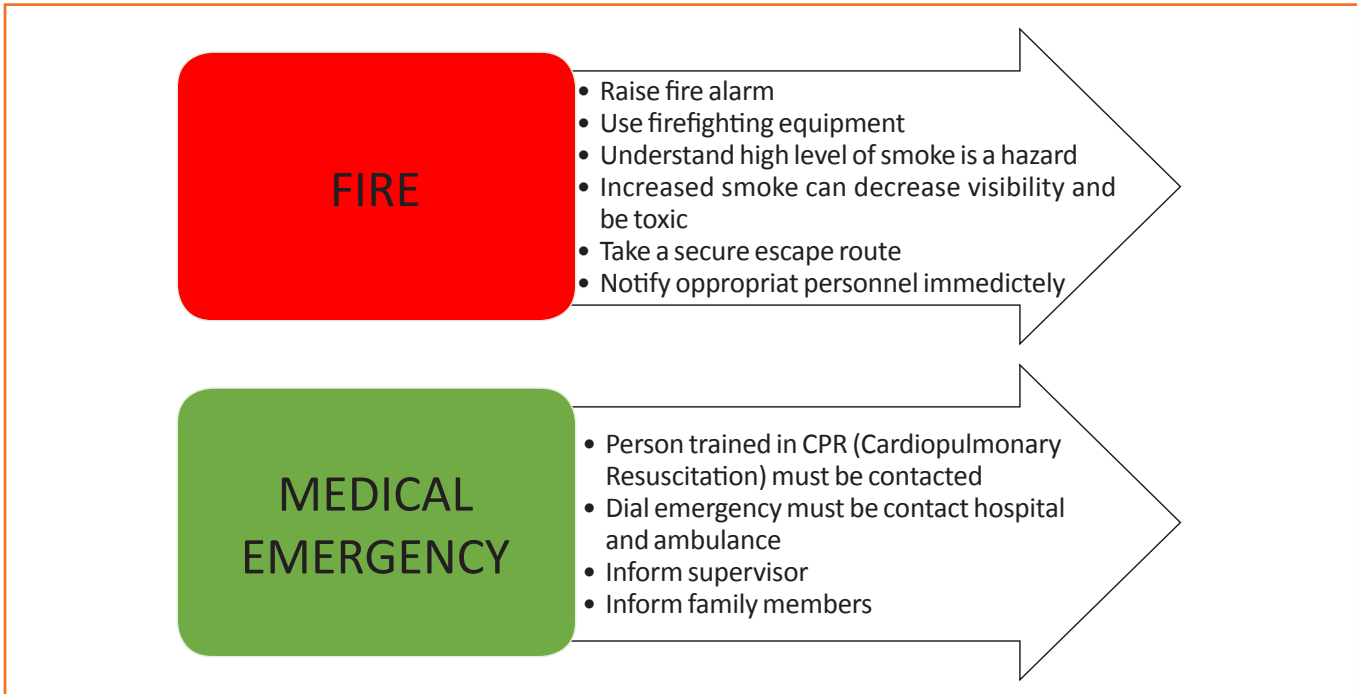
- Evacuation routes and exits are prominently displayed in the building and premises.
- Emergency exits, and evacuation routes must comply with local building codes.

You must know

- Preferred method of reporting
- Evacuation policy and procedures
- Emergency escapes procedures and rout assignments
- List of emergency contact number inside and outside the facility
- Procedure for employess during shutdown of critical operations

You must locate

- Nearest telephone
- Identified restricted areas
- Fire alarm
- Fire extinguisher and fire blankets
- Safety warning tags and signs



5.5.4 Display Safety Signs

- Learn to respect safety signs
- Learn to display them at appropriate places
- It is crucial for your safety and safety of other people
- Never take safety sign instructions lightly





5.5.5 Safety Checklist

As a paint/powder applicator, for all emergency situations, you must

- Know how to report a safety incident
- Understand the evacuation policy and procedures
- Have access to the list of emergency contact numbers inside and outside the facility
- Understand the procedure for employees during shutdown of critical operations
- Never disconnect hose under pressure
- Not leave pressurised unit unattended
- Never point the spray gun at human body
- Ensure the gun has required trigger guard
- Use electrically conductive hose in airless applications
- Ensure that no ignition source is present when flammable materials are used
- Minimise use of low flash point materials
- Check for adequate ventilation

GENERAL SAFETY	<ul style="list-style-type: none"> • Locate nearest telephone • Identify restricted areas • Locate fire alarm • Locate fire extinguisher and fire blankets • Locate moving objects, cranes, and traffic • Identify and observe safety warning tags and signs • Learn facility alarms, evacuation procedures, and general emergency protocols
LADDERS	<ul style="list-style-type: none"> • Periodically inspect for loose, worn, or damaged rungs • Never carry any tools in hand while climbing • Always face ladder while climbing • Never jump from a ladder • Guard against danger of metal ladder coming in contact with electric power lines • Secure the ladder
SCAFFOLDING	<ul style="list-style-type: none"> • Periodically inspect for damage or deterioration • Ensure scaffolding is plumb and level • Ensure handrailing is provided on all scaffolding • Never ride scaffolding on rollers when it is being moved • Verify inspection tags are valid and in place at all times
POWER TOOLS	<ul style="list-style-type: none"> • Ensure safety guards are fitted and operational • Ensure dust collection systems are operational when working with hazardous materials
ABRASIVE BLAST	<ul style="list-style-type: none"> • Ensure that the following are installed and in working order: <ul style="list-style-type: none"> ◇ Deadman valve ◇ Pressure control valves ◇ Adequate moisture and oil separators ◇ Protective clothing (hoods and gloves) ◇ Filtered and regulated air-supplied respirator • Make certain that: <ul style="list-style-type: none"> ◇ Entire system is grounded, including hoses, operator, and work piece ◇ Hose couplings are wired shut ◇ Abrasive hose is stored in a dry place ◇ Abrasive hose is curved around, not bent at 90° angle ◇ Nozzle is never pointed at human body or breakable object ◇ Abrasive hose is inspected for damage and wear

SPRAY APPLICATION	<ul style="list-style-type: none"> • Ensure no ignition sources are present • Minimise use of low flash point materials • Adequate ventilation must always be provided • Ensure spray booth is clear of exhaust fumes from previous spraying • Ensure no rags become soaked with flammable liquid in spray area
PERSONAL PROTECTION	<ul style="list-style-type: none"> • Goggles and safety glasses must be worn at all times • Regulated air respirator must be used always • Operator must always be positioned upwind of object being sprayed
HOSE AND GUN	<ul style="list-style-type: none"> • Hoses must be inspected periodically for weak and worn spots • Hose connections must be correct and tightened • Hose must never be disconnected or recoupled while under pressure • Pressurised unit must never be left unattended • Gun must be grounded through hose connections • Operator uses electrically conductive hose in airless applications.
TEST EQUIPMENT	<ul style="list-style-type: none"> • Holiday detectors must always be grounded • No volatile substances must be present when high voltage detectors are in use • Equipment must be suitable for the environment in which it is being used, e.g., intrinsically safe in hazardous confined spaces

Tips



- Working in a safe, environmentally clean manner without adversely impacting your health and that of your co-workers is not an option, but a mandatory requirement in any job.
- Be conscious of the health hazards posed by various chemicals and substances you use and learn and practice ways of mitigating them.
- Always learn to respect safety signs.
- Make safe working a habit.
- Never take safety sign instructions lightly.

Scan the QR Code to watch the related video



www.pcsc.in/2021/09/09/if-you-are-a-painter-or-aspiring-to-be-we-can-help-you/

Maintain OH&S Standards and Follow Environmental Norms

**PAINTS AND
COATINGS
SKILL COUNCIL**



6. Employability and Entrepreneurship Skills

Unit 6.1 – Personal Strengths & Value Systems

Unit 6.2 – Digital Literacy - A Recap

Unit 6.3 – Money Matters

Unit 6.4 – Preparing for Employment & Self Employment

Unit 6.5 – Understanding Entrepreneurship

Unit 6.6 – Preparing to be an Entrepreneur



Key Learning Outcomes



At the end of this unit, you will be able to:

1. Explain the meaning of health
2. List common health issues
3. Discuss tips to prevent common health issues
4. Explain the meaning of hygiene
5. Discuss the purpose of Swacch Bharat Abhiyan
6. Explain the meaning of habit
7. Discuss ways to set up a safe work environment
8. Discuss critical safety habits to be followed by employees
9. Explain the importance of self-analysis
10. Discuss motivation with the help of Maslow's Hierarchy of Needs
11. Discuss the meaning of achievement motivation
12. List the characteristics of entrepreneurs with achievement motivation
13. List the different factors that motivate you
14. Discuss the role of attitude in self-analysis
15. Discuss how to maintain a positive attitude
16. List your strengths and weaknesses
17. Discuss the qualities of honest people
18. Describe the importance of honesty in entrepreneurs
19. Discuss the elements of a strong work ethic
20. Discuss how to foster a good work ethic
21. List the characteristics of highly creative people
22. List the characteristics of highly innovative people
23. Discuss the benefits of time management
24. List the traits of effective time managers
25. Describe effective time management technique
26. Discuss the importance of anger management
27. Describe anger management strategies
28. Discuss tips for anger management
29. Discuss the causes of stress
30. Discuss the symptoms of stress
31. Discuss tips for stress management
32. Identify the basic parts of a computer
33. Identify the basic parts of a keyboard
34. Recall basic computer terminology
35. Recall the functions of basic computer keys
36. Discuss the main applications of MS Office
37. Discuss the benefits of Microsoft Outlook
38. Discuss the different types of e-commerce
39. List the benefits of e-commerce for retailers and customers
40. Discuss how the Digital India campaign will help boost e-commerce in India
41. Describe how you will sell a product or service on an e-commerce platform

42. Discuss the importance of saving money
43. Discuss the benefits of saving money
44. Discuss the main types of bank accounts
45. Describe the process of opening a bank account
46. Differentiate between fixed and variable costs
47. Describe the main types of investment options
48. Describe the different types of insurance products
49. Describe the different types of taxes
50. Discuss the uses of online banking
51. Discuss the main types of electronic funds transfers
52. Discuss the steps to prepare for an interview
53. Discuss the steps to create an effective Resume
54. Discuss the most frequently asked interview questions
55. Discuss how to answer the most frequently asked interview questions
56. Discuss basic workplace terminology
57. Discuss the concept of entrepreneurship
58. Discuss the importance of entrepreneurship
59. Describe the characteristics of an entrepreneur
60. Describe the different types of enterprises
61. List the qualities of an effective leader
62. Discuss the benefits of effective leadership
63. List the traits of an effective team
64. Discuss the importance of listening effectively
65. Discuss how to listen effectively
66. Discuss the importance of speaking effectively
67. Discuss how to speak effectively
68. Discuss how to solve problems
69. List important problem solving traits
70. Discuss ways to assess problem solving skills
71. Discuss the importance of negotiation
72. Discuss how to negotiate
73. Discuss how to identify new business opportunities
74. Discuss how to identify business opportunities within your business
75. Explain the meaning of entrepreneur
76. Describe the different types of entrepreneurs
77. List the characteristics of entrepreneurs
78. Recall entrepreneur success stories
79. Discuss the entrepreneurial process
80. Describe the entrepreneurship ecosystem
81. Discuss the purpose of the Make in India campaign
82. Discuss key schemes to promote entrepreneurs
83. Discuss the relationship between entrepreneurship and risk appetite
84. Discuss the relationship between entrepreneurship and resilience
85. Describe the characteristics of a resilient entrepreneur

86. Discuss how to deal with failure
87. Discuss how market research is carried out
88. Describe the 4 Ps of marketing
89. Discuss the importance of idea generation
90. Recall basic business terminology
91. Discuss the need for CRM
92. Discuss the benefits of CRM
93. Discuss the need for networking
94. Discuss the benefits of networking
95. Discuss the importance of setting goals
96. Differentiate between short-term, medium-term and long-term goals
97. Discuss how to write a business plan
98. Explain the financial planning process
99. Discuss ways to manage your risk
100. Describe the procedure and formalities for applying for bank finance
101. Discuss how to manage your own enterprise
102. List important questions that every entrepreneur should ask before starting an enterprise

UNIT 6.1 Personal Strengths & Value Systems

Unit Objectives



At the end of this unit, you will be able to:

1. Explain the meaning of health
2. List common health issues
3. Discuss tips to prevent common health issues
4. Explain the meaning of hygiene
5. Discuss the purpose of Swacch Bharat Abhiyan
6. Explain the meaning of habit
7. Discuss ways to set up a safe work environment
8. Discuss critical safety habits to be followed by employees
9. Explain the importance of self-analysis
10. Discuss motivation with the help of Maslow's Hierarchy of Needs
11. Discuss the meaning of achievement motivation
12. List the characteristics of entrepreneurs with achievement motivation
13. List the different factors that motivate you
14. Discuss the role of attitude in self-analysis
15. Discuss how to maintain a positive attitude
16. List your strengths and weaknesses
17. Discuss the qualities of honest people
18. Describe the importance of honesty in entrepreneurs
19. Discuss the elements of a strong work ethic
20. Discuss how to foster a good work ethic
21. List the characteristics of highly creative people
22. List the characteristics of highly innovative people
23. Discuss the benefits of time management
24. List the traits of effective time managers
25. Describe effective time management technique
26. Discuss the importance of anger management
27. Describe anger management strategies
28. Discuss tips for anger management
29. Discuss the causes of stress
30. Discuss the symptoms of stress
31. Discuss tips for stress management

6.1.1 Health, Habits, Hygiene: What is Health?

As per the World Health Organization (WHO), health is a “State of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity.” This means being healthy does not simply mean not being unhealthy – it also means you need to be at peace emotionally, and feel fit physically. For example, you cannot say you are healthy simply because you do not have any physical ailments like a cold or cough. You also need to think about whether you are feeling calm, relaxed and happy.

Common Health Issues

Some common health issues are:

- Allergies
- Asthma
- Skin Disorders
- Depression and Anxiety
- Diabetes
- Cough, Cold, Sore Throat
- Difficulty Sleeping
- Obesity

Tips to Prevent Health Issues

Taking measures to prevent ill health is always better than curing a disease or sickness. You can stay healthy by:

- Eating healthy foods like fruits, vegetables and nuts
- Cutting back on unhealthy and sugary foods
- Drinking enough water everyday
- Not smoking or drinking alcohol
- Exercising for at least 30 minutes a day, 4-5 times a week
- Taking vaccinations when required
- Practicing yoga exercises and meditatio

How many of these health standards do you follow? Tick the ones that apply to you.

1. Get minimum 7-8 hours of sleep every night.
2. Avoid checking email first thing in the morning and right before you go to bed at night.
3. Don't skip meals – eat regular meals at correct meal times.
4. Read a little bit every single day.
5. Eat more home cooked food than junk food.
6. Stand more than you sit.
7. Drink a glass of water first thing in the morning and have at least 8 glasses of water through the day.
8. Go to the doctor and dentist for regular checkups.
9. Exercise for 30 minutes at least 5 days a week.
10. Avoid consuming lots of aerated beverages.

What is Hygiene?

As per the World Health Organization (WHO), “Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases.” In other words, hygiene means ensuring that you do whatever is required to keep your surroundings clean, so that you reduce the chances of spreading germs and diseases.

For instance, think about the kitchen in your home. Good hygiene means ensuring that the kitchen is always spick and span, the food is put away, dishes are washed and dustbins are not overflowing with garbage. Doing all this will reduce the chances of attracting pests like rats or cockroaches, and prevent the growth of fungus and other bacteria, which could spread disease.

How many of these health standards do you follow? Tick the ones that apply to you.

1. Have a bath or shower every day with soap – and wash your hair with shampoo 2-3 times a week.
2. Wear a fresh pair of clean undergarments every day.
3. Brush your teeth in the morning and before going to bed.
4. Cut your fingernails and toenails regularly.
5. Wash your hands with soap after going to the toilet.
6. Use an anti-perspirant deodorant on your underarms if you sweat a lot.
7. Wash your hands with soap before cooking or eating.
8. Stay home when you are sick, so other people don't catch what you have.
9. Wash dirty clothes with laundry soap before wearing them again.
10. Cover your nose with a tissue/your hand when coughing or sneezing.

See how healthy and hygienic you are, by giving yourself 1 point for every ticked statement! Then take a look at what your score means.

Your Score

0-7/20: You need to work a lot harder to stay fit and fine! Make it a point to practice good habits daily and see how much better you feel!

7-14/20: Not bad, but there is scope for improvement! Try and add a few more good habits to your daily routine.

14-20/20: Great job! Keep up the good work! Your body and mind thank you!

Swachh Bharat Abhiyan

We have already discussed the importance of following good hygiene and health practices for ourselves. But, it is not enough for us to be healthy and hygienic. We must also extend this standard to our homes, our immediate surroundings and to our country as a whole.

The ‘Swachh Bharat Abhiyan’ (Clean India Mission) launched by Prime Minister Shri Narendra Modi on 2nd October 2014, believes in doing exactly this. The aim of this mission is to clean the streets and roads of India and raise the overall level of cleanliness. Currently this mission covers 4,041 cities and towns across the country. Millions of our people have taken the pledge for a clean India. You should take the pledge too, and do everything possible to keep our country clean!

What are Habits?

A habit is a behaviour that is repeated frequently. All of us have good habits and bad habits. Keep in mind the phrase by John Dryden: “We first make our habits, and then our habits make us.” This is why it is so important that you make good habits a way of life, and consciously avoid practicing bad habits.

Some good habits that you should make part of your daily routine are:

- Always having a positive attitude
- Making exercise a part of your daily routine
- Reading motivational and inspirational stories
- Smiling! Make it a habit to smile as often as possible
- Making time for family and friends
- Going to bed early and waking up early

Some bad habits that you should quit immediately are:

- Skipping breakfast
- Snacking frequently even when you are not hungry
- Eating too much fattening and sugary food
- Smoking, drinking alcohol and doing drugs
- Spending more money than you can afford
- Worrying about unimportant issues
- Staying up late and waking up late

Tips



- Following healthy and hygienic practices every day will make you feel good mentally and physically.
- Hygiene is two-thirds of health – so good hygiene will help you stay strong and healthy!

6.1.2: Safety: Tips to Design a Safe Workplace

Every employer is obligated to ensure that his workplace follows the highest possible safety protocol. When setting up a business, owners must make it a point to:

- Use ergonomically designed furniture and equipment to avoid stooping and twisting
- Provide mechanical aids to avoid lifting or carrying heavy objects
- Have protective equipment on hand for hazardous jobs
- Designate emergency exits and ensure they are easily accessible
- Set down health codes and ensure they are implemented
- Follow the practice of regular safety inspections in and around the workplace
- Ensure regular building inspections are conducted
- Get expert advice on workplace safety and follow it

Non-Negotiable Employee Safety Habits

Every employee is obligated to follow all safety protocols put in place by the employer. All employees must make it a habit to:

- Immediately report unsafe conditions to a supervisor
- Recognize and report safety hazards that could lead to slips, trips and falls
- Report all injuries and accidents to a supervisor

- Wear the correct protective equipment when required
- Learn how to correctly use equipment provided for safety purposes
- Be aware of and avoid actions that could endanger other people
- Take rest breaks during the day and some time off from work during the week

Tips



- Be aware of what emergency number to call at the time of a workplace emergency
- Practice evacuation drills regularly to avoid chaotic evacuations

6.1.3 Self Analysis – Attitude, Achievement Motivation: What is Self-Analysis?

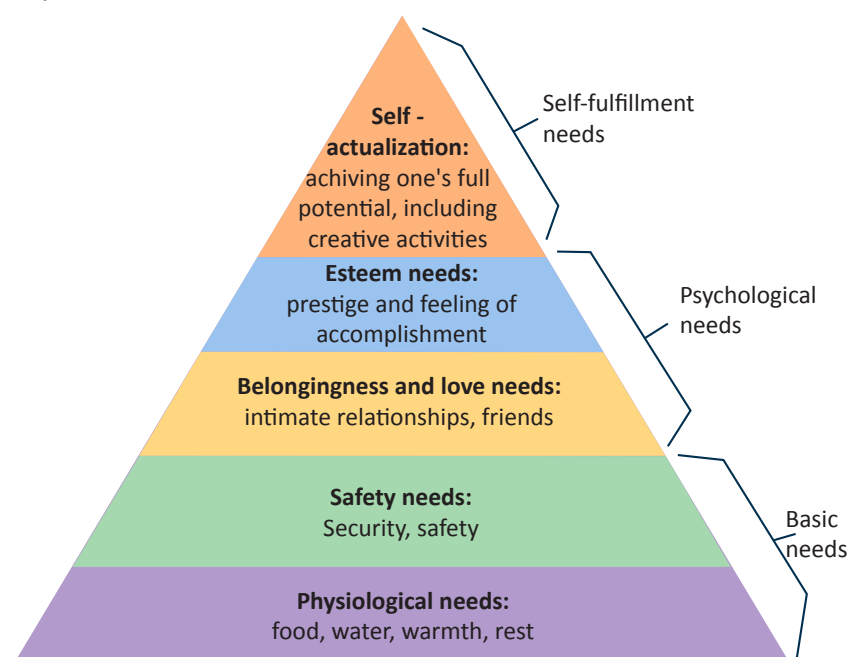
To truly achieve your full potential, you need to take a deep look inside yourself and find out what kind of person you really are. This attempt to understand your personality is known as self-analysis. Assessing yourself in this manner will help you grow, and will also help you to identify areas within yourself that need to be further developed, changed or eliminated. You can better understand yourself by taking a deep look at what motivates you, what your attitude is like, and what your strengths and weaknesses are.

What is Motivation?

Very simply put, motivation is your reason for acting or behaving in a certain manner. It is important to understand that not everyone is motivated by the same desires – people are motivated by many, many different things. We can understand this better by looking at Maslow's Hierarchy of Needs.

Maslow's Hierarchy of Needs

Famous American psychologist Abraham Maslow wanted to understand what motivates people. He believed that people have five types of needs, ranging from very basic needs (called physiological needs) to more important needs that are required for self-growth (called self-actualization needs). Between the physiological and self-actualization needs are three other needs – safety needs, belongingness and love needs, and esteem needs. These needs are usually shown as a pyramid with five levels and are known as Maslow's Hierarchy of Needs.



As you can see from the pyramid, the lowest level depicts the most basic needs. Maslow believed that our behaviour is motivated by our basic needs, until those needs are met. Once they are fulfilled, we move to the next level and are motivated by the next level of needs. Let's understand this better with an example.

Rupa comes from a very poor family. She never has enough food, water, warmth or rest. According to Maslow, until Rupa is sure that she will get these basic needs, she will not even think about the next level of needs – her safety needs. But, once Rupa is confident that her basic needs will be met, she will move to the next level, and her behaviour will then be motivated by her need for security and safety. Once these new needs are met, Rupa will once again move to the next level, and be motivated by her need for relationships and friends. Once this need is satisfied, Rupa will then focus on the fourth level of needs – her esteem needs, after which she will move up to the fifth and last level of needs – the desire to achieve her full potential.

Understanding Achievement Motivation

We now know that people are motivated by basic, psychological and self-fulfillment needs. However, certain people are also motivated by the achievement of highly challenging accomplishments. This is known as Achievement Motivation, or 'need for achievement'.

The level of motivation achievement in a person differs from individual to individual. It is important that entrepreneurs have a high level of achievement motivation – a deep desire to accomplish something important and unique. It is equally important that they hire people who are also highly motivated by challenges and success.

What Motivates You?

What are the things that really motivate you? List down five things that really motivate you. Remember to answer honestly!

I am motivated by:

Characteristics of Entrepreneurs with Achievement Motivation

Entrepreneurs with achievement motivation can be described as follows:

- Unafraid to take risks for personal accomplishment
- Love being challenged
- Future-oriented
- Flexible and adaptive
- Value negative feedback more than positive feedback
- Very persistent when it comes to achieving goals
- Extremely courageous
- Highly creative and innovative
- Restless – constantly looking to achieve more
- Feel personally responsible for solving problems

Think about it:

- How many of these traits do you have?
- Can you think of entrepreneurs who display these traits?

What is Attitude?

Now that we understand why motivation is so important for self-analysis, let's look at the role our attitude plays in better understanding ourselves. Attitude can be described as your tendency (positive or negative), to think and feel about someone or something. Attitude is the foundation for success in every aspect of life. Our attitude can be our best friend or our worst enemy. In other words:

“The only disability in life is a bad attitude.”

When you start a business, you are sure to encounter a wide variety of emotions, from difficult times and failures to good times and successes. Your attitude is what will see you through the tough times and guide you towards success. Attitude is also infectious. It affects everyone around you, from your customers to your employees to your investors. A positive attitude helps build confidence in the workplace while a negative attitude is likely to result in the demotivation of your people.

How to Cultivate a Positive Attitude?

The good news is attitude is a choice. So it is possible to improve, control and change our attitude, if we decide we want to! The following tips help foster a positive mindset:

- Remember that you control your attitude, not the other way around
- Devote at least 15 minutes a day towards reading, watching or listening to something positive
- Avoid negative people who only complain and stop complaining yourself
- Expand your vocabulary with positive words and delete negative phrases from your mind
- Be appreciative and focus on what's good in yourself, in your life, and in others
- Stop thinking of yourself as a victim and start being proactive
- Imagine yourself succeeding and achieving your goals

What Are Your Strengths and Weaknesses?

Another way to analyze yourself is by honestly identifying your strengths and weaknesses. This will help you use your strengths to your best advantage and reduce your weaknesses.

Note down all your strengths and weaknesses in the two columns below. Remember to be honest with yourself!

Strengths	Weaknesses

Tips



- Achievement motivation can be learned.
- Don't be afraid to make mistakes.
- Train yourself to finish what you start.
- Dream big.

6.1.4 Honesty & Work Ethics: What is Honesty?

Honesty is the quality of being fair and truthful. It means speaking and acting in a manner that inspires trust. A person who is described as honest is seen as truthful and sincere, and as someone who isn't deceitful or devious and doesn't steal or cheat. There are two dimensions of honesty – one is honesty in communication and the other is honesty in conduct.

Honesty is an extremely important trait because it results in peace of mind and builds relationships that are based on trust. Being dishonest, on the other hand, results in anxiety and leads to relationships full of distrust and conflict.

Qualities of Honest People

Honest individuals have certain distinct characteristics. Some common qualities among honest people are:

1. They don't worry about what others think of them. They believe in being themselves – they don't bother about whether they are liked or disliked for their personalities.
2. They stand up for their beliefs. They won't think twice about giving their honest opinion, even if they are aware that their point of view lies with the minority.
3. They are thick-skinned. This means they are not affected by others judging them harshly for their honest opinions.
4. They forge trusting, meaningful and healthy friendships. Honest people usually surround themselves with honest friends. They have faith that their friends will be truthful and upfront with them at all times.
5. They are trusted by their peers. They are seen as people who can be counted on for truthful and objective feedback and advice.

Importance of Honesty in Entrepreneurs

One of the most important characteristics of entrepreneurs is honesty. When entrepreneurs are honest with their customers, employees and investors, it shows that they respect those that they work with. It is also important that entrepreneurs remain honest with themselves. Let's look at how being honest would lead to great benefits for entrepreneurs.

- **Honesty and customers:** When entrepreneurs are honest with their customers it leads to stronger relationships, which in turn results in business growth and a stronger customer network.
- **Honesty and employees:** When entrepreneurs build honest relationships with their employees, it leads to more transparency in the workplace, which results in higher work performance and better results.
- **Honesty and investors:** For entrepreneurs, being honest with investors means not only sharing strengths but also candidly disclosing current and potential weaknesses, problem areas and solution strategies. Keep in mind that investors have a lot of experience with startups and are aware that all new companies have problems. Claiming that everything is perfectly fine and running smoothly is a red flag for most investors.
- **Honesty with oneself:** The consequences of being dishonest with oneself can lead to dire results, especially in the case of entrepreneurs. For entrepreneurs to succeed, it is critical that they remain realistic about their situation at all times, and accurately judge every aspect of their enterprise for what it truly is.

What are Work Ethics?

Being ethical in the workplace means displaying values like honesty, integrity and respect in all your decisions and communications. It means not displaying negative qualities like lying, cheating and stealing.

Workplace ethics play a big role in the profitability of a company. It is as crucial to an enterprise as high morale and teamwork. This is why most companies lay down specific workplace ethic guidelines that must compulsorily be followed by their employees. These guidelines are typically outlined in a company's employee handbook.

Elements of a Strong Work Ethic

An entrepreneur must display strong work ethics, as well as hire only those individuals who believe in and display the same level of ethical behavior in the workplace. Some elements of a strong work ethic are:

- **Professionalism:** This involves everything from how you present yourself in a corporate setting to the manner in which you treat others in the workplace.
- **Respectfulness:** This means remaining poised and diplomatic regardless of how stressful or volatile a situation is.
- **Dependability:** This means always keeping your word, whether it's arriving on time for a meeting or delivering work on time.
- **Dedication:** This means refusing to quit until the designated work is done, and completing the work at the highest possible level of excellence.
- **Determination:** This means embracing obstacles as challenges rather than letting them stop you, and pushing ahead with purpose and resilience to get the desired results.
- **Accountability:** This means taking responsibility for your actions and the consequences of your actions, and not making excuses for your mistakes.
- **Humility:** This means acknowledging everyone's efforts and hard work, and sharing the credit for accomplishments.

How to Foster a Good Work Ethic?

As an entrepreneur, it is important that you clearly define the kind of behaviour that you expect from each and every team member in the workplace. You should make it clear that you expect employees to display positive work ethics like:

- **Honesty:** All work assigned to a person should be done with complete honesty, without any deceit or lies.
- **Good attitude:** All team members should be optimistic, energetic, and positive.
- **Reliability:** Employees should show up where they are supposed to be, when they are supposed to be there.
- **Good work habits:** Employees should always be well groomed, never use inappropriate language, conduct themselves professionally at all times, etc.
- **Initiative:** Doing the bare minimum is not enough. Every team member needs to be proactive and show initiative.
- **Trustworthiness:** Trust is non-negotiable. If an employee cannot be trusted, it's time to let that employee go.
- **Respect:** Employees need to respect the company, the law, their work, their colleagues and themselves.
- **Integrity:** Each and every team member should be completely ethical and must display above board behaviour at all times.
- **Efficiency:** Efficient employees help a company grow while inefficient employees result in a waste of time and resources.

Tips



- Don't get angry when someone tells you the truth and you don't like what you hear.
- Always be willing to accept responsibility for your mistakes.

6.1.5 Creativity & Innovation : What is Creativity?

Creativity means thinking outside the box. It means viewing things in new ways or from different perspectives, and then converting these ideas into reality. Creativity involves two parts: thinking and producing. Simply having an idea makes you imaginative, not creative. However, having an idea and acting on it makes you creative.

Characteristics of Highly Creative People

Some characteristics of creative people are:

- They are imaginative and playful
- They see issues from different angles
- They notice small details
- They have very little tolerance for boredom
- They detest rules and routine
- They love to daydream
- They are very curious

What is Innovation?

There are many different definitions of innovation. In simple terms, innovation means turning an idea into a solution that adds value. It can also mean adding value by implementing a new product, service or process, or significantly improving on an existing product, service or process.

Characteristics of Highly Innovative People

Some characteristics of highly innovative people are:

- They embrace doing things differently
- They don't believe in taking shortcuts
- They are not afraid to be unconventional
- They are highly proactive and persistent
- They are organized, cautious and risk-averse

Tips



- Take regular breaks from your creative work to recharge yourself and gain fresh perspective.
- Build prototypes frequently, test them out, get feedback, and make the required changes.

6.1.6 Time Management: What is Time Management?

Time management is the process organizing your time, and deciding how to allocate your time between different activities. Good time management is the difference between working smart (getting more done in less time) and working hard (working for more time to get more done).

Effective time management leads to an efficient work output, even when you are faced with tight deadlines and high pressure situations. On the other hand, not managing your time effectively results in inefficient output and increases stress and anxiety.

Benefits of Time Management

Time management can lead to huge benefits like:

- Greater productivity
- Better professional reputation
- Higher chances for career advancement
- Higher efficiency
- Reduced stress
- Greater opportunities to achieve goals

Not managing time effectively can result in undesirable consequences like:

- Missing deadlines
- Substandard work quality
- Stalled career
- Inefficient work output
- Poor professional reputation
- Increase in stress and anxiety

Traits of Effective Time Managers

Some traits of effective time managers are:

- They begin projects early
- They set daily objectives
- They modify plans if required, to achieve better results
- They are flexible and open-minded
- They inform people in advance if their help will be required
- They know how to say no
- They break tasks into steps with specific deadlines
- They continually review long term goals
- They think of alternate solutions if and when required
- They ask for help when required
- They create backup plans

Effective Time Management Techniques

You can manage your time better by putting into practice certain time management techniques. Some helpful tips are:

- Plan out your day as well as plan for interruptions. Give yourself at least 30 minutes to figure out your time plan. In your plan, schedule some time for interruptions.
- Put up a “Do Not Disturb” sign when you absolutely have to complete a certain amount of work.
- Close your mind to all distractions. Train yourself to ignore ringing phones, don’t reply to chat messages and disconnect from social media sites.
- Delegate your work. This will not only help your work get done faster, but will also show you the unique skills and abilities of those around you.
- Stop procrastinating. Remind yourself that procrastination typically arises due to the fear of failure or the belief that you cannot do things as perfectly as you wish to do them.
- Prioritize. List each task to be completed in order of its urgency or importance level. Then focus on completing each task, one by one.
- Maintain a log of your work activities. Analyze the log to help you understand how efficient you are, and how much time is wasted every day.
- Create time management goals to reduce time wastage.

Tips

- Always complete the most important tasks first.
- Get at least 7 – 8 hours of sleep every day.
- Start your day early.
- Don’t waste too much time on small, unimportant details.
- Set a time limit for every task that you will undertake.
- Give yourself some time to unwind between tasks.

6.1.7 Anger Management: What is Anger Management?

Anger management is the process of:

1. Learning to recognize the signs that you, or someone else, is becoming angry
2. Taking the best course of action to calm down the situation in a positive way

Anger management does not mean suppressing anger.

Importance of Anger Management

Anger is a perfectly normal human emotion. In fact, when managed the right way, anger can be considered a healthy emotion. However, if it is not kept in check, anger can make us act inappropriately and can lead to us saying or doing things that we will likely later regret.

Extreme anger can:

- **Hurt you physically:** It leads to heart disease, diabetes, a weakened immune system, insomnia, and high blood pressure.
- **Hurt you mentally:** It can cloud your thinking and lead to stress, depression and mental health issues.
- **Hurt your career:** It can result in alienating your colleagues, bosses, clients and lead to the loss of respect.
- **Hurt your relationships:** It makes it hard for your family and friends to trust you, be honest with you and feel comfortable around you.

This is why anger management, or managing anger appropriately, is so important.

Anger Management Strategies

Here are some strategies that can help you control your anger:

Strategy 1: Relaxation

Something as simple as breathing deeply and looking at relaxing images works wonders in calming down angry feelings. Try this simple breathing exercise:

1. Take a deep breath from your diaphragm (don't breathe from your chest)
2. Visualize your breath coming up from your stomach
3. Keep repeating a calming word like 'relax' or 'take it easy' (remember to keep breathing deeply while repeating the word)
4. Picture a relaxing moment (this can be from your memory or your imagination)

Follow this relaxation technique daily, especially when you realize that you're starting to feel angry.

Strategy 2: Cognitive Restructuring

Cognitive restructuring means changing the manner in which you think. Anger can make you curse, swear, exaggerate and act very dramatically. When this happens, force yourself to replace your angry thoughts with more logical ones. For instance, instead of thinking 'Everything is ruined' change your mindset and tell yourself 'It's not the end of the world and getting angry won't solve this'.

Strategy 3: Problem Solving

Getting angry about a problem that you cannot control is a perfectly natural response. Sometimes, try as you may, there may not be a solution to the difficulty you are faced with. In such cases, stop focusing on solving the problem, and instead focus on handling and facing the problem. Remind yourself that you will do your best to deal with the situation, but that you will not blame yourself if you don't get the solution you desire.

Strategy 4: Better Communication

When you're angry, it is very easy to jump to inaccurate conclusions. In this case, you need to force yourself to stop reacting, and think carefully about what you want to say, before saying it. Avoid saying

the first thing that enters your head. Force yourself to listen carefully to what the other person is saying. Then think about the conversation before responding.

Strategy 5: Changing Your Environment

If you find that your environment is the cause of your anger, try and give yourself a break from your surroundings. Make an active decision to schedule some personal time for yourself, especially on days that are very hectic and stressful. Having even a brief amount of quiet or alone time is sure to help calm you down.

Tips for Anger Management

The following tips will help you keep your anger in check:

- Take some time to collect your thoughts before you speak out in anger.
- Express the reason for your anger in an assertive, but non-confrontational manner once you have calmed down.
- Do some form of physical exercise like running or walking briskly when you feel yourself getting angry.
- Make short breaks part of your daily routine, especially during days that are stressful.
- Focus on how to solve a problem that's making you angry, rather than focusing on the fact that the problem is making you angry.

Tips



- Try to forgive those who anger you, rather than hold a grudge against them.
- Avoid using sarcasm and hurling insults. Instead, try and explain the reason for your frustration in a polite and mature manner.

6.1.8 Stress Management: What is Stress?

We say we are 'stressed' when we feel overloaded and unsure of our ability to deal with the pressures placed on us. Anything that challenges or threatens our well-being can be defined as a stress. It is important to note that stress can be good and bad. While good stress keeps us going, negative stress undermines our mental and physical health. This is why it is so important to manage negative stress effectively.

Causes of Stress

Stress can be caused by internal and external factors.

Internal causes of stress

- Constant worry
- Rigid thinking
- Unrealistic expectations
- Pessimism
- Negative self-talk
- All in or all out attitude

External causes of stress

- Major life changes
- Difficulties with relationships
- Having too much to do
- Difficulties at work or in school
- Financial difficulties
- Worrying about one's children and/or family

Cognitive Symptoms	Emotional Symptoms
<ul style="list-style-type: none"> • Memory problems • Concentration issues • Lack of judgement • Pessimism • Anxiety • Constant worrying 	<ul style="list-style-type: none"> • Depression • Agitation • Irritability • Loneliness • Anxiety • Anger
Physical Symptoms	Behavioral Symptoms
<ul style="list-style-type: none"> • Aches and pain • Diarrhea or constipation • Nausea • Dizziness • Chest pain and/or rapid heartbeat • Frequent cold or flu like feelings 	<ul style="list-style-type: none"> • Increase or decrease in appetite • Over sleeping or not sleeping enough • Withdrawing socially • Ignoring responsibilities • Consumption of alcohol or cigarettes • Nervous habits like nail biting, pacing etc.

Tips to Manage Stress

The following tips can help you manage your stress better:

- Note down the different ways in which you can handle the various sources of your stress.
- Remember that you cannot control everything, but you can control how you respond.
- Discuss your feelings, opinions and beliefs rather than reacting angrily, defensively or passively.
- Practice relaxation techniques like meditation, yoga or tai chi when you start feeling stressed.
- Devote a part of your day towards exercise.
- Eat healthy foods like fruits and vegetables. Avoid unhealthy foods especially those containing large amounts of sugar.
- Plan your day so that you can manage your time better, with less stress.
- Say no to people and things when required.
- Schedule time to pursue your hobbies and interests.
- Ensure you get at least 7-8 hours of sleep.
- Reduce your caffeine intake.
- Increase the time spent with family and friends.

Tips



- Force yourself to smile even if you feel stressed. Smiling makes us feel relaxed and happy.
- Stop yourself from feeling and thinking like a victim. Change your attitude and focus on being proactive.

Scan the QR Code to watch the related video



www.youtube.com/watch?v=zLHiWjMFYUU

Maslow's Hierarchy Needs

UNIT 6.2 Digital Literacy - A Recap

Unit Objectives

At the end of this unit, you will be able to:

1. Identify the basic parts of a computer
2. Identify the basic parts of a keyboard
3. Recall basic computer terminology
4. Recall the functions of basic computer keys
5. Discuss the main applications of MS Office
6. Discuss the benefits of Microsoft Outlook
7. Discuss the different types of e-commerce
8. List the benefits of e-commerce for retailers and customers
9. Discuss how the Digital India campaign will help boost e-commerce in India
10. Describe how you will sell a product or service on an e-commerce platform

6.2.1 Computer and Internet basics: Basic Parts of a Computer

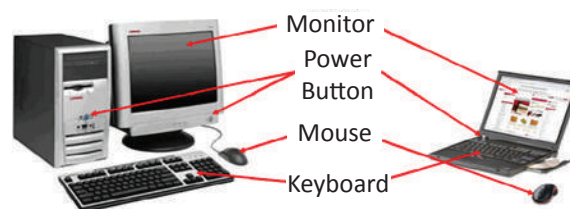


Fig.6.2.1. Parts of a Computer

- **Central Processing Unit (CPU):** The brain of the computer. It interprets and carries out program instructions.
- **Hard Drive:** A device that stores large amounts of data.
- **Monitor:** The device that contains the computer screen where the information is visually displayed.
- **Mouse:** A hand-held device used to point to items on the monitor.
- **Speakers:** Devices that enable you to hear sound from the computer.
- **Printer:** A device that converts output from a computer into printed paper documents.

Basic Parts of a Keyboard

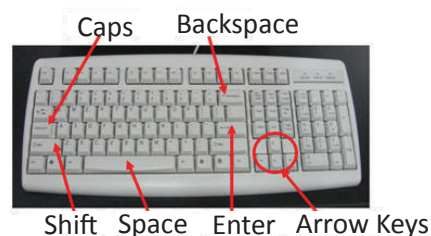


Fig.6.2.2. Parts of a Keyboard

- **Arrow Keys:** Press these keys to move your cursor.
- **Space bar:** Adds a space.
- **Enter/Return:** Moves your cursor to a new line.

- **Shift:** Press this key if you want to type a capital letter or the upper symbol of a key.
- **Caps Lock:** Press this key if you want all the letters you type to be capital letters. Press it again to revert back to typing lowercase letters.
- **Backspace:** Deletes everything to the left of your cursor.

Basic Internet Terms

- **The Internet:** A vast, international collection of computer networks that transfers information.
- **The World Wide Web:** A system that lets you access information on the Internet.
- **Website:** A location on the World Wide Web (and Internet) that contains information about a specific topic.
- **Homepage:** Provides information about a website and directs you to other pages on that website.
- **Link/Hyperlink:** A highlighted or underlined icon, graphic, or text that takes you to another file or object.
- **Web Address/URL:** The address for a website.
- **Address Box:** A box in the browser window where you can type in a web address.

Tips



- When visiting a .com address, there no need to type http:// or even www. Just type the name of the website and then press Ctrl + Enter. (Example: Type 'apple' and press Ctrl + Enter to go to www.apple.com)
- Press the Ctrl key and press the + or - to increase and decrease the size of text.
- Press F5 or Ctrl + R to refresh or reload a web page.

6.2.2 MS Office and Email: About MS Office

MS Office or Microsoft Office is a suite of computer programs developed by Microsoft. Although meant for all users, it offers different versions that cater specifically to students, home users and business users. All the programs are compatible with both, Windows and Macintosh.

Most Popular Office Products

Some of the most popular and universally used MS Office applications are:

- **Microsoft Word:** Allows users to type text and add images to a document.
- **Microsoft Excel:** Allows users to enter data into a spreadsheet and create calculations and graphs.
- **Microsoft PowerPoint:** Allows users to add text, pictures and media and create slideshows and presentations.
- **Microsoft Outlook:** Allows users to send and receive email.
- **Microsoft OneNote:** Allows users to make drawings and notes with the feel of a pen on paper.
- **Microsoft Access:** Allows users to store data over many tables.

Why Choose Microsoft Outlook?

A popular email management choice especially in the workplace, Microsoft Outlook also includes an address book, notebook, web browser and calendar. Some major benefits of this program are:

- **Integrated search function:** You can use keywords to search for data across all Outlook programs.
- **Enhanced security:** Your email is safe from hackers, junk mail and phishing website email.
- **Email syncing:** Sync your mail with your calendar, contact list, notes in OneNote and...your phone!
- **Offline access to email:** No Internet? No problem! Write emails offline and send them when you're connected again.

Tips

- Press Ctrl+R as a shortcut method to reply to email.
- Set your desktop notifications only for very important emails.
- Flag messages quickly by selecting messages and hitting the Insert key.
- Save frequently sent emails as a template to reuse again and again.
- Conveniently save important emails as files.

6.2.3 E-Commerce: What is E-Commerce?

E-commerce is the buying or selling of goods and services, or the transmitting of money or data, electronically on the internet. E-Commerce is the short form for “electronic commerce.”

Examples of E-Commerce

Some examples of e-commerce are:

- Online shopping
- Online auctions
- Online ticketing
- Electronic payments
- Internet banking

Types of E-Commerce

E-commerce can be classified based on the types of participants in the transaction. The main types of e-commerce are:

- **Business to Business (B2B):** Both the transacting parties are businesses.
- **Business to Consumer (B2C):** Businesses sell electronically to end-consumers.
- **Consumer to Consumer (C2C):** Consumers come together to buy, sell or trade items to other consumers.
- **Consumer-to-Business (C2B):** Consumers make products or services available for purchase to companies looking for exactly those services or products.
- **Business-to-Administration (B2A):** Online transactions conducted between companies and public administration.
- **Consumer-to-Administration (C2A):** Online transactions conducted between individuals and public administration.

Benefits of E-Commerce

The e-commerce business provides some benefits for retailers and customers.

Benefits for retailers:

- Establishes an online presence
- Reduces operational costs by removing overhead costs
- Increases brand awareness through the use of good keywords
- Increases sales by removing geographical and time constraints

Benefits for customers:

- Offers a wider range of choice than any physical store
- Enables goods and services to be purchased from remote locations
- Enables consumers to perform price comparisons

UNIT 6.3 Money Matters

Unit Objectives

At the end of this unit, you will be able to:

1. Discuss the importance of saving money
2. Discuss the benefits of saving money
3. Discuss the main types of bank accounts
4. Describe the process of opening a bank account
5. Differentiate between fixed and variable costs
6. Describe the main types of investment options
7. Describe the different types of insurance products
8. Describe the different types of taxes
9. Discuss the uses of online banking
10. Discuss the main types of electronic funds transfers

6.3.1 Personal Finance – Why to Save?: Importance of Saving

We all know that the future is unpredictable. You never know what will happen tomorrow, next week or next year. That's why saving money steadily through the years is so important. Saving money will help improve your financial situation over time. But more importantly, knowing that you have money stashed away for an emergency will give you peace of mind. Saving money also opens the door to many more options and possibilities.

Benefits of Saving

Inculcating the habit of saving leads to a vast number of benefits. Saving helps you:

- **Become financially independent:** When you have enough money saved up to feel secure you can start making your choices, from taking a vacation whenever you want, to switching careers or starting your own business.
- **Invest in yourself through education:** Through saving, you can earn enough to pay up for courses that will add to your professional experience and ultimately result in higher paying jobs.
- **Get out of debt:** Once you have saved enough as a reserve fund, you can use your savings to pay off debts like loans or bills that have accumulated over time.
- **Be prepared for surprise expenses:** Having money saved enables you to pay for unforeseen expenses like sudden car or house repairs, without feeling financially stressed.
- **Pay for emergencies:** Saving helps you deal with emergencies like sudden health issues or emergency trips without feeling financially burdened.
- **Afford large purchases and achieve major goals:** Saving diligently makes it possible to place down payments towards major purchases and goals, like buying a home or a car.
- **Retire:** The money you have saved over the years will keep you comfortable when you no longer have the income you would get from your job.

Tips

- Break your spending habit. Try not spending on one expensive item per week, and put the money that you would have spent into your savings.
- Decide that you will not buy anything on certain days or weeks and stick to your word.

6.3.2 Types of Bank Accounts, Opening a Bank Account: Types of Bank Accounts

In India, banks offer four main types of bank accounts. These are:

- Current Accounts
- Savings Accounts
- Recurring Deposit Accounts
- Fixed Deposit Accounts

Current Accounts

Current accounts offer the most liquid deposits and thus, are best suited for businessmen and companies. As these accounts are not meant for investments and savings, there is no imposed limit on the number or amount of transactions that can be made on any given day. Current account holders are not paid any interest on the amounts held in their accounts. They are charged for certain services offered on such accounts.

Savings Accounts

Savings accounts are meant to promote savings, and are therefore the number one choice for salaried individuals, pensioners and students. While there is no restriction on the number and amount of deposits made, there are usually restrictions on the number and amount of withdrawals. Savings account holders are paid interest on their savings.

Recurring Deposit Accounts

Recurring Deposit accounts, also called RD accounts, are the accounts of choice for those who want to save an amount every month, but are unable to invest a large sum at one time. Such account holders deposit a small, fixed amount every month for a pre-determined period (minimum 6 months). Defaulting on a monthly payment results in the account holder being charged a penalty amount. The total amount is repaid with interest at the end of the specified period.

Fixed Deposit Accounts

Fixed Deposit accounts, also called FD accounts, are ideal for those who wish to deposit their savings for a long term in return for a high rate of interest. The rate of interest offered depends on the amount deposited and the time period, and also differs from bank to bank. In the case of an FD, a certain amount of money is deposited by the account holder for a fixed period of time. The money can be withdrawn when the period expires. If necessary, the depositor can break the fixed deposit prematurely. However, this usually attracts a penalty amount which also differs from bank to bank.

Opening a Bank Account



Opening a bank account is quite a simple process. Take a look at the steps to open an account of your own:

Step 1: Fill in the Account Opening Form

This form requires you to provide the following information:

- Personal details (name, address, phone number, date of birth, gender, occupation, address)
- Method of receiving your account statement (hard copy/email)
- Details of your initial deposit (cash/cheque)
- Manner of operating your account (online/mobile banking/traditional via cheque, slip books)

Ensure that you sign wherever required on the form.

Step 2: Affix your Photograph

Stick a recent photograph of yourself in the allotted space on the form.

Step 3: Provide your Know Your Customer (KYC) Details

KYC is a process that helps banks verify the identity and address of their customers. To open an account, every individual needs to submit certain approved documents with respect to photo identity (ID) and address proof. Some Officially Valid Documents (OVDs) are:

- Passport
- Voters' Identity Card
- UIDAI (Aadhaar) Card
- Driving License
- PAN Card

Step 4: Submit All your Documents

Submit the completed Account Opening Form and KYC documents. Then wait until the forms are processed and your account has been opened!

Tips

- Select the right type of account.
- Ask about fees.
- Check for online banking – it's convenient!
- Fill in complete nomination details.
- Understand the rules.
- Keep an eye on your bank balance.

6.3.3 Costs: Fixed vs Variable: What are Fixed and Variable Costs?

Fixed costs and variable costs together make up a company's total cost. These are the two types of costs that companies have to bear when producing goods and services.

A fixed cost does not change with the volume of goods or services a company produces. It always remains the same.

A variable cost, on the other hand, increases and decreases depending on the volume of goods and services produced. In other words, it varies with the amount produced.

Differences Between Fixed and Variable Costs

Let's take a look at some of the main differences between fixed and variable costs:

Criteria	Fixed Costs	Variable Costs
Meaning	A cost that stays the same, regardless of the output produced.	A cost that changes when the output changes.
Nature	Time related.	Volume related.
Incurred	Incurred irrespective of units being produced.	Incurred only when units are produced.
Unit cost	Inversely proportional to the number of units produced.	Remains the same, per unit.
Examples	Depreciation, rent, salary, insurance, tax etc.	Material consumed, wages, commission on sales, packing expenses, etc.

Tips



- When trying to determine whether a cost is fixed or variable, simply ask the following question: Will the particular cost change if the company stopped its production activities? If the answer is no, then it is a fixed cost. If the answer is yes, then it is probably a variable cost.

6.3.4 Investment, Insurance and Taxes: Investment

Investment means that money is spent today with the aim of reaping financial gains at a future time. The main types of investment options are as follows:

- **Bonds:** Bonds are instruments used by public and private companies to raise large sums of money – too large to be borrowed from a bank. These bonds are then issued in the public market and are bought by lenders.
- **Stocks:** Stocks or equity are shares that are issued by companies and are bought by the general public.
- **Small Savings Schemes:** Small Savings Schemes are tools meant to save money in small amounts. Some popular schemes are the Employees Provident Fund, Sukanya Samriddhi Scheme and National Pension Scheme.
- **Mutual Funds:** Mutual Funds are professionally managed financial instruments that invest money in different securities on behalf of investors.
- **Fixed Deposits:** A fixed amount of money is kept aside with a financial institution for a fixed amount of time in return for interest on the money.
- **Real Estate:** Loans are taken from banks to purchase real estate, which is then leased or sold with the aim of making a profit on the appreciated property price.
- **Hedge Funds:** Hedge funds invest in both financial derivatives and/or publicly traded securities.
- **Private Equity:** Private Equity is trading in the shares of an operating company that is not publicly listed and whose shares are not available on the stock market.
- **Venture Capital:** Venture Capital involves investing substantial capital in a budding company in return for stocks in that company.

Insurance

There are two types of insurance – Life Insurance and Non-Life or General Insurance.

Life Insurance

Life Insurance deals with all insurance covering human life.

Life Insurance Products

The main life insurance products are:

- **Term Insurance:** This is the simplest and cheapest form of insurance. It offers financial protection for a specified tenure, say 15 to 20 years. In the case of your death, your family is paid the sum assured. In the case of your surviving the term, the insurer pays nothing.
- **Endowment Policy:** This offers the dual benefit of insurance and investment. Part of the premium is allocated towards the sum assured, while the remaining premium gets invested in equity and debt. It pays a lump sum amount after the specified duration or on the death of the policyholder, whichever is earlier.
- **Unit-Linked Insurance Plan (ULIP):** Here part of the premium is spent on the life cover, while the remaining amount is invested in equity and debt. It helps develop a regular saving habit.
- **Money Back Life Insurance:** While the policyholder is alive, periodic payments of the partial survival benefits are made during the policy tenure. On the death of the insured, the insurance company pays the full sum assured along with survival benefits.

- **Whole Life Insurance:** It offers the dual benefit of insurance and investment. It offers insurance cover for the whole life of the person or up to 100 years whichever is earlier.

General Insurance

General Insurance deals with all insurance covering assets like animals, agricultural crops, goods, factories, cars and so on.

General Insurance Products

The main general insurance products are:

- **Motor Insurance:** This can be divided into Four Wheeler Insurance and Two Wheeler Insurance.
- **Health Insurance:** The main types of health insurance are individual health insurance, family floater health insurance, comprehensive health insurance and critical illness insurance.
- **Travel Insurance:** This can be categorised into Individual Travel Policy, Family Travel Policy, Student Travel Insurance and Senior Citizen Health Insurance.
- **Home Insurance:** This protects the house and its contents from risk.
- **Marine Insurance:** This insurance covers goods, freight, cargo etc. against loss or damage during transit by rail, road, sea and/or air.

Taxes

There are two types of taxes – Direct Taxes and Indirect Taxes.

Direct Tax

Direct taxes are levied directly on an entity or a person and are non-transferrable.

Some examples of Direct Taxes are:

- **Income Tax:** This tax is levied on your earning in a financial year. It is applicable to both, individuals and companies.
- **Capital Gains Tax:** This tax is payable whenever you receive a sizable amount of money. It is usually of two types – short term capital gains from investments held for less than 36 months and long term capital gains from investments held for longer than 36 months.
- **Securities Transaction Tax:** This tax is added to the price of a share. It is levied every time you buy or sell shares.
- **Perquisite Tax:** This tax is levied is on perks that have been acquired by a company or used by an employee.
- **Corporate Tax:** Corporate tax is paid by companies from the revenue they earn.

Indirect Tax

Indirect taxes are levied on goods or services.

Some examples of Indirect Taxes are:

- **Sales Tax:** Sales Tax is levied on the sale of a product.
- **Service Tax:** Service Tax is added to services provided in India.
- **Value Added Tax:** Value Added Tax is levied at the discretion of the state government. The tax is levied on goods sold in the state. The tax amount is decided by the state.
- **Customs Duty & Octroi:** Customs Duty is a charge that is applied on purchases that are imported from another country. Octroi is levied on goods that cross state borders within India.
- **Excise Duty:** Excise Duty is levied on all goods manufactured or produced in India.

Tips

- Think about how quickly you need your money back and pick an investment option accordingly.
- Ensure that you are buying the right type of insurance policy for yourself.
- Remember, not paying taxes can result in penalties ranging from fines to imprisonment.

6.3.5 Online Banking, NEFT, RTGS etc.:

What is Online Banking?

Internet or online banking allows account holders to access their account from a laptop at any location. In this way, instructions can be issued. To access an account, account holders simply need to use their unique customer ID number and password.

Internet banking can be used to:

- Find out an account balance
- Transfer amounts from one account to another
- Arrange for the issuance of cheques
- Instruct payments to be made
- Request for a cheque book
- Request for a statement of accounts
- Make a fixed deposit

Electronic Funds Transfers

Electronic funds transfer is a convenient way of transferring money from the comfort of one's own home, using integrated banking tools like internet and mobile banking.

Transferring funds via an electronic gateway is extremely convenient. With the help of online banking, you can choose to:

- Transfer funds into your own accounts of the same bank.
- Transfer funds into different accounts of the same bank.
- Transfer funds into accounts in different banks, using NEFT.
- Transfer funds into other bank accounts using RTGS.
- Transfer funds into various accounts using IMPS.

NEFT

NEFT stands for National Electronic Funds Transfer. This money transfer system allows you to electronically transfer funds from your respective bank accounts to any other account, either in the same bank or belonging to any other bank. NEFT can be used by individuals, firms and corporate organizations to transfer funds between accounts.

In order to transfer funds via NEFT, two things are required:

- A transferring bank
- A destination bank

Before you can transfer funds through NEFT, you will need to register the beneficiary who will be receiving the funds. In order to complete this registration, you will require the following information:

- | | |
|------------------------------|--------------------------------|
| • Recipient's name | • Recipient's bank's name |
| • Recipient's account number | • Recipient's bank's IFSC code |

RTGS

RTGS stands for Real Time Gross Settlement. This is a real time funds transfer system which enables you to transfer funds from one bank to another, in real time or on a gross basis. The transferred amount is immediately deducted from the account of one bank, and instantly credited to the other bank's account. The RTGS payment gateway is maintained by the Reserve Bank of India. The transactions between banks are made electronically.

RTGS can be used by individuals, companies and firms to transfer large sums of money. Before remitting funds through RTGS, you will need to add the beneficiary and his bank account details via your online banking account. In order to complete this registration, you will require the following information:

- Name of the beneficiary
- Beneficiary's account number
- Beneficiary's bank address
- Beneficiary's bank's IFSC code

IMPS

IMPS stands for Immediate Payment Service. This is a real-time, inter-bank, electronic funds transfer system used to transfer money instantly within banks across India. IMPS enables users to make instant electronic transfer payments using mobile phones through both, Mobile Banking and SMS. It can also be used through ATMs and online banking. IMPS is available 24 hours a day and 7 days a week. The system features a secure transfer gateway and immediately confirms orders that have been fulfilled.

To transfer money through IMPS, the you need to:

- Register for IMPS with your bank
- Receive a Mobile Money Identifier (MMID) from the bank
- Receive a MPIN from the bank

Once you have both these, you can login or make a request through SMS to transfer a particular amount to a beneficiary.

For the beneficiary to receive the transferred money, he must:

1. Link his mobile number with his respective account
2. Receive the MMID from the bank

In order to initiate a money transfer through IMPS, you will need to enter the following information:

1. The beneficiary's mobile number
2. The beneficiary's MMID
3. The transfer amount
4. Your MPIN

As soon as money has been deducted from your account and credited into the beneficiary's account, you will be sent a confirmation SMS with a transaction reference number, for future reference.

Differences Between NEFT, RTGS & IMPS

Criteria	NEFT	RTGS	IMPS
Settlement	Done in batches	Real-time	Real-time
Full form	National Electronic Fund Transfer	Real Time Gross Settlement	Immediate Payment Service
Timings on Monday – Friday	8:00 am – 6:30 pm	9:00 am – 4:30 pm	24x7
Timings on Saturday	8:00 am – 1:00 pm	9:00 am – 1:30 pm	24x7

Criteria	NEFT	RTGS	IMPS
Minimum amount of money transfer limit	₹1	₹2 lacs	₹1
Maximum amount of money transfer limit	₹10 lacs	₹10 lacs per day	₹2 lacs
Maximum charges as per RBI	Upto 10,000 – ₹2.5 above 10,000 – 1 lac – ₹5 above 1 – 2 lacs – ₹15 above 2 – 5 lacs – ₹25 above 5 – 10 lacs – ₹25	above 2 – 5 lacs – ₹25 above 5 – 10 lacs – ₹50	Upto 10,000 – ₹5 above 10,000 – 1 lac – ₹5 above 1 – 2 lacs – ₹15

Tips



- Never click on any links in any e-mail message to access your online banking website.
- You will never be asked for your credit or debit card details while using online banking.
- Change your online banking password regularly.

Notes



UNIT 6.4 Preparing for Employment & Self Employment

Unit Objectives

At the end of this unit, you will be able to:

1. Discuss the steps to prepare for an interview
2. Discuss the steps to create an effective Resume
3. Discuss the most frequently asked interview questions
4. Discuss how to answer the most frequently asked interview questions
5. Discuss basic workplace terminology

6.4.1 Interview Preparation: How to Prepare for an Interview?

The success of your getting the job that you want depends largely on how well your interview for that job goes. Therefore, before you go in for your interview, it is important that you prepare for it with a fair amount of research and planning. Take a look at the steps to follow in order to be well prepared for an interview:

1. **Research the organization that you are having the interview with.**
 - Studying the company beforehand will help you be more prepared at the time of the interview. Your knowledge of the organization will help you answer questions at the time of the interview, and will leave you looking and feeling more confident. This is sure to make you stand out from other, not as well informed, candidates.
 - Look for background information on the company. Try and find an overview of the company and its industry profile.
 - Visit the company website to get a good idea of what the company does. A company website offers a wealth of important information. Read and understand the company's mission statement. Pay attention to the company's products/services and client list. Read through any press releases to get an idea of the company's projected growth and stability.
 - Note down any questions that you have after your research has been completed.
2. **Think about whether your skills and qualifications match the job requirements.**
 - Carefully read through and analyze the job description.
 - Make a note of the knowledge, skills and abilities required to fulfill the job requirements.
 - Take a look at the organization hierarchy. Figure out where the position you are applying for fits into this hierarchy.
3. **Go through the most typical interview questions asked, and prepare your responses.**
 - Remember, in most interviews a mix of resume-based, behavioral and case study questions are asked.
 - Think about the kind of answers you would like to provide to typical questions asked in these three areas.
 - Practice these answers until you can express them confidently and clearly.
4. **Plan your attire for the interview.**
 - It is always safest to opt for formal business attire, unless expressly informed to dress in business casual (in which case you should use your best judgement).
 - Ensure that your clothes are clean and well-ironed. Pick neutral colours – nothing too bright or flashy.

- The shoes you wear should match your clothes, and should be clean and suitable for an interview.
- Remember, your aim is to leave everyone you meet with the impression that you are a professional and highly efficient person.

5. Ensure that you have packed everything that you may require during the interview.

- Carry a few copies of your resume. Use a good quality paper for your resume print outs.
- Always take along a notepad and a pen.
- Take along any information you may need to refer to, in order to fill out an application form.
- Carry a few samples of your work, if relevant.

6. Remember the importance of non-verbal communication.

- Practice projecting confidence. Remind yourself to smile and make eye contact. Practice giving a firm handshake.
- Keep in mind the importance of posture. Practice sitting up straight. Train yourself to stop nervous gestures like fidgeting and foot-tapping.
- Practice keeping your reactions in check. Remember, your facial expressions provide a good insight into your true feelings. Practice projecting a positive image.

7. Make a list of questions to end the interview with.

- Most interviews will end with the interviewer(s) asking if you have any questions. This is your chance to show that you have done your research and are interested in learning more about the company.
- If the interviewer does not ask you this question, you can inform him/her that you have some queries that you would like to discuss. This is the time for you to refer to the notes you made while studying the company.
- Some good questions to ask at this point are:
 - What do you consider the most important criteria for success in this job?
 - How will my performance be evaluated?
 - What are the opportunities for advancement?
 - What are the next steps in the hiring process?
- Remember, never ask for information that is easily available on the company website.

Tips



- Ask insightful and probing questions.
- When communicating, use effective forms of body language like smiling, making eye contact, and actively listening and nodding. Don't slouch, play with nearby items, fidget, chew gum, or mumble.

6.4.2 Preparing an Effective Resume: How to Create an Effective Resume?



A resume is a formal document that lists a candidate's work experience, education and skills. A good resume gives a potential employer enough information to believe the applicant is worth interviewing. That's why it is so important to create a resume that is effective. Take a look at the steps to create an effective resume:

Step 1: Write the Address Section

The Address section occupies the top of your resume. It includes information like your name, address, phone number and e-mail address. Insert a bold line under the section to separate it from rest of your resume.

Example:

Khyati Mehta
 Breach Candy, Mumbai – India
 Contact No: +91 2223678270
 Email: khyati.mehta@gmail.com

Step 2: Add the Profile Summary Section

This part of your resume should list your overall experiences, achievements, awards, certifications and strengths. You can make your summary as short as 2-3 bullet points or as long as 8-10 bullet points.

Example:**Profile Summary**

- A Floor Supervisor graduated from University of Delhi having 6 years of experience in managing a retail outlet.
- Core expertise lies in managing retail staff, including cashiers and people working on the floor.

Step 3: Include Your Educational Qualifications

When listing your academic records, first list your highest degree. Then add the second highest qualification under the highest one and so on. To provide a clear and accurate picture of your educational background, it is critical that include information on your position, rank, percentage or CPI for every degree or certification that you have listed.

If you have done any certifications and trainings, you can add a Trainings & Certifications section under your Educational Qualifications section.

Example:**Educational Qualifications**

- *<Enter qualification> <enter date of qualification> from <enter name of institute> with <enter percentage or any other relevant scoring system>.*

Step 4: List Your Technical Skills

When listing your technical skills, start with the skills that you are most confident about. Then add the skills that you do not have as good a command over. It is perfectly acceptable to include just one skill, if you feel that particular skill adds tremendous value to your résumé. If you do not have any technical skills, you can omit this step.

Example:**Technical Skills**

- *<Enter your technical skill here, if applicable>*

Step 5: Insert Your Academic Project Experience

List down all the important projects that you have worked on. Include the following information in this section:

• Project title	• Organization	• Platform used
• Contribution	• Description	

Example:**Academic Projects****Project Title:** <Insert project title>**Organization:** <Insert the name of the organization for whom you did the project>**Platform used:** <Insert the platform used, if any>**Contribution:** <Insert your contribution towards this project>**Description:** <Insert a description of the project in one line>**Step 6: List Your Strengths**

This is where you list all your major strengths. This section should be in the form of a bulleted list.

Example:**Strengths**

- Excellent oral, written and presentation skills
- Action-oriented and result-focused
- Great time management skills

Step 7: List Your Extracurricular Activities

It is very important to show that you have diverse interests and that your life consists of more than academics. Including your extracurricular activities can give you an added edge over other candidates who have similar academic scores and project experiences. This section should be in the form of a bulleted list.

Example:**Extracurricular Activities**

- < Insert your extracurricular activity here. E.g.: Member of _____, played (name of sport) at _____ level, won (name of prize/award) for _____ >

Step 8: Write Your Personal Details

The last section of your résumé must include the following personal information:

- Date of birth
- Gender & marital status
- Nationality
- Languages known

Example:**Personal Details**

- Date of birth: 25th May, 1981
- Gender & marital status: Female, Single
- Nationality: Indian
- Languages known: English, Hindi, Tamil, French

Tips

- Keep your resume file name short, simple and informational.
- Make sure the resume is neat and free from typing errors.
- Always create your resume on plain white paper.

6.4.3 Interview FAQs

Take a look at some of the most frequently asked interview questions, and some helpful tips on how to answer them.

Q1. Can you tell me a little about yourself?

Tips to answer:

- Don't provide your full employment or personal history.
- Offer 2-3 specific experiences that you feel are most valuable and relevant.
- Conclude with how those experiences have made you perfect for this specific role.

Q2. How did you hear about the position?

Tips to answer:

- Tell the interviewer how you heard about the job – whether it was through a friend (name the friend), event or article (name them) or a job portal (say which one).
- Explain what excites you about the position and what in particular caught your eye about this role.

Q3. What do you know about the company?

Tips to answer:

- Don't recite the company's About Us page.
- Show that you understand and care about the company's goals.
- Explain why you believe in the company's mission and values.

Q4. Why do you want this job?

Tips to answer:

- Show that you are passionate about the job.
- Identify why the role is a great fit for you.
- Explain why you love the company.

Q5. Why should we hire you?

Tips to answer:

- Prove through your words that you can not only do the work, but can definitely deliver excellent results.
- Explain why you would be a great fit with the team and work culture.
- Explain why you should be chosen over any other candidate.

Q6. What are your greatest professional strengths?

Tips to answer:

- Be honest – share some of your real strengths, rather than give answers that you think sound good.
- Offer examples of specific strengths that are relevant to the position you are applying for.
- Provide examples of how you've demonstrated these strengths.

Q7. What do you consider to be your weaknesses?

Tips to answer:

- The purpose of this question is to gauge your self-awareness and honesty.
- Give an example of a trait that you struggle with, but that you're working on to improve.

Q8. What are your salary requirements?**Tips to answer:**

- Do your research beforehand and find out the typical salary range for the job you are applying for.
- Figure out where you lie on the pay scale based on your experience, education, and skills.
- Be flexible. Tell the interviewer that you know your skills are valuable, but that you want the job and are willing to negotiate.

Q9. What do you like to do outside of work?**Tips to answer:**

- The purpose of this question is to see if you will fit in with the company culture.
- Be honest – open up and share activities and hobbies that interest and excite you.

Q10. If you were an animal, which one would you want to be?**Tips to answer:**

- The purpose of this question is to see if you are able to think on your feet.
- There's no wrong answer – but to make a great impression try to bring out your strengths or personality traits through your answer.

Q11: What do you think we could do better or differently?**Tips to answer:**

- The purpose of this question is to see if you have done your research on the company, and to test whether you can think critically and come up with new ideas.
- Suggest new ideas. Show how your interests and expertise would help you execute these ideas.

Q12: Do you have any questions for us?**Tips to answer:**

- Do not ask questions to which the answers can be easily found on the company website or through a quick online search.
- Ask intelligent questions that show your ability to think critically.

Tips

- Be honest and confident while answering.
- Use examples of your past experiences wherever possible to make your answers more impactful.

6.4.4 Work Readiness – Terms & Terminologies:**Basic Workplace Terminology**

Every employee should be well versed in the following terms:

- **Annual leave:** Paid vacation leave given by employers to employees.
- **Background Check:** A method used by employers to verify the accuracy of the information provided by potential candidates.
- **Benefits:** A part of an employee's compensation package.
- **Breaks:** Short periods of rest taken by employees during working hours.
- **Compensation Package:** The combination of salary and benefits that an employer provides to his/her employees.

- **Compensatory Time (Comp Time):** Time off in lieu of pay.
- **Contract Employee:** An employee who works for one organization that sells said employee's services to another company, either on a project or time basis.
- **Contract of Employment:** When an employee is offered work in exchange for wages or salary, and accepts the offer made by the employer, a contract of employment exists.
- **Corporate Culture:** The beliefs and values shared by all the members of a company, and imparted from one generation of employees to another.
- **Counter Offer/Counter Proposal:** A negotiation technique used by potential candidates to increase the amount of salary offered by a company.
- **Cover Letter:** A letter that accompanies a candidate's resume. It emphasizes the important points in the candidate's resume and provides real examples that prove the candidate's ability to perform the expected job role.
- **Curriculum Vitae (CV)/Resume:** A summary of a candidate's achievements, educational background, work experience, skills and strengths.
- **Declining Letter:** A letter sent by an employee to an employer, turning down the job offer made by the employer to the employee.
- **Deductions:** Amounts subtracted from an employee's pay and listed on the employee's pay slip.
- **Discrimination:** The act of treating one person not as favourably as another person.
- **Employee:** A person who works for another person in exchange for payment.
- **Employee Training:** A workshop or in-house training that an employee is asked to attend by his or her superior, for the benefit of the employer.
- **Employment Gaps:** Periods of unemployed time between jobs.
- **Fixed-Term Contract:** A contract of employment which gets terminated on an agreed-upon date.
- **Follow-Up:** The act of contacting a potential employer after a candidate has submitted his or her resume.
- **Freelancer/Consultant/Independent Contractor:** A person who works for him or herself and pitches for temporary jobs and projects with different employers.
- **Holiday:** Paid time-off from work.
- **Hourly Rate:** The amount of salary or wages paid for 60 minutes of work.
- **Internship:** A job opportunity offered by an employer to a potential employee, called an intern, to work at the employer's company for a fixed, limited time period.
- **Interview:** A conversation between a potential employee and a representative of an employer, in order to determine if the potential employee should be hired.
- **Job Application:** A form which asks for a candidate's information like the candidate's name, address, contact details and work experience. The purpose of a candidate submitting a job application, is to show that candidate's interest in working for a particular company.
- **Job Offer:** An offer of employment made by an employer to a potential employee.
- **Job Search Agent:** A program that enables candidates to search for employment opportunities by selecting criteria listed in the program, for job vacancies.
- **Lay Off:** A lay off occurs when an employee is temporarily let go from his or her job, due to the employer not having any work for that employee.
- **Leave:** Formal permission given to an employee, by his or her employer, to take a leave of absence from work.
- **Letter of Acceptance:** A letter given by an employer to an employee, confirming the offer of employment made by the employer, as well as the conditions of the offer.
- **Letter of Agreement:** A letter that outlines the terms of employment.
- **Letter of Recommendation:** A letter written for the purpose of validating the work skills of a person.

- **Maternity Leave:** Leave taken from work by women who are pregnant, or who have just given birth.
- **Mentor:** A person who is employed at a higher level than you, who offers you advice and guides you in your career.
- **Minimum wage:** The minimum wage amount paid on an hourly basis.
- **Notice:** An announcement made by an employee or an employer, stating that the employment contract will end on a particular date.
- **Offer of Employment:** An offer made by an employer to a prospective employee that contains important information pertaining to the job being offered, like the starting date, salary, working conditions etc.
- **Open-Ended Contract:** A contract of employment that continues till the employer or employee terminates it.
- **Overqualified:** A person who is not suited for a particular job because he or she has too many years of work experience, or a level of education that is much higher than required for the job, or is currently or was previously too highly paid.
- **Part-Time Worker:** An employee who works for fewer hours than the standard number of hours normally worked.
- **Paternity Leave:** Leave granted to a man who has recently become a father.
- **Recruiters/Headhunters/Executive Search Firms:** Professionals who are paid by employers to search for people to fill particular positions.
- **Resigning/Resignations:** When an employee formally informs his or her employer that he or she is quitting his or her job.
- **Self-Employed:** A person who has his or her own business and does not work in the capacity of an employee.
- **Time Sheet:** A form that is submitted to an employer, by an employee, that contains the number of hours worked every day by the employee.

Notes



UNIT 6.5 Understanding Entrepreneurship

Unit Objectives

At the end of this unit, you will be able to:

1. Discuss the concept of entrepreneurship
2. Discuss the importance of entrepreneurship
3. Describe the characteristics of an entrepreneur
4. Describe the different types of enterprises
5. List the qualities of an effective leader
6. Discuss the benefits of effective leadership
7. List the traits of an effective team
8. Discuss the importance of listening effectively
9. Discuss how to listen effectively
10. Discuss the importance of speaking effectively
11. Discuss how to speak effectively
12. Discuss how to solve problems
13. List important problem solving traits
14. Discuss ways to assess problem solving skills
15. Discuss the importance of negotiation
16. Discuss how to negotiate
17. Discuss how to identify new business opportunities
18. Discuss how to identify business opportunities within your business
19. Explain the meaning of entrepreneur
20. Describe the different types of entrepreneurs
21. List the characteristics of entrepreneurs
22. Recall entrepreneur success stories
23. Discuss the entrepreneurial process
24. Describe the entrepreneurship ecosystem
25. Discuss the purpose of the Make in India campaign
26. Discuss key schemes to promote entrepreneurs
27. Discuss the relationship between entrepreneurship and risk appetite
28. Discuss the relationship between entrepreneurship and resilience
29. Describe the characteristics of a resilient entrepreneur
30. Discuss how to deal with failure

6.5.1 Concept Introduction, (Characteristic of an Entrepreneur, types of firms / types of enterprises):

Entrepreneurs and Entrepreneurship

Anyone who is determined to start a business, no matter what the risk, is an entrepreneur. Entrepreneurs run their own start-up, take responsibility for the financial risks and use creativity, innovation and vast reserves of self-motivation to achieve success. They dream big and are determined to do whatever it takes to turn their idea into a viable offering. The aim of an entrepreneur is to create an enterprise. The process of creating this enterprise is known as entrepreneurship.

Importance of Entrepreneurship

Entrepreneurship is very important for the following reasons:

1. It results in the creation of new organizations
2. It brings creativity into the marketplace
3. It leads to improved standards of living
4. It helps develop the economy of a country

Characteristics of Entrepreneurs

All successful entrepreneurs have certain characteristics in common.

They are all:

- Extremely passionate about their work
- Confident in themselves
- Disciplined and dedicated
- Motivated and driven
- Highly creative
- Visionaries
- Open-minded
- Decisive

Entrepreneurs also have a tendency to:

- Have a high risk tolerance
- Thoroughly plan everything
- Manage their money wisely
- Make their customers their priority
- Understand their offering and their market in detail
- Ask for advice from experts when required
- Know when to cut their losses

Examples of Famous Entrepreneurs

Some famous entrepreneurs are:

- Dhirubhai Ambani (Reliance)
- Dr. Karsanbhai Patel (Nirma)
- Azim Premji (Wipro)
- Anil Agarwal (Vedanta Resources)

Types of Enterprises

As an entrepreneur in India, you can own and run any of the following types of enterprises:

Sole Proprietorship

In a sole proprietorship, a single individual owns, manages and controls the enterprise. This type of business is the easiest to form with respect to legal formalities. The business and the owner have no separate legal existence. All profit belongs to the proprietor, as do all the losses - the liability of the entrepreneur is unlimited.

Partnership

A partnership firm is formed by two or more people. The owners of the enterprise are called partners. A partnership deed must be signed by all the partners. The firm and its partners have no separate legal existence. The profits are shared by the partners. With respect to losses, the liability of the partners is unlimited. A firm has a limited life span and must be dissolved when any one of the partners dies, retires, claims bankruptcy or goes insane.

Limited Liability Partnership (LLP)

In a Limited Liability Partnership or LLP, the partners of the firm enjoy perpetual existence as well as the advantage of limited liability. Each partner's liability is limited to their agreed contribution to the LLP. The partnership and its partners have a separate legal existence.

Tips



- Learn from others' failures.
- Be certain that this is what you want.
- Search for a problem to solve, rather than look for a problem to attach to your idea.

6.5.2 Leadership & Teamwork: Leadership and Leaders

Leadership means setting an example for others to follow. Setting a good example means not asking someone to do something that you wouldn't willingly want to do yourself. Leadership is about figuring out what to do in order to win as a team, and as a company.

Leaders believe in doing the right things. They also believe in helping others to do the right things. An effective leader is someone who:

- Creates an inspiring vision of the future.
- Motivates and inspires his team to pursue that vision.

Leadership Qualities That All Entrepreneurs Need

Building a successful enterprise is only possible if the entrepreneur in charge possesses excellent leadership qualities. Some critical leadership skills that every entrepreneur must have are:

1. **Pragmatism:** This means having the ability to highlight all obstacles and challenges, in order to resolve issues and reduce risks.
2. **Humility:** This means admitting to mistakes often and early, and being quick to take responsibility for your actions. Mistakes should be viewed as challenges to overcome, not opportunities to point blame.
3. **Flexibility:** It is critical for a good leader to be very flexible and quickly adapt to change. It is equally critical to know when to adapt and when not to.

4. **Authenticity:** This means showing both, your strengths and your weaknesses. It means being human and showing others that you are human.
5. **Reinvention:** This means refreshing or changing your leadership style when necessary. To do this, it's important to learn where your leadership gaps lie and find out what resources are required to close them.
6. **Awareness:** This means taking the time to recognize how others view you. It means understanding how your presence affects those around you.

Benefits of Effective Leadership

Effective leadership results in numerous benefits. Great leadership leads to the leader successfully:

- Gaining the loyalty and commitment of the team members
- Motivating the team to work towards achieving the company's goals and objectives
- Building morale and instilling confidence in the team members
- Fostering mutual understanding and team-spirit among team members
- Convincing team members about the need to change when a situation requires adaptability

Teamwork and Teams

Teamwork occurs when the people in a workplace combine their individual skills to pursue a common goal. Effective teams are made up of individuals who work together to achieve this common goal. A great team is one who holds themselves accountable for the end result.

Importance of Teamwork in Entrepreneurial Success

For an entrepreneurial leader, building an effective team is critical to the success of a venture. An entrepreneur must ensure that the team he builds possesses certain crucial qualities, traits and characteristics. An effective team is one which has:

1. **Unity of purpose:** All the team members should clearly understand and be equally committed to the purpose, vision and goals of the team.
2. **Great communication skills:** Team members should have the ability to express their concerns, ask questions and use diagrams, and charts to convey complex information.
3. **The ability to collaborate:** Every member should feel entitled to provide regular feedback on new ideas.
4. **Initiative:** The team should consist of proactive individuals. The members should have the enthusiasm to come up with new ideas, improve existing ideas, and conduct their own research.
5. **Visionary members:** The team should have the ability to anticipate problems and act on these potential problem before they turn into real problems.
6. **Great adaptability skills:** The team must believe that change is a positive force. Change should be seen as the chance to improve and try new things.
7. **Excellent organizational skills:** The team should have the ability to develop standard work processes, balance responsibilities, properly plan projects, and set in place methods to measure progress and ROI.

Tips



- Don't get too attached to your original idea. Allow it to evolve and change.
- Be aware of your weaknesses and build a team that will complement your shortfalls.
- Hiring the right people is not enough. You need to promote or incentivize your most talented people to keep them motivated.
- Earn your team's respect.

6.5.3 Communication Skills: Listening & Speaking:

The Importance of Listening Effectively

Listening is the ability to correctly receive and understand messages during the process of communication. Listening is critical for effective communication. Without effective listening skills, messages can easily be misunderstood. This results in a communication breakdown and can lead to the sender and the receiver of the message becoming frustrated or irritated.

It's very important to note that listening is not the same as hearing. Hearing just refers to sounds that you hear. Listening is a whole lot more than that. To listen, one requires focus. It means not only paying attention to the story, but also focusing on how the story is relayed, the way language and voice is used, and even how the speaker uses their body language. The ability to listen depends on how effectively one can perceive and understand both, verbal and non-verbal cues.

How to Listen Effectively

To listen effectively you should:

- Stop talking
- Stop interrupting
- Focus completely on what is being said
- Nod and use encouraging words and gestures
- Be open-minded
- Think about the speaker's perspective
- Be very, very patient
- Pay attention to the tone that is being used
- Pay attention to the speaker's gestures, facial expressions and eye movements
- Not try and rush the person
- Not let the speaker's mannerisms or habits irritate or distract you

Importance of Speaking Effectively

How successfully a message gets conveyed depends entirely on how effectively you are able to get it through. An effective speaker is one who enunciates properly, pronounces words correctly, chooses the right words and speaks at a pace that is easily understandable. Besides this, the words spoken out loud need to match the gestures, tone and body language used.

What you say, and the tone in which you say it, results in numerous perceptions being formed. A person who speaks hesitantly may be perceived as having low self-esteem or lacking in knowledge of the discussed topic. Those with a quiet voice may very well be labelled as shy. And those who speak in commanding tones with high levels of clarity, are usually considered to be extremely confident. This makes speaking a very critical communication skill.

How to Speak Effectively?

To speak effectively you should:

- Incorporate body language in your speech like eye contact, smiling, nodding, gesturing etc.
- Build a draft of your speech before actually making your speech.
- Ensure that all your emotions and feelings are under control.
- Pronounce your words distinctly with the correct pitch and intensity. Your speech should be crystal clear at all times.
- Use a pleasant and natural tone when speaking. Your audience should not feel like you are putting on an accent or being unnatural in any way.

- Use precise and specific words to drive your message home. Ambiguity should be avoided at all costs.
- Ensure that your speech has a logical flow.
- Be brief. Don't add any unnecessary information.
- Make a conscious effort to avoid irritating mannerisms like fidgeting, twitching etc.
- Choose your words carefully and use simple words that the majority of the audience will have no difficulty understanding.
- Use visual aids like slides or a whiteboard.
- Speak slowly so that your audience can easily understand what you're saying. However, be careful not to speak too slowly because this can come across as stiff, unprepared or even condescending.
- Remember to pause at the right moments.

Tips



- If you're finding it difficult to focus on what someone is saying, try repeating their words in your head.
- Always maintain eye contact with the person that you are communicating with, when speaking as well as listening. This conveys and also encourages interest in the conversation.

6.5.4 Problem Solving & Negotiation skills:

What is a Problem?

As per The Concise Oxford Dictionary (1995), a problem is, "A doubtful or difficult matter requiring a solution"

All problems contain two elements:

1. Goals
2. Obstacles

The aim of problem solving is to recognize the obstacles and remove them in order to achieve the goals.

How to Solve Problems?



Solving a problem requires a level of rational thinking. Here are some logical steps to follow when faced with an issue:

Step 1: Identify the problem

Step 2: Study the problem in detail

Step 3: List all possible solutions

Step 4: Select the best solution

Step 5: Implement the chosen solution

Step 6: Check that the problem has really been solved

Important Traits for Problem Solving

Highly developed problem solving skills are critical for both, business owners and their employees. The following personality traits play a big role in how effectively problems are solved:

- Being open minded
- Asking the right questions
- Being proactive
- Not panicking
- Having a positive attitude
- Focusing on the right problem

How to Assess for Problem Solving Skills?

As an entrepreneur, it would be a good idea to assess the level of problem solving skills of potential candidates before hiring them. Some ways to assess this skill are through:

1. **Application forms:** Ask for proof of the candidate's problem solving skills in the application form.
2. **Psychometric tests:** Give potential candidates logical reasoning and critical thinking tests and see how they fare.
3. **Interviews:** Create hypothetical problematic situations or raise ethical questions and see how the candidates respond.
4. **Technical questions:** Give candidates examples of real life problems and evaluate their thought process.

What is Negotiation?

Negotiation is a method used to settle differences. The aim of negotiation is to resolve differences through a compromise or agreement while avoiding disputes. Without negotiation, conflicts are likely to lead to resentment between people. Good negotiation skills help satisfy both parties and go a long way towards developing strong relationships.

Why Negotiate?

Starting a business requires many, many negotiations. Some negotiations are small while others are critical enough to make or break a startup. Negotiation also plays a big role inside the workplace. As an entrepreneur, you need to know not only how to negotiate yourself, but also how to train employees in the art of negotiation.

How to Negotiate?



Take a look at some steps to help you negotiate:

Step 1: Pre-Negotiation Preparation	Agree on where to meet to discuss the problem, decide who all will be present and set a time limit for the discussion.
Step 2: Discuss the Problem	This involves asking questions, listening to the other side, putting your views forward and clarifying doubts.
Step 3: Clarify the Objective	Ensure that both parties want to solve the same problem and reach the same goal.
Step 4: Aim for a Win-Win Outcome	Try your best to be open minded when negotiating. Compromise and offer alternate solutions to reach an outcome where both parties win.
Step 5: Clearly Define the Agreement	When an agreement has been reached, the details of the agreement should be crystal clear to both sides, with no scope for misunderstandings.
Step 6: Implement the Agreed Upon Solution	Agree on a course of action to set the solution in motion

Tips



- Know exactly what you want before you work towards getting it
- Give more importance to listening and thinking, than speaking
- Focus on building a relationship rather than winning
- Remember that your people skills will affect the outcome
- Know when to walk away – sometimes reaching an agreement may not be possible

6.5.5 Business Opportunities Identification: Entrepreneurs and Opportunities

“The entrepreneur always searches for change, responds to it and exploits it as an opportunity.”

Peter Drucker

The ability to identify business opportunities is an essential characteristic of an entrepreneur.

What is an Opportunity?

The word opportunity suggests a good chance or a favourable situation to do something offered by circumstances.

A business opportunity means a good or favourable change available to run a specific business in a given environment, at a given point of time.

Common Questions Faced by Entrepreneurs

A critical question that all entrepreneurs face is how to go about finding the business opportunity that is right for them.

Some common questions that entrepreneurs constantly think about are:

- Should the new enterprise introduce a new product or service based on an unmet need?
- Should the new enterprise select an existing product or service from one market and offer it in another where it may not be available?
- Should the enterprise be based on a tried and tested formula that has worked elsewhere?

It is therefore extremely important that entrepreneurs must learn how to identify new and existing business opportunities and evaluate their chances of success.

When is an Idea an Opportunity?

An idea is an opportunity when:

- It creates or adds value to a customer
- It solves a significant problem, removes a pain point or meets a demand
- Has a robust market and profit margin
- Is a good fit with the founder and management team at the right time and place

Factors to Consider When Looking for Opportunities

Consider the following when looking for business opportunities:

- Economic trends
- Changes in funding
- Changing relationships between vendors, partners and suppliers
- Market trends
- Changes in political support
- Shift in target audience

Ways to Identify New Business Opportunities

1. Identify Market Inefficiencies

When looking at a market, consider what inefficiencies are present in the market. Think about ways to correct these inefficiencies.

2. Remove Key Hassles

Rather than create a new product or service, you can innovatively improve a product, service or process.

3. Create Something New

Think about how you can create a new experience for customers, based on existing business models.

4. Pick a Growing Sector/Industry
Research and find out which sectors or industries are growing and think about what opportunities you can tap in the same.
5. Think About Product Differentiation
If you already have a product in mind, think about ways to set it apart from the existing ones.

Ways to Identify Business Opportunities Within Your Business

1. SWOT Analysis

An excellent way to identify opportunities inside your business is by creating a SWOT analysis. The acronym SWOT stands for strengths, weaknesses, opportunities, and threats.

SWOT analysis framework:

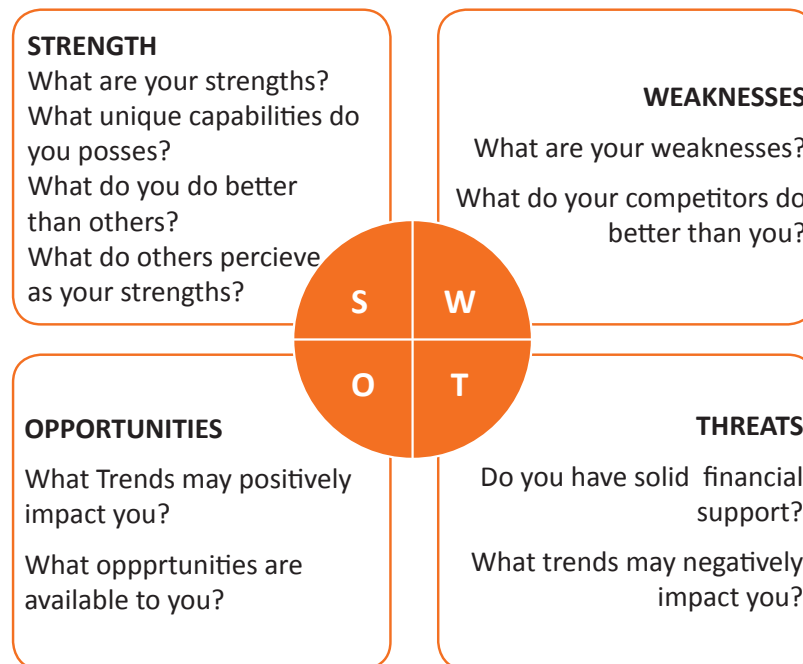


Fig.6.5.1. SWOT Analysis

Consider the following when looking for business opportunities:

By looking at yourself and your competitors using the SWOT framework, you can uncover opportunities that you can exploit, as well as manage and eliminate threats that could derail your success.

2. Establishing Your USP

Establish your USP and position yourself as different from your competitors. Identify why customers should buy from you and promote that reason.

Opportunity Analysis

Once you have identified an opportunity, you need to analyze it.

To analyze an opportunity, you must:

- Focus on the idea
- Focus on the market of the idea
- Talk to industry leaders in the same space as the idea
- Talk to players in the same space as the idea

Tips



- Remember, opportunities are situational.
- Look for a proven track record.
- Avoid the latest craze.
- Love your idea.

6.5.6 Entrepreneurship Support Eco - System: What is an Entrepreneur?

An entrepreneur is a person who:

- Does not work for an employee
- Runs a small enterprise
- Assumes all the risks and rewards of the enterprise, idea, good or service

Types of Entrepreneurs

There are four main types of entrepreneurs:

1. **The Traditional Entrepreneur:** This type of entrepreneur usually has some kind of skill –they can be a carpenter, mechanic, cook etc. They have businesses that have been around for numerous years like restaurants, shops and carpenters. Typically, they gain plenty of experience in a particular industry before they begin their own business in a similar field.
2. **The Growth Potential Entrepreneur:** The desire of this type of entrepreneur is to start an enterprise that will grow, win many customers and make lots of money. Their ultimate aim is to eventually sell their enterprise for a nice profit. Such entrepreneurs usually have a science or technical background.
3. **The Project-Oriented Entrepreneur:** This type of entrepreneur generally has a background in the Arts or psychology. Their enterprises tend to be focus on something that they are very passionate about.
4. **The Lifestyle Entrepreneur:** This type of entrepreneur has usually worked as a teacher or a secretary. They are more interested in selling something that people will enjoy, rather than making lots of money.

Characteristics of an Entrepreneur

Successful entrepreneurs have the following characteristics:

- They are highly motivated
- They are creative and persuasive
- They are mentally prepared to handle each and every task
- They have excellent business skills – they know how to evaluate their cash flow, sales and revenue
- They are willing to take great risks
- They are very proactive – this means they are willing to do the work themselves, rather than wait for someone else to do it
- They have a vision – they are able to see the big picture
- They are flexible and open-minded
- They are good at making decisions

Entrepreneur Success Stories

Dhiru Bhai Ambani

Dhirubhai Ambani began his entrepreneurial career by selling “bhajias” to pilgrims in Mount Girnar on weekends. At 16, he moved to Yemen where he worked as a gas-station attendant, and as a clerk in an oil company. He returned to India with Rs. 50,000 and started a textile trading company. Reliance went on to become the first Indian company to raise money in global markets and the first Indian company to feature in Forbes 500 list.

Dr. Karsanbhai Patel

Karsanbhai Patel made detergent powder in the backyard of his house. He sold his product door-to-door and offered a money back guarantee with every pack that was sold. He charged Rs. 3 per kg when the cheapest detergent at that time was Rs.13 per kg. Dr. Patel eventually started Nirma which became a whole new segment in the Indian domestic detergent market.

The Entrepreneurial Process



Let's take a look at the stages of the entrepreneurial process.

Stage 1: Idea Generation. The entrepreneurial process begins with an idea that has been thought of by the entrepreneur. The idea is a problem that has the potential to be solved.

Stage 2: Germination or Recognition. In this stage a possible solution to the identified problem is thought of.

Stage 3: Preparation or Rationalization. The problem is studied further and research is done to find out how others have tried to solve the same problem.

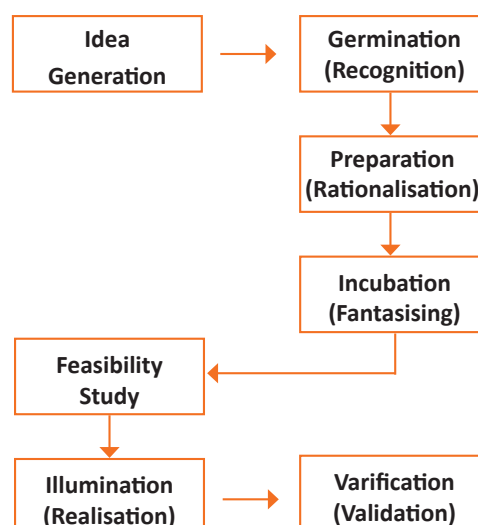
Stage 4: Incubation or Fantasizing. This stage involves creative thinking for the purpose of coming up with more ideas. Less thought is given to the problem areas.

Stage 5: Feasibility Study: The next step is the creation of a feasibility study to determine if the idea will make a profit and if it should be seen through.

Stage 6: Illumination or Realization. This is when all uncertain areas suddenly become clear. The entrepreneur feels confident that his idea has merit.

Stage 7: Verification or Validation. In this final stage, the idea is verified to see if it works and if it is useful.

Take a look at the diagram below to get a better idea of this process.



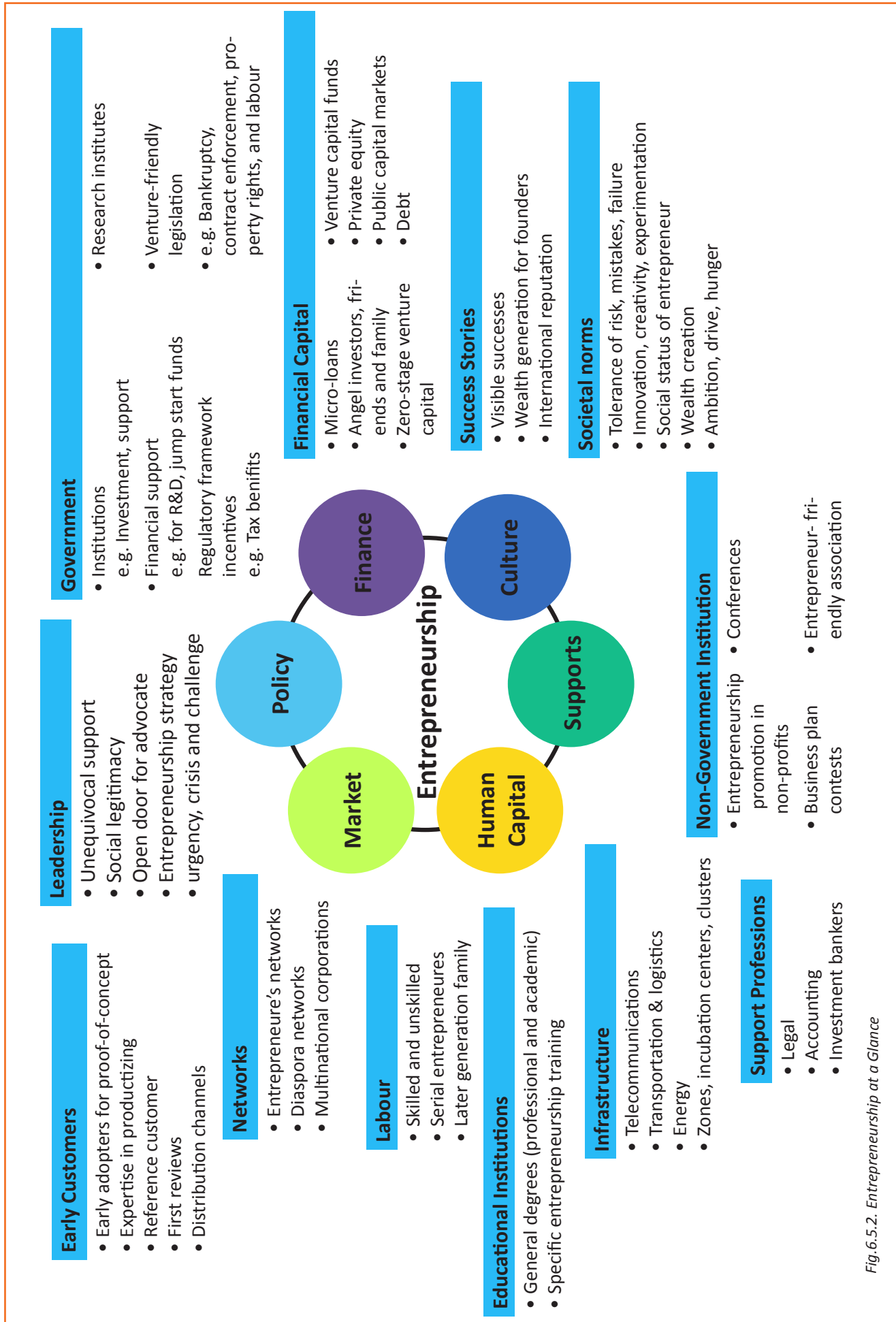


Fig. 6.5.2. Entrepreneurship at a Glance

Every entrepreneurship support ecosystem is unique and all the elements of the ecosystem are interdependent. Although every region's entrepreneurship ecosystem can be broadly described by the above features, each ecosystem is the result of the hundred elements interacting in highly complex and particular ways.

Entrepreneurship ecosystems eventually become (largely) self-sustaining. When the six domains are resilient enough, they are mutually beneficial. At this point, government involvement can and should be significantly minimized. Public leaders do not need to invest a lot to sustain the ecosystem. It is imperative that the entrepreneurship ecosystem incentives are formulated to be self-liquidating, hence focusing on sustainability of the environment.

Make in India Campaign

Every entrepreneur has certain needs. Some of their important needs are:

- To easily get loans
- To easily find investors
- To get tax exemptions
- To easily access resources and good infrastructure
- To enjoy a procedure that is free of hassles and is quick
- To be able to easily partner with other firms

The Make in India campaign, launched by Prime Minister Modi aims to satisfy all these needs of young, aspiring entrepreneurs. Its objective is to:

- Make investment easy
- Support new ideas
- Enhance skill development
- Safeguard the ideas of entrepreneurs
- Create state-of-the-art facilities for manufacturing goods

Key Schemes to Promote Entrepreneurs

The government offers many schemes to support entrepreneurs. These schemes are run by various Ministries/Departments of Government of India to support First Generation Entrepreneurs. Take a look at a few key schemes to promote entrepreneurship:

Name of the Scheme

1. Pradhan Mantri MUDRA Yojana - Micro Units Development and Refinance Agency (MUDRA),
2. STAND UP INDIA
3. Prime Minister Employment Generation Programme (PMEGP)
4. International Cooperation
5. Performance and Credit Rating
6. Marketing Assistance Scheme
7. Reimbursement of Registration Fee for Bar Coding
8. Enable Participation of MSMEs in State/District level Trade Fairs and Provide Funding Support
9. Capital Subsidy Support on Credit for Technology up gradation
10. Credit Guarantee Fund for Micro and Small Enterprise (CGFMSE)
11. Reimbursement of Certification Fees for Acquiring ISO Standards
12. Agricultural Marketing
13. Small Agricultural Marketing
14. Mega Food Park
15. Adivasi Mahila Sashaktikaran Yojana

**1. Pradhan Mantri MUDRA Yojana, - Micro Units Development and Refinance Agency (MUDRA),
Description**

Under the aegis support of Pradhan Mantri MUDRA Yojana, MUDRA has already created its initial products/schemes. The interventions have been named 'Shishu', 'Kishor' and 'Tarun' to signify the stage of growth/development and funding needs of the beneficiary micro unit/entrepreneur and also provide a reference point for the next phase of graduation/growth to look forward to:

- a. Shishu: Covering loans upto Rs.50,000/-
- b. Kishor: Covering loans above Rs. 50,000/- and upto Rs.5 lakh
- c. Tarun: Covering loans above Rs. 5 lakh to Rs.10 lakh

Who can apply?

Any Indian citizen who has a business plan for a non-farm sector income generating activity such as manufacturing, processing, trading or service sector and whose credit need is less than Rs.10 lakh can approach either a Bank, MFI, or NBFC for availing of MUDRA loans under Pradhan Mantri Mudra Yojana (PMMY).

2. Stand Up India

Description

The objective of the Standup India scheme is to facilitate bank loans between Rs.10 lakh and Rs.1 crore to at least one Schedule Caste (SC) or Scheduled Tribe (ST) borrower and at least one woman borrower per bank branch for setting up a Greenfield enterprise. This enterprise may be in manufacturing, services or the trading sector. In case of non-Individual enterprises at least 51% of the shareholding and controlling stake should be held by either an SC/ST or Woman Entrepreneur.

Who can apply?

ST, SC & Women

3. Prime Minister Employment Generation Programme (PMEGP)

Description

The Scheme is implemented by Khadi and Village Industries Commission (KVIC), as the nodal agency at the National level. At the State level, the Scheme is implemented through State KVIC Directorates, State Khadi and Village Industries Boards (KVIBs) and District Industries Centres (DICs) and banks. The Government subsidy under the Scheme is routed by KVIC through identified banks for eventual distribution to the beneficiaries/entrepreneurs in their bank accounts.

Nature of assistance

The maximum cost of the project/unit admissible under manufacturing sector is Rs.25 lakh and under business/service sector is Rs.10 lakh. Levels of funding under PMEGP

Categories of beneficiaries under PMEGP	Beneficiary's contribution (of project cost)	Rate of Subsidy (of project cost)
Area (location of project/unit)		Urban Rural
General Category	10%	15% 25%
Special (including SC / ST / OBC / Minorities / Women, Ex-servicemen, Physically handicapped, NER, Hill and Border areas, etc.)	05%	25% 35%

The balance amount of the total project cost will be provided by Banks as term loan as well as working capital.

Who can apply?

Any individual, above 18 years of age. At least VIII standard pass for projects costing above Rs.10 lakh in the manufacturing sector and above Rs.5 lakh in the business/service sector. Only new projects are considered for sanction under PMEGP. Self Help Groups (including those belonging to BPL provided that they have not availed benefits under any other Scheme), Institutions registered under Societies Registration Act,1860; Production Co-operative Societies, and Charitable Trusts are also eligible. Existing Units (under PMRY, REGP or any other scheme of Government of India or State Government) and the units that have already availed Government Subsidy under any other scheme of Government of India or State Government are NOT eligible.

4. International Cooperation**Description**

The Scheme would cover the following activities:

- Deputation of MSME business delegations to other countries for exploring new areas of technology infusion/upgradation, facilitating joint ventures, improving market of MSMEs products, foreign collaborations, etc.
- Participation by Indian MSMEs in international exhibitions, trade fairs and buyer-seller meets in foreign countries as well as in India, in which there is international participation.
- Holding international conferences and seminars on topics and themes of interest to the MSME.

Nature of assistance

IC Scheme provides financial assistance towards the airfare and space rent of entrepreneurs. Assistance is provided on the basis of size and the type of the enterprise.

Who can apply?

- State/Central Government Organisations;
- Industry/Enterprise Associations; and
- Registered Societies/Trusts and Organisations associated with the promotion and development of MSMEs

5. Performance and Credit Rating for Micro and Small Enterprises**Description**

The objective of the Scheme is to create awareness amongst micro & small enterprises about the strengths and weaknesses of their operations and also their credit worthiness.

Nature of assistance

Turn Over	Fee to be reimbursed by Ministry of MSME
Up to Rs.50 lacs	75% of the fee charged by the rating agency subject to a ceiling Rs.15,000/-
Above Rs.50 lacs to Rs.200 lacs	75% of the fee charged by the rating agency subject to a ceiling of Rs.30,000/-
Above Rs.200 lacs	75% of the fee charged by the rating agency subject to a ceiling of Rs.40,000/-

Who can apply?

Any enterprise registered in India as a micro or small enterprise is eligible to apply.

6. Marketing Assistance Scheme**Description**

The assistance is provided for the following activities:

- Organizing exhibitions abroad and participation in international exhibitions/trade fairs

- b. Co-sponsoring of exhibitions organized by other organisations/industry associations/agencies
- c. Organizing buyer-seller meets, intensive campaigns and marketing promotion events

Nature of assistance

Financial assistance of up to 95% of the airfare and space rent of entrepreneurs. Assistance is provided on the basis of size and the type of the enterprise. Financial assistance for co-sponsoring would be limited to 40% of the net expenditure, subject to maximum amount of Rs.5 lakh.

Who can apply?

MSMEs, Industry Associations and other organizations related to MSME sector.

7. Reimbursement of Registration Fee for Bar Coding

Description

The financial assistance is provided towards 75% reimbursement of only one-time registration fee and 75% of annual recurring fee for first three years paid by MSEs to GS1 India for using bar coding.

Nature of assistance

Funding support for reimbursement of 75% of one time and recurring bar code registration fees.

Who can apply?

All MSMEs with EM registration.

8. Enabling Participation of MSMEs in State/District Level Trade Fairs and Provide Funding Support

Description

Provide marketing platform to manufacturing MSMEs by enabling their participation in state/district level exhibitions being organized by state/district authorities/associations.

Nature of assistance

1. Free registration for participating in trade fairs

Note: *The selection of participants would be done by the MSME-DIs post the submission of application.*

2. Reimbursement of 50% of to and fro actual fare by shortest distance/direct train (limited to AC II tier class) from the nearest railway station/bus fare to the place of exhibition and 50% space rental charges for MSMEs (General category entrepreneurs).
3. For Women/SC/ST entrepreneurs & entrepreneurs from North Eastern Region Govt. of India will reimburse 80% of items listed above in Point (2).

Note: The total reimbursement will be max. Rs.30,000/- per unit for the SC/ST/Women/Physically Handicapped entrepreneurs, while for the other units the max. limit will be Rs.20,000/- per person per MSME unit.

Note: *The participant is required to submit follow-up proofs post attending the event to claim reimbursement. The proofs can be submitted after logging in online under the section "My Applications" or directly contacting a DI office.*

Who can apply?

All MSMEs with EM registration.

9. Capital Subsidy Support on Credit for Technology Upgradation

Description

MSMEs can get a capital subsidy (~15%) on credit availed for technology upgradation.

Nature of assistance

Financial assistance for availing credit and loan.

Who can apply?

1. Banks and financial institutions can apply to DC-MSME for availing support.
2. MSMEs need to directly contact the respective banks for getting credit and capital subsidy.

How to apply?

If you are a financial institution, click on the “Apply Now” button or else you can also directly contact the Office of DC-MSME. You can view the contact details of Office of DC-MSME. If you are an MSME, directly contact the respective banks/financial institutions as listed in the scheme guidelines.

10. Provision of Collateral Free Credit for MSMEs**Description**

Banks and financial institutions are provided funding assistance under this scheme so that they can in turn lend collateral free credit to MSMEs.

Nature of assistance

Funding support to banks and financial institutions for lending collateral-free credit to MSMEs.

Who can apply?

Banks and financial institutions can apply to office of DC-MSME/MSME-DIs for availing support. MSMEs need to directly contact the respective banks for getting credit.

11. Reimbursement of certification fees for acquiring ISO standards

ISO 9000/ISO 14001 Certification Reimbursement.

Description

The GoI assistance will be provided for one-time reimbursement of expenditure to such MSME manufacturing units which acquire ISO 18000/ISO 22000/ISO 27000 certification.

Nature of assistance

Reimbursement of expenditure incurred on acquiring ISO standards.

Who can apply?

MSMEs with EM registration.

12. Agricultural Marketing**Description**

A capital investment subsidy for construction/renovation of rural godowns.

Creation of scientific storage capacity and prevention of distress sale.

Nature of assistance

Subsidy @ 25% to farmers, 15% of project cost to companies.

Who can apply

NGOs, SHGs, companies, co-operatives.

13. Small Agricultural Marketing**Description**

Business development description provides venture capital assistance in the form of equity, and arranges training and visits of agripreneurs

Farmers' Agriculture Business Consortium

Business development description provides venture capital assistance in the form of equity, and arranges training and visits of agripreneurs.

Nature of assistance

Financial assistance with a ceiling of Rs.5 lakh.

Who can apply

Individuals, farmers, producer groups, partnership/propriety firms, SGHs, agripreneurs, etc.

14. Mega Food Park**Description**

Mechanism to link agricultural production and market to maximize value addition, enhance farmers income, create rural employment.

Nature of assistance

One-time capital grant of 50% of project cost with a limit of Rs.50 crore.

Who can apply

Farmers, farmer groups, SHGs.

15. Adivasi Mahila Sashaktikaran Yojana**Description**

Concessional scheme for the economic development of ST women.

Nature of assistance

Term loan at concessional rates upto 90% of cost of scheme.

Who can apply

Scheduled Tribes Women.

Tips

- Research the existing market, network with other entrepreneurs, venture capitalists, angel investors, and thoroughly review the policies in place to enable your entrepreneurship.
- Failure is a stepping stone and not the end of the road. Review yours and your peers' errors and correct them in your future venture.
- Be proactive in your ecosystem. Identify the key features of your ecosystem and enrich them to ensure self-sustainability of your entrepreneurship support ecosystem.

6.5.7 Risk Appetite & Resilience: Entrepreneurship and Risk

Entrepreneurs are inherently risk takers. They are path-makers not path-takers. Unlike a normal, cautious person, an entrepreneur would not think twice about quitting his job (his sole income) and taking a risk on himself and his idea.

An entrepreneur is aware that while pursuing his dreams, assumptions can be proven wrong and unforeseen events may arise. He knows that after dealing with numerous problems, success is still not guaranteed. Entrepreneurship is synonymous with the ability to take risks. This ability, called risk-appetite, is an entrepreneurial trait that is partly genetic and partly acquired.

What is Risk Appetite?

Risk appetite is defined as the extent to which a company is equipped to take risk, in order to achieve its objectives. Essentially, it refers to the balance, struck by the company, between possible profits and the hazards caused by changes in the environment (economic ecosystem, policies, etc.). Taking on more risk

may lead to higher rewards but have a high probability of losses as well. However, being too conservative may go against the company as it can miss out on good opportunities to grow and reach their objectives.

The levels of risk appetite can be broadly categorized as “low”, “medium” and “high.” The company’s entrepreneur(s) have to evaluate all potential alternatives and select the option most likely to succeed. Companies have varying levels of risk appetites for different objectives. The levels depend on:

- The type of industry
- Market pressures
- Company objectives

For example, a startup with a revolutionary concept will have a very high risk appetite. The startup can afford short term failures before it achieves longer term success. This type of appetite will not remain constant and will be adjusted to account for the present circumstances of the company.

Risk Appetite Statement

Companies have to define and articulate their risk appetite in sync with decisions made about their objectives and opportunities. The point of having a risk appetite statement is to have a framework that clearly states the acceptance and management of risk in business. It sets risk taking limits within the company. The risk appetite statement should convey the following:

- The nature of risks the business faces.
- Which risks the company is comfortable taking on and which risks are unacceptable.
- How much risk to accept in all the risk categories.
- The desired tradeoff between risk and reward.
- Measures of risk and methods of examining and regulating risk exposures.

Entrepreneurship and Resilience

Entrepreneurs are characterized by a set of qualities known as resilience. These qualities play an especially large role in the early stages of developing an enterprise. Risk resilience is an extremely valuable characteristic as it is believed to protect entrepreneurs against the threat of challenges and changes in the business environment.

What is Entrepreneurial Resilience?

Resilience is used to describe individuals who have the ability to overcome setbacks related to their life and career aspirations. A resilient person is someone who is capable of easily and quickly recovering from setbacks. For the entrepreneur, resilience is a critical trait. Entrepreneurial resilience can be enhanced in the following ways:

- By developing a professional network of coaches and mentors
- By accepting that change is a part of life
- By viewing obstacles as something that can be overcome

Characteristics of a Resilient Entrepreneur

The characteristics required to make an entrepreneur resilient enough to go the whole way in their business enterprise are:

- A strong internal sense of control
- Strong social connections
- Skill to learn from setbacks
- Ability to look at the bigger picture
- Ability to diversify and expand
- Survivor attitude
- Cash-flow conscious habits
- Attention to detail

Tips



- Cultivate a great network of clients, suppliers, peers, friends and family. This will not only help you promote your business, but will also help you learn, identify new opportunities and stay tuned to changes in the market.
- Don't dwell on setbacks. Focus on what you need to do next to get moving again.
- While you should try and curtail expenses, ensure that it is not at the cost of your growth.

6.5.8 Success & Failures: Understanding Successes and Failures in Entrepreneurship

Shyam is a famous entrepreneur, known for his success story. But what most people don't know, is that Shyam failed numerous times before his enterprise became a success. Read his interview to get an idea of what entrepreneurship is really about, straight from an entrepreneur who has both, failed and succeeded.

Interviewer: Shyam, I have heard that entrepreneurs are great risk-takers who are never afraid of failing. Is this true?

Shyam: Ha ha, no of course it's not true! Most people believe that entrepreneurs need to be fearlessly enthusiastic. But the truth is, fear is a very normal and valid human reaction, especially when you are planning to start your own business! In fact, my biggest fear was the fear of failing. The reality is, entrepreneurs fail as much as they succeed. The trick is to not allow the fear of failing to stop you from going ahead with your plans. Remember, failures are lessons for future success!

Interviewer: What, according to you, is the reason that entrepreneurs fail?

Shyam: Well, there is no one single reason why entrepreneurs fail. An entrepreneur can fail due to numerous reasons. You could fail because you have allowed your fear of failure to defeat you. You could fail because you are unwilling to delegate (distribute) work. As the saying goes, "You can do anything, but not everything!" You could fail because you gave up too easily – maybe you were not persistent enough. You could fail because you were focusing your energy on small, insignificant tasks and ignoring the tasks that were most important. Other reasons for failing are partnering with the wrong people, not being able to sell your product to the right customers at the right time at the right price... and many more reasons!

Interviewer: As an entrepreneur, how do you feel failure should be looked at?

Shyam: I believe we should all look at failure as an asset, rather than as something negative. The way I see it, if you have an idea, you should try to make it work, even if there is a chance that you will fail. That's because not trying is failure right there, anyway! And failure is not the worst thing that can happen. I think having regrets because of not trying, and wondering 'what if' is far worse than trying and actually failing.

Interviewer: How did you feel when you failed for the first time?

Shyam: I was completely heartbroken! It was a very painful experience. But the good news is, you do recover from the failure. And with every subsequent failure, the recovery process gets a lot easier. That's because you start to see each failure more as a lesson that will eventually help you succeed, rather than as an obstacle that you cannot overcome. You will start to realize that failure has many benefits.

Interviewer: Can you tell us about some of the benefits of failing?

Shyam: One of the benefits that I have experienced personally from failing is that the failure made me see things in a new light. It gave me answers that I didn't have before. Failure can make you a lot stronger. It also helps keep your ego in control.

Interviewer: What advice would you give entrepreneurs who are about to start their own enterprises?

Shyam: I would tell them to do their research and ensure that their product is something that is actually wanted by customers. I'd tell them to pick their partners and employees very wisely and cautiously. I'd tell

UNIT 6.6 Preparing to be an Entrepreneur

Unit Objectives

At the end of this unit, you will be able to:

1. Discuss how market research is carried out
2. Describe the 4 Ps of marketing
3. Discuss the importance of idea generation
4. Recall basic business terminology
5. Discuss the need for CRM
6. Discuss the benefits of CRM
7. Discuss the need for networking
8. Discuss the benefits of networking
9. Discuss the importance of setting goals
10. Differentiate between short-term, medium-term and long-term goals
11. Discuss how to write a business plan
12. Explain the financial planning process
13. Discuss ways to manage your risk
14. Describe the procedure and formalities for applying for bank finance
15. Discuss how to manage your own enterprise
16. List important questions that every entrepreneur should ask before starting an enterprise

6.6.1 Market Study / The 4 Ps of Marketing / Importance of an IDEA: Understanding Market Research

Market research is the process of gathering, analyzing and interpreting market information on a product or service that is being sold in that market. It also includes information on:

- Past, present and prospective customers
- Customer characteristics and spending habits
- The location and needs of the target market
- The overall industry
- Relevant competitors

Market research involves two types of data:

- Primary information. This is research collected by yourself or by someone hired by you.
- Secondary information. This is research that already exists and is out there for you to find and use.

Primary research

Primary research can be of two types:

- Exploratory: This is open-ended and usually involves detailed, unstructured interviews.
- Specific: This is precise and involves structured, formal interviews. Conducting specific research is the more expensive than conducting exploratory research.

Secondary research

Secondary research uses outside information. Some common secondary sources are:

- Public sources: These are usually free and have a lot of good information. Examples are government departments, business departments of public libraries etc.
- Commercial sources: These offer valuable information but usually require a fee to be paid. Examples are research and trade associations, banks and other financial institutions etc.
- Educational institutions: These offer a wealth of information. Examples are colleges, universities, technical institutes etc.

The 4 Ps of Marketing

The 4 Ps of marketing are Product, Price, Promotion and Place. Let's look at each of these 4 Ps in detail.

Product

A product can be:

- A tangible good
- An intangible service

Whatever your product is, it is critical that you have a clear understanding of what you are offering, and what its unique characteristics are, before you begin with the marketing process.

Some questions to ask yourself are:

- What does the customer want from the product/service?
- What needs does it satisfy?
- Are there any more features that can be added?
- Does it have any expensive and unnecessary features?
- How will customers use it?
- What should it be called?
- How is it different from similar products?
- How much will it cost to produce?
- Can it be sold at a profit?

Price

Once all the elements of Product have been established, the Price factor needs to be considered.

The Price of a Product will depend on several factors such as profit margins, supply, demand and the marketing strategy.

Some questions to ask yourself are:

- What is the value of the product/service to customers?
- Do local products/services have established price points?
- Is the customer price sensitive?
- Should discounts be offered?
- How is your price compared to that of your competitors?

Promotion

Once you are certain about your Product and your Price, the next step is to look at ways to promote it. Some key elements of promotion are advertising, public relations, social media marketing, email marketing, search engine marketing, video marketing and more.

Some questions to ask yourself are:

- Where should you promote your product or service?

- What is the best medium to use to reach your target audience?
- When would be the best time to promote your product?
- How are your competitors promoting their products?

Place

According to most marketers, the basis of marketing is about offering the right product, at the right price, at the right place, at the right time. For this reason, selecting the best possible location is critical for converting prospective clients into actual clients.

Some questions to ask yourself are:

- Will your product or service be looked for in a physical store, online or both?
- What should you do to access the most appropriate distribution channels?
- Will you require a sales force?
- Where are your competitors offering their products or services?
- Should you follow in your competitors' footsteps?
- Should you do something different from your competitors?

Importance of an IDEA

Ideas are the foundation of progress. An idea can be small or ground-breaking, easy to accomplish or extremely complicated to implement. Whatever the case, the fact that it is an idea gives it merit. Without ideas, nothing is possible. Most people are afraid to speak out their ideas, out for fear of being ridiculed. However, if are an entrepreneur and want to remain competitive and innovative, you need to bring your ideas out into the light.

Some ways to do this are by:

- Establishing a culture of brainstorming where you invite all interested parties to contribute
- Discussing ideas out loud so that people can add their ideas, views, opinions to them
- Being open minded and not limiting your ideas, even if the idea who have seems ridiculous
- Not discarding ideas that you don't work on immediately, but instead making a note of them and shelving them so they can be revisited at a later date

Tips



- Keep in mind that good ideas do not always have to be unique.
- Remember that timing plays a huge role in determining the success of your idea.
- Situations and circumstances will always change, so be flexible and adapt your idea accordingly.

6.6.2 Business Entity Concepts: Basic Business Terminology

If your aim is to start and run a business, it is crucial that you have a good understanding of basic business terms. Every entrepreneur should be well versed in the following terms:

- **Accounting:** A systematic method of recording and reporting financial transactions.
- **Accounts payable:** Money owed by a company to its creditors.
- **Accounts Receivable:** The amount a company is owed by its clients.
- **Assets:** The value of everything a company owns and uses to conduct its business.
- **Balance Sheet:** A snapshot of a company's assets, liabilities and owner's equity at a given moment.
- **Bottom Line:** The total amount a business has earned or lost at the end of a month.
- **Business:** An organization that operates with the aim of making a profit.
- **Business to Business (B2B):** A business that sells goods or services to another business.
- **Business to Consumer (B2C):** A business that sells goods or services directly to the end user.
- **Capital:** The money a business has in its accounts, assets and investments. The two main types of capital are debt and equity.
- **Cash Flow:** The overall movement of funds through a business each month, including income and expenses.
- **Cash Flow Statement:** A statement showing the money that entered and exited a business during a specific period of time.
- **Contract:** A formal agreement to do work for pay.
- **Depreciation:** The degrading value of an asset over time.
- **Expense:** The costs that a business incurs through its operations.
- **Finance:** The management and allocation of money and other assets.
- **Financial Report:** A comprehensive account of a business' transactions and expenses.
- **Fixed Cost:** A one-time expense.
- **Income Statement (Profit and Loss Statement):** Shows the profitability of a business during a period of time.
- **Liabilities:** The value of what a business owes to someone else.
- **Marketing:** The process of promoting, selling and distributing a product or service.
- **Net Income/Profit:** Revenues minus expenses.
- **Net Worth:** The total value of a business.
- **Payback Period:** The amount of time it takes to recover the initial investment of a business.
- **Profit Margin:** The ratio of profit, divided by revenue, displayed as a percentage.
- **Return on Investment (ROI):** The amount of money a business gets as return from an investment.
- **Revenue:** The total amount of income before expenses are subtracted.
- **Sales Prospect:** A potential customer.
- **Supplier:** A provider of supplies to a business.
- **Target Market:** A specific group of customers at which a company's products and services are aimed.
- **Valuation:** An estimate of the overall worth of the business.
- **Variable Cost:** Expenses that change in proportion to the activity of a business.
- **Working Capital:** Calculated as current assets minus current liabilities.
- **Business Transactions:** There are three types of business transactions. These are:
 - Simple Transactions – Usually a single transaction between a vendor and a customer. For example: Buying a cup of coffee.

- Complex Transactions – These transactions go through a number of events before they can be completed. For example: Buying a house.
- Ongoing transactions – These transactions usually require a contract. For example: Contract with a vendor.

Basic Accounting Formulas

Take a look some important accounting formulas that every entrepreneur needs to know.

1. The Accounting Equation: This is value of everything a company owns and uses to conduct its business.

Formula:

$$\text{Assets} = \text{Liability} + \text{Owner's Equity}$$

2. Net Income: This is the profit of the company.

Formula:

$$\text{Net Income} = \text{Revenues} - \text{Expenses}$$

3. Break-Even Point: This is the point at which the company will not make a profit or a loss. The total cost and total revenues are equal.

Formula:

$$\text{Break-Even} = \text{Fixed Costs} / \text{Sales Price} - \text{Variable Cost per Unit}$$

4. Cash Ratio: This tells us about the liquidity of a company.

Formula:

$$\text{Cash Ratio} = \text{Cash} / \text{Current Liabilities}$$

5. Profit Margin: This is shown as a percentage. It shows what percentage of sales are left over after all the expenses are paid by the business.

Formula:

$$\text{Profit Margin} = \text{Net Income} / \text{Sales}$$

6. Debt-to-Equity Ratio: This ratio shows how much equity and debt a company is using to finance its assets, and whether the shareholder equity can fulfill obligations to creditors if the business starts making a loss.

Formula:

$$\text{Debt-to-Equity Ratio} = \text{Total Liabilities} / \text{Total Equity}$$

7. Cost of Goods Sold: This is the total of all costs used to create a product or service, which has been sold.

Formula:

$$\text{Cost of Goods Sold} = \text{Cost of Materials/Inventory} - \text{Cost of Outputs}$$

8. Return on Investment (ROI): This is usually shown as a percentage. It calculates the profits of an investment as a percentage of the original cost.

Formula:

$$\text{ROI} = \text{Net Profit} / \text{Total Investment} * 100$$

9. Simple Interest: This is money you can earn by initially investing some money (the principal).

Formula:

$$A = P(1 + rt); R = r * 100$$

Where:

$$A = \text{Total Accrued Amount (principal + interest)}$$

P = Principal Amount

I = Interest Amount

r = Rate of Interest per year in decimal; $r = R/100$

t = Time Period involved in months or years

10. Annual Compound Interest: This calculates the addition of interest to the principal sum of a loan or deposit.

Formula:

$$A = P (1 + r/n)^{nt}$$

Where:

A = the future value of the investment/loan, including interest

P = the principal investment amount (the initial deposit or loan amount)

r = the annual interest rate (decimal)

n = the number of times that interest is compounded per year

t = the number of years the money is invested or borrowed for

6.6.3 CRM & Networking: What is CRM?

CRM stands for Customer Relationship Management. Originally the expression Customer Relationship Management meant managing one's relationship with customers. However, today it refers to IT systems and software designed to help companies manage their relationships.

The Need for CRM

The better a company can manage its relationships with its customers, the higher the chances of the company's success. For any entrepreneur, the ability to successfully retain existing customers and expand the enterprise is paramount. This is why IT systems that focus on addressing the problems of dealing with customers on a daily basis are becoming more and more in demand.

Customer needs change over time, and technology can make it easier to understand what customers really want. This insight helps companies to be more responsive to the needs of their customers. It enables them to modify their business operations when required, so that their customers are always served in the best manner possible. Simply put, CRM helps companies recognize the value of their clients and enables them to capitalize on improved customer relations.

Benefits of CRM

CRM has a number of important benefits:

- It helps improve relations with existing customers which can lead to:
 - Increased sales
 - Identification of customer needs
 - Cross-selling of products
- It results in better marketing of one's products or services
- It enhances customer satisfaction and retention
- It improves profitability by identifying and focusing on the most profitable customers

What is Networking?

In business, networking means leveraging your business and personal connections in order to bring in a regular supply of new business. This marketing method is effective as well as low cost. It is a great way to develop sales opportunities and contacts. Networking can be based on referrals and introductions, or can take place via phone, email, and social and business networking websites.

The Need for Networking

Networking is an essential personal skill for business people, but it is even more important for entrepreneurs. The process of networking has its roots in relationship building. Networking results in greater communication and a stronger presence in the entrepreneurial ecosystem. This helps build strong relationships with other entrepreneurs.

Business networking events held across the globe play a huge role in connecting like-minded entrepreneurs who share the same fundamental beliefs in communication, exchanging ideas and converting ideas into realities. Such networking events also play a crucial role in connecting entrepreneurs with potential investors. Entrepreneurs may have vastly different experiences and backgrounds but they all have a common goal in mind – they all seek connection, inspiration, advice, opportunities and mentors. Networking offers them a platform to do just that.

Benefits of Networking

Networking offers numerous benefits for entrepreneurs. Some of the major benefits are:

- Getting high quality leads
- Increased business opportunities
- Good source of relevant connections
- Advice from like-minded entrepreneurs
- Gaining visibility and raising your profile
- Meeting positive and enthusiastic people
- Increased self-confidence
- Satisfaction from helping others
- Building strong and lasting friendships

Tips



- Use social media interactions to identify needs and gather feedback.
- When networking, ask open-ended questions rather than yes/no type questions.

6.6.4 Business Plan: Why Set Goals?

Setting goals is important because it gives you long-term vision and short-term motivation. Goals can be short term, medium term and long term.

Short-Term Goals

- These are specific goals for the immediate future.

Example: Repairing a machine that has failed.

Medium-Term Goals

- These goals are built on your short term goals.
- They do not need to be as specific as your short term goals.

Example: Arranging for a service contract to ensure that your machines don't fail again.

Long-Term Goals

These goals require time and planning.

They usually take a year or more to achieve.

Example: Planning your expenses so you can buy new machinery

Why Create a Business Plan?

A business plan is a tool for understanding how your business is put together. It can be used to monitor progress, foster accountability and control the fate of the business. It usually offers a 3-5 year projection and outlines the plan that the company intends to follow to grow its revenues. A business plan is also a very important tool for getting the interest of key employees or future investors.

A business plan typically comprises of eight elements.

Elements of a Business Plan

Executive Summary

The executive summary follows the title page. The summary should clearly state your desires as the business owner in a short and businesslike way. It is an overview of your business and your plans. Ideally this should not be more than 1-2 pages.

Your Executive Summary should include:

- The Mission Statement: Explain what your business is all about.

Example: Nike's Mission Statement

Nike's mission statement is "To bring inspiration and innovation to every athlete in the world."

- Company Information: Provide information like when your business was formed, the names and roles of the founders, the number of employees, your business location(s) etc.
- Growth Highlights: Mention examples of company growth. Use graphs and charts where possible.
- Your Products/Services: Describe the products or services provided.
- Financial Information: Provide details on current bank and investors.
- Summarize future plans: Describe where you see your business in the future.

Business Description

The second section of your business plan needs to provide a detailed review of the different elements of your business. This will help potential investors to correctly understand your business goal and the uniqueness of your offering.

Your Business Description should include:

- A description of the nature of your business
- The market needs that you are aiming to satisfy
- The ways in which your products and services meet these needs
- The specific consumers and organizations that you intend to serve
- Your specific competitive advantages

Market Analysis

The market analysis section usually follows the business description. The aim of this section is to showcase your industry and market knowledge. This is also the section where you should lay down your research findings and conclusions.

Your Market Analysis should include:

- Your industry description and outlook
- Information on your target market
- The needs and demographics of your target audience
- The size of your target market
- The amount of market share you want to capture
- Your pricing structure
- Your competitive analysis
- Any regulatory requirements

Organization & Management

This section should come immediately after the Market Analysis.

Your Organization & Management section should include:

- Your company's organizational structure
- Details of your company's ownership
- Details of your management team
- Qualifications of your board of directors
- Detailed descriptions of each division/department and its function
- The salary and benefits package that you offer your people
- The incentives that you offer

Service or Product Line

The next section is the service or product line section. This is where you describe your service or product, and stress on their benefits to potential and current customers. Explain in detail why your product of choice will fulfill the needs of your target audience.

Your Service or Product Line section should include:

- A description of your product/service
- A description of your product or service's life cycle
- A list of any copyright or patent filings
- A description of any R&D activities that you are involved in or planning

Marketing & Sales

Once the Service or Product Line section of your plan has been completed, you should start on the description of the marketing and sales management strategy for your business.

Your Marketing section should include the following strategies:

- **Market penetration strategy:** This strategy focuses on selling your existing products or services in existing markets, in order to increase your market share.
- **Growth strategy:** This strategy focuses on increasing the amount of market share, even if it reduces earnings in the short-term.
- **Channels of distribution strategy:** These can be wholesalers, retailers, distributors and even the internet.
- **Communication strategy:** These can be written strategies (e-mail, text, chat), oral strategies (phone calls, video chats, face-to-face conversations), non-verbal strategies (body language, facial expressions, tone of voice) and visual strategies (signs, webpages, illustrations).

Your Sales section should include the following information:

- **A salesforce strategy:** This strategy focuses on increasing the revenue of the enterprise.
- **A breakdown of your sales activities:** This means detailing out how you intend to sell your products or services – will you sell it offline or online, how many units do you intend to sell, what price do you plan to sell each unit at, etc.

Funding Request

This section is specifically for those who require funding for their venture.

The Funding Request section should include the following information:

- How much funding you currently require.
- How much funding you will require over the next five years. This will depend on your long-term goals.
- The type of funding you want and how you plan to use it. Do you want funding that can be used only for a specific purpose, or funding that can be used for any kind of requirement?
- Strategic plans for the future. This will involve detailing out your long-term plans – what these plans are and how much money you will require to put these plans in motions.
- Historical and prospective financial information. This can be done by creating and maintaining all your financial records, right from the moment your enterprise started, to the present day. Documents required for this are your balance sheet which contains details of your company's assets and liabilities, your income statement which lists your company's revenues, expenses and net income for the year, your tax returns (usually for the last three years) and your cash flow budget which lists the cash that came in, the cash that went out and states whether you had a cash deficit (negative balance) or surplus (positive balance) at the end of each month.

Financial Planning

Before you begin building your enterprise, you need to plan your finances. Take a look at the steps for financial planning:

Step 1: Create a financial plan. This should include your goals, strategies and timelines for accomplishing these goals.

Step 2: Organize all your important financial documents. Maintain a file to hold your investment details, bank statements, tax papers, credit card bills, insurance papers and any other financial records.

Step 3: Calculate your net worth. This means figure out what you own (assets like your house, bank accounts, investments etc.), and then subtract what you owe (liabilities like loans, pending credit card amounts etc.) the amount you are left with is your net worth.

Step 4: Make a spending plan. This means write down in detail where your money will come from, and where it will go.

Step 5: Build an emergency fund. A good emergency fund contains enough money to cover at least 6 months' worth of expenses.

Step 6: Set up your insurance. Insurance provides long term financial security and protects you against risk.

Risk Management

As an entrepreneur, it is critical that you evaluate the risks involved with the type of enterprise that you want to start, before you begin setting up your company. Once you have identified potential risks, you can take steps to reduce them. Some ways to manage risks are:

- Research similar business and find out about their risks and how they were minimized.
- Evaluate current market trends and find out if similar products or services that launched a while ago are still being well received by the public.
- Think about whether you really have the required expertise to launch your product or service.
- Examine your finances and see if you have enough income to start your enterprise.
- Be aware of the current state of the economy, consider how the economy may change over time, and think about how your enterprise will be affected by any of those changes.
- Create a detailed business plan.

Tips

- Ensure all the important elements are covered in your plan.
- Scrutinize the numbers thoroughly.
- Be concise and realistic.
- Be conservative in your approach and your projections.
- Use visuals like charts, graphs and images wherever possible.

6.6.5 Procedure and Formalities for Bank Finance: The Need for Bank Finance

For entrepreneurs, one of the most difficult challenges faced involves securing funds for startups. With numerous funding options available, entrepreneurs need to take a close look at which funding methodology works best for them. In India, banks are one of the largest funders of startups, offering funding to thousands of startups every year.

What Information Should Entrepreneurs Offer Banks for Funding?

When approaching a bank, entrepreneurs must have a clear idea of the different criteria that banks use to screen, rate and process loan applications. Entrepreneurs must also be aware of the importance of providing banks with accurate and correct information. It is now easier than ever for financial institutions to track any default behaviour of loan applicants. Entrepreneurs looking for funding from banks must provide banks with information relating to their general credentials, financial situation and guarantees or collaterals that can be offered.

General Credentials

This is where you, as an entrepreneur, provide the bank with background information on yourself. Such information includes:

- Letter(s) of Introduction: This letter should be written by a respected business person who knows you well enough to introduce you. The aim of this letter is set across your achievements and vouch for your character and integrity.
- Your Profile: This is basically your resume. You need to give the bank a good idea of your educational achievements, professional training, qualifications, employment record and achievements.
- Business Brochure: A business brochure typically provides information on company products, clients, how long the business has been running for etc.
- Bank and Other References: If you have an account with another bank, providing those bank references is a good idea.
- Proof of Company Ownership or Registration: In some cases, you may need to provide the bank with proof of company ownership and registration. A list of assets and liabilities may also be required.

Financial Situation

Banks will expect current financial information on your enterprise. The standard financial reports you should be prepared with are:

- Balance Sheet
- Cash-Flow Statement
- Business Plan
- Profit-and-Loss Account
- Projected Sales and Revenues
- Feasibility Study

Guarantees or Collaterals

Usually banks will refuse to grant you a loan without security. You can offer assets which the bank can seize and sell off if you do not repay the loan. Fixed assets like machinery, equipment, vehicles etc. are also considered to be security for loans.

The Lending Criteria of Banks

Your request for funding will have a higher chance of success if you can satisfy the following lending criteria:

- Good cash flow
- Adequate shareholders' funds
- Adequate security
- Experience in business
- Good reputation

The Procedure



To apply for funding the following procedure will need to be followed.

1. Submit your application form and all other required documents to the bank.
2. The bank will carefully assess your credit worthiness and assign ratings by analyzing your business information with respect to parameters like management, financial, operational and industry information as well as past loan performance.
3. The bank will make a decision as to whether or not you should be given funding.

Tips



- Get advice on funding options from experienced bankers.
- Be cautious and avoid borrowing more than you need, for longer than you need, at an interest rate that is higher than you are comfortable with.

6.6.6 Enterprise Management - An Overview: How to Manage Your Enterprise?



To manage your enterprise effectively you need to look at many different aspects, right from managing the day-to-day activities to figuring out how to handle a large scale event. Let's take a look at some simple steps to manage your company effectively.

Step 1: Use your leadership skills and ask for advice when required.

Let's take the example of Ramu, an entrepreneur who has recently started his own enterprise. Ramu has good leadership skills – he is honest, communicates well, knows how to delegate work etc. These leadership skills definitely help Ramu in the management of his enterprise. However, sometimes Ramu comes across situations that he is unsure how to handle. What should Ramu do in this case? One solution is for him to find a more experienced manager who is willing to mentor him. Another solution is for Ramu to use his networking skills so that he can connect with managers from other organizations, who can give him advice on how to handle such situations.

Step 2: Divide your work amongst others – realize that you cannot handle everything yourself.

Even the most skilled manager in the world will not be able to manage every single task that an enterprise will demand of him. A smart manager needs to realize that the key to managing his enterprise lies in his dividing all his work between those around him. This is known as delegation. However, delegating is not enough. A manager must delegate effectively if he wants to see results. This is important because delegating, when done incorrectly, can result in you creating even more work for yourself. To delegate effectively, you can start by making two lists. One list should contain the things that you know you need

to handle yourself. The second list should contain the things that you are confident can be given to others to manage and handle. Besides incorrect delegation, another issue that may arise is over-delegation. This means giving away too many of your tasks to others. The problem with this is, the more tasks you delegate, the more time you will spend tracking and monitoring the work progress of those you have handed the tasks to. This will leave you with very little time to finish your own work.

Step 3: Hire the right people for the job.

Hiring the right people goes a long way towards effectively managing your enterprise. To hire the best people suited for the job, you need to be very careful with your interview process. You should ask potential candidates the right questions and evaluate their answers carefully. Carrying out background checks is always a good practice. Running a credit check is also a good idea, especially if the people you are planning to hire will be handling your money. Create a detailed job description for each role that you want filled and ensure that all candidates have a clear and correct understanding of the job description. You should also have an employee manual in place, where you put down every expectation that you have from your employees. All these actions will help ensure that the right people are approached for running your enterprise.

Step 4: Motivate your employees and train them well.

Your enterprise can only be managed effectively if your employees are motivated to work hard for your enterprise. Part of being motivated involves your employees believing in the vision and mission of your enterprise and genuinely wanting to make efforts towards pursuing the same. You can motivate your employees with recognition, bonuses and rewards for achievements. You can also motivate them by telling them about how their efforts have led to the company's success. This will help them feel pride and give them a sense of responsibility that will increase their motivation.

Besides motivating your people, your employees should be constantly trained in new practices and technologies. Remember, training is not a one-time effort. It is a consistent effort that needs to be carried out regularly.

Step 5: Train your people to handle your customers well.

Your employees need to be well-versed in the art of customer management. This means they should be able to understand what their customers want, and also know how to satisfy their needs. For them to truly understand this, they need to see how you deal effectively with customers. This is called leading by example. Show them how you sincerely listen to your clients and the efforts that you put into understanding their requirements. Let them listen to the type of questions that you ask your clients so they understand which questions are appropriate.

Step 6: Market your enterprise effectively.

Use all your skills and the skills of your employees to market your enterprise in an effective manner. You can also hire a marketing agency if you feel you need help in this area.

Now that you know what is required to run your enterprise effectively, put these steps into play, and see how much easier managing your enterprise becomes!

Tips



- Get advice on funding options from experienced bankers.
- Be cautious and avoid borrowing more than you need, for longer than you need, at an interest rate that is higher than you are comfortable with.

6.6.7. 20 Questions to Ask Yourself Before Considering Entrepreneurship




1. Why am I starting a business?
2. What problem am I solving?
3. Have others attempted to solve this problem before? Did they succeed or fail?
4. Do I have a mentor¹ or industry expert that I can call on?
5. Who is my ideal customer²?
6. Who are my competitors³?
7. What makes my business idea different from other business ideas?
8. What are the key features of my product or service?
9. Have I done a SWOT⁴ analysis?
10. What is the size of the market that will buy my product or service?
11. What would it take to build a minimum viable product⁵ to test the market?
12. How much money do I need to get started?
13. Will I need to get a loan?
14. How soon will my products or services be available?
15. When will I break even⁶ or make a profit?
16. How will those who invest in my idea make a profit?
17. How should I set up the legal structure⁷ of my business?
18. What taxes⁸ will I need to pay?
19. What kind of insurance⁹ will I need?
20. Have I reached out to potential customers for feedback?

Tips

- It is very important to validate your business ideas before you invest significant time, money and resources into it.
- The more questions you ask yourself, the more prepared you will be to handle the highs and lows of starting an enterprise.

Footnotes:

1. A mentor is a trusted and experienced person who is willing to coach and guide you.
2. A customer is someone who buys goods and/or services.
3. A competitor is a person or company that sells products and/or services similar to your products and/or services.
4. SWOT stands for Strengths, Weaknesses, Opportunities and Threats. To conduct a SWOT analysis of your company, you need to list down all the strengths and weaknesses of your company, the opportunities that are present for your company and the threats faced by your company.
5. A minimum viable product is a product that has the fewest possible features, that can be sold to customers, for the purpose of getting feedback from customers on the product.
6. A company is said to break even when the profits of the company are equal to the costs.
7. The legal structure could be a sole proprietorship, partnership or limited liability partnership.
8. There are two types of taxes – direct taxes payable by a person or a company, or indirect taxes charged on goods and/or services.
9. There are two types of insurance – life insurance and general insurance. Life insurance covers human life while general insurance covers assets like animals, goods, cars etc.

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