



Pre-feasibility Study

MANUFACTURING UNIT FOR OFFICE FURNITURE

December 2022

“The figures and financial projections are approximate due to fluctuations in exchange rates, energy costs, and fuel prices etc. Users are advised to focus on understanding essential elements such as production processes and capacities, space, machinery, human resources, and raw material etc. requirements. Project investment, operating costs, and revenues can change daily. For accurate financial calculations, utilize financial calculators on SMEDA’s website and consult financial experts to stay current with market conditions.”

Small and Medium Enterprises Development Authority
Ministry of Industries and Production
Government of Pakistan

Table of Contents

1	DISCLAIMER	6
2	EXECUTIVE SUMMARY	7
3	INTRODUCTION TO SMEDA	8
4	PURPOSE OF THE DOCUMENT	9
5	BRIEF DESCRIPTION OF PROJECT & PRODUCTS	9
5.1	Machinery and Equipment	13
5.2	Production Process Flow for Executive Table	19
5.3	Production Process Flow for Office Tables	24
5.4	Process Flow of Assembling Office Chairs	26
5.5	Installed and Operational Capacities	28
6	CRITICAL FACTORS	32
7	GEOGRAPHICAL POTENTIAL FOR INVESTMENT	32
8	POTENTIAL TARGET CUSTOMERS / MARKETS	32
9	PROJECT COST SUMMARY	34
9.1	Project Economics	34
9.2	Initial Project Cost Estimates	35
9.2.1	Land	35
9.2.2	Building	36
9.2.3	Machinery and Equipment	37
9.2.4	Tools and Equipment	38
9.2.5	Office Equipment Requirement	38
9.2.6	Furniture and Fixture Requirement	39
9.2.7	Vehicle Requirement	40
9.2.8	Pre-Operating Cost Requirement	40
9.2.9	Advance against Building Rent	40
9.3	Breakeven Analysis	41
9.4	Revenue Generation	41
9.5	Variable Cost Estimate	42
9.6	Fixed Cost Estimate	49
9.7	Financial Feasibility Analysis	50
9.8	Financial Feasibility Analysis with 50% Debt	50
9.9	Human Resource Requirement	51
10	CONTACT DETAILS	52
11	USEFUL WEB LINKS	53
12	ANNEXURES	54

12.1	Income Statement	54
12.2	Balance Sheet	55
12.3	Cash Flow Statement	56
13	KEY ASSUMPTIONS.....	57
13.1	Operating Cost Assumptions.....	57
13.2	Revenue Assumptions	57
13.3	Financial Assumptions	57
13.4	Debt-Related Assumption	58
13.5	Cash Flow Assumptions.....	58

Table of Tables

Table 1: Installed and Operational Production Capacity.....	29
Table 2: Installed and Operational Assembling Capacity	29
Table 3: Production Capacity Assumptions– Tables, Cabinets & Racks.....	30
Table 4: Production Capacity Assumptions – Tables, Cabinets & Racks.....	30
Table 5: Assembling Capacity Assumptions – Office Chairs	31
Table 6: Assembly Capacity Assumption – Office Chairs	31
Table 7: Initial Project Cost.....	35
Table 8: Breakup of Land of Manufacturing unit	36
Table 9: Breakup of Furniture Showroom	36
Table 10: Renovation Cost	37
Table 11: Machinery and Equipment	37
Table 12: Tools and Equipment.....	38
Table 13: Office Equipment Requirement – Manufacturing Unit.....	38
Table 14: Office Equipment Requirement - Showroom	39
Table 15: Furniture and Fixtures Requirement.....	39
Table 16: Vehicle Requirement.....	40
Table 17: Pre-Operating Cost Requirement	40
Table 18: Advance against Building Rent	40
Table 19: Break-Even Analysis.....	41
Table 20: Revenue Generation.....	41
Table 21: Variable Cost Estimate	42
Table 22: Material Cost	42
Table 23: Rose Wood Executive Table	43
Table 24: Rose Wood Executive Table - Main Desk.....	43
Table 25: Rose Wood Executive Table - Side Desk	44
Table 26: Kail Wood Executive Table	44
Table 27: Kail Wood Executive Table - Main Desk	44
Table 28: Kail Wood Executive Table - Side Desk	45
Table 29: Office Table - Type 1	45
Table 30: Office Table - Type 2	46
Table 31: Cabinet 39 W x 17 D x 77 H (Inches).....	46
Table 32: Cabinet 39 W x 17 D x 47 H (Inches).....	46
Table 33: Racks.....	47
Table 34: Executive Chair.....	47
Table 35: Mid-Back Chair	47
Table 36: Mesh Back Chair	48
Table 37: Task Chair	48
Table 38: Direct Labor	48
Table 39: Machinery Maintenance Cost.....	49
Table 40: Fixed Cost Estimate	49
Table 41: Fixed Cost Assumption-Management Staff Salary	49
Table 42: Financial Feasibility Analysis.....	50
Table 43: Financial Feasibility Analysis with 50% Debt.....	50
Table 44: Human Resource Requirement.....	51
Table 45: Contact Details.....	52
Table 46: Useful Web Links.....	53

Table 47: Operating Cost Assumptions.....	57
Table 48: Revenue Assumptions.....	57
Table 49: Financial Assumptions.....	57
Table 50: Cash Flow Assumptions.....	58

Table of Figures

Figure 1: Types of Office Chairs	10
Figure 2: Executive Table	11
Figure 3: Office Table	11
Figure 4: Storage Cabinets.....	12
Figure 5: Wall Racks.....	12
Figure 6: Vertical Band Saw Machine.....	13
Figure 7: Wood Thickness Planer Machine	14
Figure 8: Wood Surface Jointer Planer Machine	14
Figure 9: Wood Carving CNC Router	15
Figure 10: Edge Banding Machine	15
Figure 11: Wood Sanding Machine	16
Figure 12: Hand Saw	16
Figure 13: Circular Saw.....	16
Figure 14: Pneumatic Nail Gun Machine.....	17
Figure 15: Hand Drill Machine with Accessories.....	17
Figure 16: Wooden Panel Bar Clamp	18
Figure 17: Moisture Meter.....	18
Figure 18: General Wood Worker Tool Kit.....	19
Figure 19: Manufacturing Process of Executive Tables	19
Figure 20: Worm Holes, Rots and Knots in Wood	20
Figure 21: Wooden Planks	20
Figure 22: Cutting of Wooden Planks	21
Figure 23: Surface Planing of Wood	21
Figure 24: Thickness Planing of Wood.....	22
Figure 25: Carving.....	22
Figure 26:Assembling using Dowels	23
Figure 27: Manufacturing Process of Office Tables	24
Figure 28: Laminated Chipboard Planks	24
Figure 29: Cutting of Chipboard Planks.....	25
Figure 30: Edge Banding	26
Figure 31:Process Flow for Assembling Office Chairs.....	26
Figure 32: Parts Required.....	27
Figure 33: Metal Securing Plank.....	27
Figure 34: Five Star Base and Gas Lift	28
Figure 35: Import of Office Furniture	33
Figure 36: Export of Office Furniture.....	34
Figure 37: Debt-Related Assumption.....	58

1 DISCLAIMER

This information memorandum is to introduce the subject matter and provide a general idea and information on the said matter. Although, the material included in this document is based on data/information gathered from various reliable sources; however, it is based upon certain assumptions, which may differ from case to case. The information has been provided on as is where is basis without any warranties or assertions as to the correctness or soundness thereof. Although, due care and diligence has been taken to compile this document, the contained information may vary due to any change in any of the concerned factors, and the actual results may differ substantially from the presented information. SMEDA, its employees or agents do not assume any liability for any financial or other loss resulting from this memorandum in consequence of undertaking this activity. The contained information does not preclude any further professional advice to be obtained by user. The prospective user of this memorandum is encouraged to carry out additional diligence and gather any information which is necessary for making an informed decision, including taking professional advice from a qualified consultant/technical expert before taking any decision to act upon the information.

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2 EXECUTIVE SUMMARY

Furniture is a necessary item to run people's daily routines. It is needed in every house, office, school, hospital, business place or in any other place where people reside and/or work. In a contemporary workplace setting, furniture plays an important role in facilitating people do their work efficiently and effectively by providing an enabling, safe, relaxing and comfortable environment to all the occupants of the office and the visitors. Moreover, a nice workplace setting also improves the overall look and ambience of the office.

Office furniture is essential for smooth and efficient functioning of an office. Comfortable and properly designed furniture is necessary to have employee satisfaction and increase overall work efficiency of the organization. Attractive and comfortable furniture provides favorable impression to visitors and improves the image of the office. Furthermore, systematic layout of office furniture ensures safety of documents by keeping records and files in secure cabinets and drawers, decreasing the risk of theft and/or any damage from pests fire, water and dust.

The proposed business will manufacture many different types of office furniture items including two types of executive tables (rose wood executive table and kail wood executive table), two types of office tables with laminated chipboard having different dimensions (Type 1, having 5 feet width, 3 feet length, 2.5 feet height and type 2, having 4 feet width, 2.5 feet length, 2.5 feet height) and storage cabinets and racks. Along with these, different types of office chairs, including executive chairs, mid-back chairs, mesh back chairs and task chairs will be assembled in the proposed manufacturing unit.

Large cities like, Lahore, Karachi, Islamabad, Peshawar, Rawalpindi, Quetta, Faisalabad, Sialkot, Hyderabad, Muzaffarabad, Gujranwala, Multan, Sialkot, Mardan, Sukkur, Bahawalpur, etc., are more suitable for setting up the proposed business due to presence of large number of offices and easy availability of skilled labor in these major cities.

The proposed manufacturing unit has a maximum annual capacity of manufacturing 2,740 tables, cabinets, and racks which includes 300 Rose Wood-Executive Tables, 300 Kail Wood-Executive Tables, 500 Office Table Type 1, 500 Office Table Type 2, 300 Cabinet Type 1, 240 Cabinet Type 2 and 600 Racks. The units' maximum chairs' assembly capacity is 2,670 chairs, which includes 300 executive chairs, 600 mid back chairs, 720 mesh back chairs, 1050 task chairs.

Initially, the project is estimated to operate at 60% of the total production capacity, which is equal to 1,644 tables, cabinets, and racks. It includes 180 Rose Wood-Executive Tables, 180 Kail Wood-Executive Tables, 300 Office Table Type 1, 300 Office Table Type 2, 180 Cabinet Type 1, 144 Cabinet Type 2 and 360 Racks. For chairs, 60% capacity utilization translates into 1602 chairs, which includes 180 executive chairs, 360 mid back chairs, 432 mesh back chairs, 630 task chairs. The

production capacity utilization is assumed to increase at a rate of 5% per annum to reach the maximum capacity of 95% in Year 8.

The proposed project will be set up in a rented building having an area of 6,805 sq. ft. for the manufacturing unit and 2,290 sq. ft. for the furniture showroom. The project requires a total investment of PKR 14.28 million. This includes capital investment of PKR 10.39 million and working capital of PKR 3.88 million. The project will be established using 100% equity financing. The Net Present Value (NPV) of project is PKR 47.89 million with an Internal Rate of Return (IRR) of 68% and a Payback period of 2.23 years. Further, the proposed project is expected to generate Gross Annual Revenues of PKR 84.55 million in 1st year of operations, Gross Profit (GP) ratio ranging from 24% to 32% and Net Profit (NP) ratio ranging from 4% to 16% during the projection period of ten years. The proposed project will achieve its estimated breakeven point at capacity of 44% (2,377 units) with gross breakeven revenue of PKR 64.68 million in a year.

The proposed project may also be established using leveraged financing. At 50% financing at a cost of KIBOR+3%, the proposed manufacturing unit of office furniture provides Net Present Value (NPV) of PKR 57.65 million, Internal Rate of Return (IRR) of 66% and Payback period of 2.31 years. Further, this project is expected to generate Net Profit (NP) ratio ranging from 4% to 16% during the projection period of ten years. The proposed project will achieve its estimated breakeven point at capacity of 45% (2,443 units) with breakeven revenue of PKR 66.45 million.

The proposed project will provide employment opportunities to 29 people. It is evident from the above financial figures that the project for manufacturing of wooden doors offers reasonable profitability and is economically and financially viable. The legal business status of this project is proposed as "Sole Proprietorship".

3 INTRODUCTION TO SMEDA

The Small and Medium Enterprises Development Authority (SMEDA) was established in October 1998 with an objective to provide fresh impetus to the economy through development of Small and Medium Enterprises (SMEs).

With a mission "to assist in employment generation and value addition to the national income, through development of the SME sector, by helping increase the number, scale and competitiveness of SMEs", SMEDA has carried out 'sectoral research' to identify policy, access to finance, business development services, strategic initiatives and institutional collaboration and networking initiatives.

Preparation and dissemination of prefeasibility studies in key areas of investment has been a successful hallmark of SME facilitation by SMEDA.

Concurrent to the prefeasibility studies, a broad spectrum of business development services is also offered to the SMEs by SMEDA. These services include identification

of experts and consultants and delivery of need-based capacity building programs of different types in addition to business guidance through help desk services.

National Business Development Program for SMEs (NBDP) is a project of SMEDA, funded through Public Sector Development Program of Government of Pakistan.

The NBDP envisages provision of handholding support / business development services to SMEs to promote business startup, improvement of efficiencies in existing SME value chains to make them globally competitive and provide conducive business environment through evidence-based policy-assistance to the Government of Pakistan. The Project is objectively designed to support SMEDA's capacity of providing an effective handholding to SMEs. The proposed program aimed at facilitating around 314,000 SME beneficiaries over a period of five years.

4 PURPOSE OF THE DOCUMENT

The objective of the pre-feasibility study is primarily to facilitate the potential entrepreneurs in project identification for investment. The project pre-feasibility may form the basis of an important investment decision and in order to serve this objective, the document/study covers various aspects of project concept development, start-up, and production, marketing, finance and business management.

The purpose of this document is to provide information to the potential investors about establishing a business of "Manufacturing Unit for Office Furniture". The document provides a general understanding of the business to facilitate potential investors in crucial and effective investment decisions.

The need to come up with pre-feasibility reports for undocumented or minimally documented sectors attains greater imminence as the research that precedes such reports reveal certain thumb rules; best practices developed by existing enterprises by trial and error, and certain industrial norms that become a guiding source regarding various aspects of business setup and its successful management.

Apart from carefully studying the whole document one must consider critical aspects provided later on, which form the basis of any investment decision.

5 BRIEF DESCRIPTION OF PROJECT & PRODUCTS

Furniture is a key element within any office, not only providing comfort to the employees, but also helping in carrying out the work activities in a professional manner. The choice of office furniture is a very important decision that can seriously impact the productivity and wellbeing of the employees. Choosing furniture of correct design is also important to support healthy posture to keep the employees comfortable and to reduce the risk of long-term injuries such as lower back pain. Furthermore, office furniture plays a key role in portraying a positive first impression of any business to clients and/or general visitors. A positive first impression is crucial with regard to attracting good quality people as employees or hosting business meetings with the

clients. The workplace furnishings can assist businesses in creating the required image through their office environment and atmosphere.

This study provides information to establish an Office Furniture Manufacturing Unit. Office furniture is a vital aspect of office culture. In a modern workplace, the furniture plays an important role in creating the desired work environment, providing an enabling, safe, relaxing and comfortable atmosphere to the employees working in the office. Common office furniture products include executive chairs, mid-back chairs, mesh back chairs, task chairs, executive tables, office tables, cabinets and office racks. The proposed project will manufacture executive tables, office tables, storage cabinets and racks. Executive chairs, mid-back chairs, mesh-back chairs and task chairs will be assembled in the unit.

Office chairs are adjustable chairs, designed specifically for performing desk tasks. They are typically designed with high degree of adjustability based on individual ergonomic¹ preferences, height and stature of the user. Office chairs are usually capable of rotating at full 360 degrees, rolling on casters,² with adjustable heights of both the seat and the arms. Office chairs are further specialized for different office needs that range from task chairs for short term usage, mesh back chairs which allow better airflow to the back of the person seated, mid-back chairs with greater back support, and executive chairs with full back and head support. Figure 1 shows the four types of office chairs included in the proposed project.

Figure 1: Types of Office Chairs



Executive tables are made from wood and high gloss sheet to provide a superior look and feel. Sturdy and durable types of wood are used for construction of executive tables to give a premium look. These are medium sized tables, best suited for medium to large office spaces. They mostly consist of two desks, including a main desk and a side desk, usually on the left side for allowing ample working space. Moreover,

¹ Designed for efficiency and comfort in the working environment

² Casters are small wheels that are fastened to the bottom of chair legs to facilitate their movement across floors.

executive office tables consist of box drawers and cabinets as well. A typical executive table is shown in Figure 2.

Figure 2: Executive Table



Office tables are mostly fabricated with simple laminated chipboard which is made from saw dust, glued and pressed together. Laminated chipboard planks are easily available in major local markets at cheaper rates, compared to those of wood. These simple office tables mostly do not need a premium look or any special features. Office tables not only provide ease of work but they also help in carrying out the office activities more productively. A simple office table is shown in Figure 3.

Figure 3: Office Table



Storage cabinets and wall racks also represent a key part of office furniture. They are mostly fabricated with laminated chipboard. They are very useful for offices as they allow users to store and maintain their files and documents appropriately. Storage cabinets can be used for storing documents, files, tape files, machinery or tools. In addition, storage cabinets can provide about twice the storage capacity compared to that of a common shelving. Storage cabinets can also be used to store dangerous sharp objects in a cabinet instead of storing it on an open shelf. They can be placed in any corner of the room as they are available in a variety of sizes. Whereas the wall racks can be mounted on any wall according to the respective workplace and the requirements. Figure 4 and Figure 5 respectively show storage cabinet and wall rack.

Figure 4: Storage Cabinets



Figure 5: Wall Racks



5.1 Machinery and Equipment

There are number of machines, required for manufacturing office furniture. The machineries and equipment used in the proposed project are described below.

Vertical Band Saw Machine

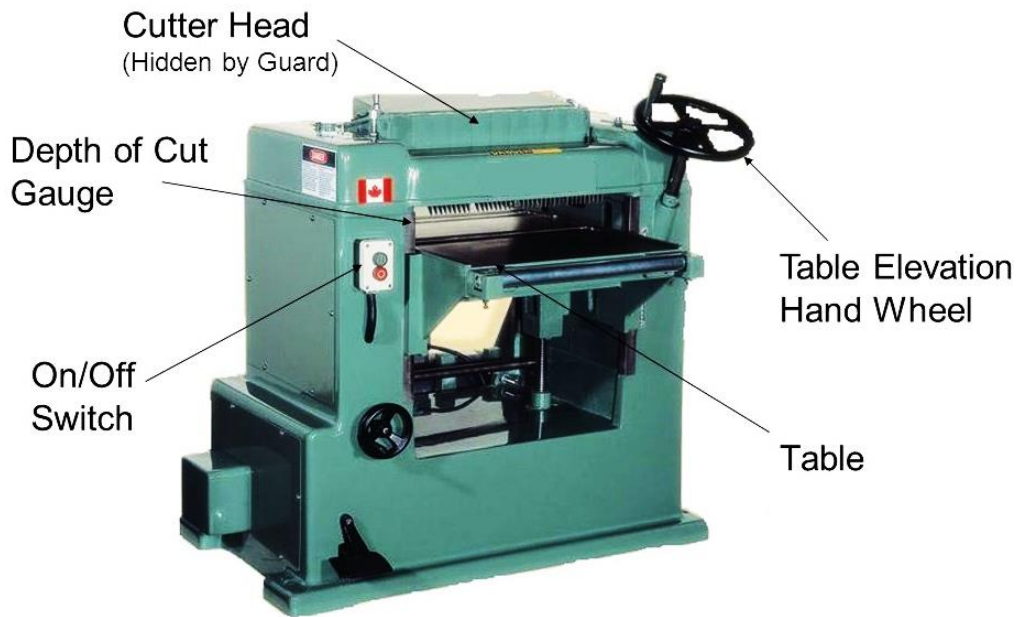
Vertical band saw machine is used to cut wooden planks into required shapes. A vertical band saw machine consists of continuous band of metal blade having teeth on one side that rotate between wheels mounted above and below the work table to cut the wood. Vertical band saw machine is powered by an electric motor that rotates the wheels with the help of belt which then moves the blade continuously at high speed. The power consumption of the electric motor of this machine is 7,500 W. Figure 6 shows a vertical band saw machine.

Figure 6: Vertical Band Saw Machine

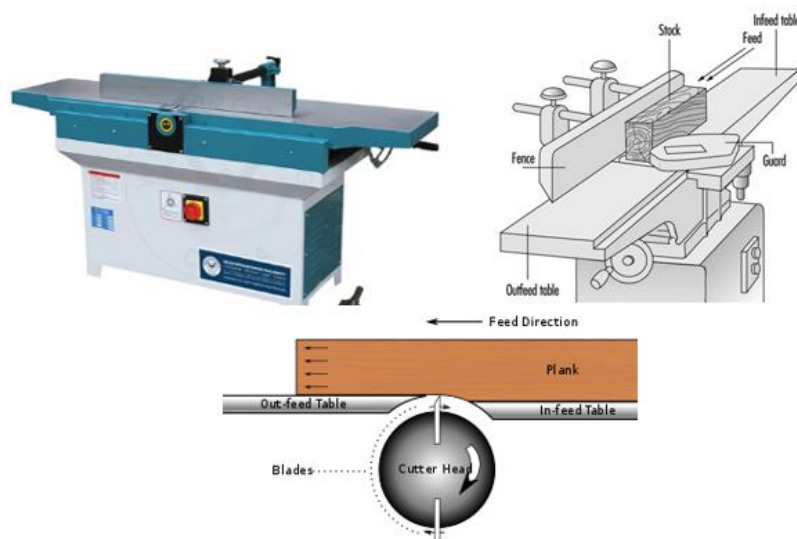


Wood Thickness Planer Machine

Wood Thickness Planer machine is used to trim the wooden plank to achieve the required thickness throughout its length. Wood Thickness Planer machine consists of a table, which is adjustable relative to the cutter head to control thickness level. The height of the table is adjusted using table elevator hand wheel. The wooden plank is placed on the table of the machine. The feeder roller grips and passes the plank through the rotating cutter head of the machine. The rotating cutter head contains the cutting knives which removes wood until the required thickness is achieved. The power consumption of this machine is 7,500 W. Figure 7 shows wood planer machine.

Figure 7: Wood Thickness Planer Machine**Wood Surface Jointer Planer Machine**

A wood surface jointer planer machine is used to remove a layer of wood from a plank to flatten the surface. It also straightens and smoothens the surface of the wooden plank from both sides. Surface Jointer Planer machine consists of in-feed and out-feed table and a cutter head, located between both the tables. The blades are attached with the cutter head which rotates to cut the wood. The out-feed table is set at the same height of cutter head and the in-feed table is set lower than the cutter head. The work piece is placed on the in-feed table and manually passed over the cutter head toward the out-feed table to remove the required layer of wood. The power consumption of this machine is 2,200W. Figure 8 shows Wood Surface Jointer Planer machine.

Figure 8: Wood Surface Jointer Planer Machine

Wood Carving CNC Router

Wood carving CNC router is a computer numerical controlled machine used to make designs on wood using software program. The required design is entered into a software program of the machine. The work piece is tightened by the screws to fix it on the bed of the machine. After giving work command, the router automatically starts carving the design onto the wooden piece according to the fed design. The power consumption of this machine is 2,200W. Figure 9 shows wood carving CNC Router.

Figure 9: Wood Carving CNC Router



Edge Banding Machine

Edge banding machine is used to create decorative edges on panel and boards. The machine cuts the wood's edges and then uses adhesive to attach colorful edge strips. It is mainly used to support the edges of plywood panels, particle boards, or MDF, making it more durable and less susceptible to damage. Edge bander machine works by feeding an edge strip through the machine until it is tight against the processed particle board. A hot air gun applies heat to activate the glue and hold the strip in its place. A clamp then presses and holds the banding firmly against the board's edge as it moves through a roller press for several seconds to ensure that there is sufficient glue on all parts of the banding material. A second hot air gun applies more heat which melts any remaining adhesive allowing the user to cut off any excess banding material easily. Figure 10 shows an edge banding machine.

Figure 10: Edge Banding Machine



Wood Sanding Machine

Wood sanding machine is used to make the rough surface of the wood smooth by abrasion³ with sand paper. It removes cutter marks, scratches, small glue spots and raised grains from the wood. It uses a sand paper with a mechanism to move it rapidly throughout the plank with hand hold position. Power consumption of this machine is 320W. Figure 11 shows wood sanding machine.

Figure 11: Wood Sanding Machine



Hand Saw

Hand Saw is also known as panel saw. It is a tool consisting of a tough blade with a hard toothed edge. It is mainly used to cut the wood. The cut is made by placing the toothed edge against the wood and moving it forcefully forth and less vigorously back or continuously forward. Figure 12 shows hand saw.

Figure 12: Hand Saw



Circular Saw

Circular saw is an electric saw that uses a rotating round flat blade with sharp teeth to cut the wood. It has a handle with on/off trigger switch, an arbor nut to hold the blade in place, and guards to protect the operator from touching the spinning blade. Circular saws have height/depth and bevel adjustments. Figure 13 shows a circular saw.

Figure 13: Circular Saw



³ the process of scraping or wearing something away.

Pneumatic Nail Gun Machine

A pneumatic nail gun is a better alternate to a hammer which is used to drive nails into the wood. Pneumatic nail gun machine is powered by compressed air. Nail gun is attached with air compressor with the help of air hose. When the trigger of nail gun is pulled, air pressure builds up, which creates enough force to fix the nail in the workpiece. Figure 14 shows pneumatic nail gun.

Figure 14: Pneumatic Nail Gun Machine



Hand Drill Machine with Accessories

A hand drill machine is a tool primarily used for making round holes or driving fasteners. It is fitted with a bit, either a drill or driver, depending on application, secured by a chuck. Some powered drills also include a hammer function. Drill machine requires electricity power of 0.55 KW. Figure 15 shows hand drill machine with accessories.

Figure 15: Hand Drill Machine with Accessories



Wooden Panel Bar Clamps

Wooden panel bar clamps are used to hold and align the wooden pieces together after gluing. A wood panel bar consists of a long bar with two jaws, one being movable and the other fixed. Movable jaw has a large screw which is tightened to hold a wooden piece firmly. Figure 16 shows wooden panel bar clamp.

Figure 16: Wooden Panel Bar Clamp**Moisture Meter**

A moisture meter is used to detect level of moisture in a wooden plank. It consists of two pins that inserted into a wooden surface, which measures the electrical resistance between both the pin points and the meter shows reading of moisture content by translating electrical resistance. Figure 17 shows moisture meter.

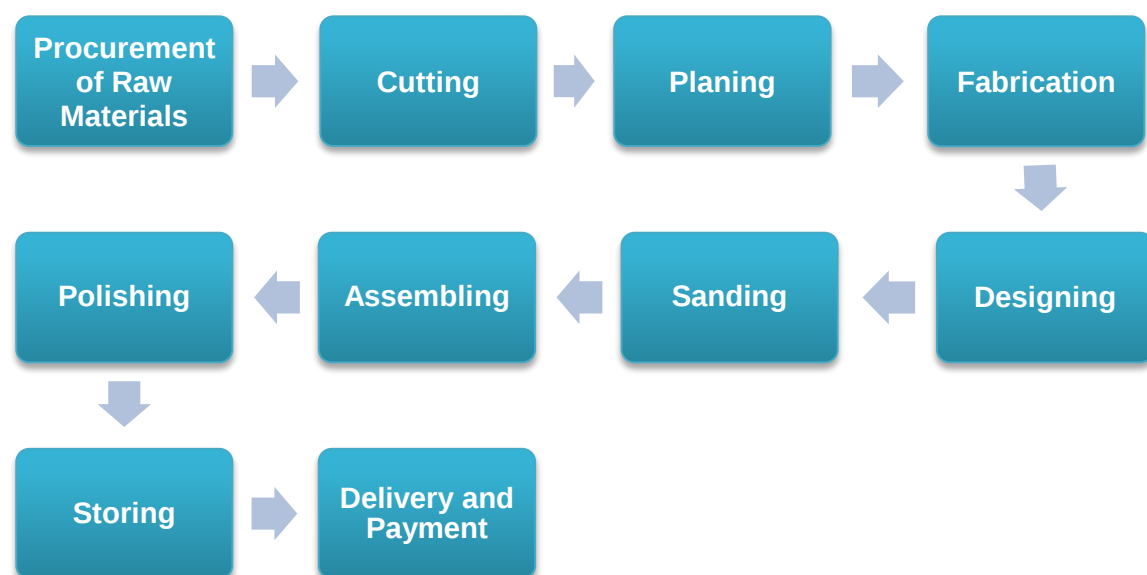
Figure 17: Moisture Meter**General Wood Worker Tool Kit**

General tool kit includes hand carving tools, hand planer tools, measuring tools, hand saws, hand drills, sand papers, screw drivers, chisels, stainless steel rulers, measuring tapes, etc. Figure 18 shows general wood worker tools.

Figure 18: General Wood Worker Tool Kit

5.2 Production Process Flow for Executive Table

The production process flow of manufacturing executive table is shown in Figure 19.

Figure 19: Manufacturing Process of Executive Tables

Procurement of Wood

The first step in manufacturing of wooden executive table is the procurement of wooden planks. Local seasoned wooden⁴ planks are procured for the proposed project. The wood required for the proposed project is available in all the major markets across Pakistan. The wooden planks are procured in cubic feet measurement. Executive tables are made from two types of wood i.e., rosewood and kail wood. Wooden planks are usually purchased on 10 days credit period.

During procurement, the quality of the wood is closely inspected. Visual inspection is carried out to identify any worm holes, rots and knots. Figure 20 shows worm holes, rots and knots in the wood.

Figure 20: Worm Holes, Rots and Knots in Wood



Moisture content is also checked with the help of moisture meter. Seasoned wood is required for office furniture manufacturing. Although, the benchmark for moisture content for seasoned wood is 20%, for furniture, the ideal moisture content is around 15%. This is important to avoid any cracking of the wooden plank during production process or its bending after it is converted into furniture. After inspection, the raw material is procured from the supplier. The wooden planks can be stored both vertically and horizontally. The planks must be stored in a clean and dry place to prevent them from absorbing moisture. Raw material inventory of 8 days of production is commonly maintained in this business. Figure 21 shows wooden planks.

Figure 21: Wooden Planks



⁴ Seasoned wood means the wood that has a moisture content equal to or less than 20%.

Cutting

After procurement, the wooden planks are marked according to the required sizes and are then cut with the help of vertical band saw machine. Further accuracy in the measurements of the planks is achieved through electric saw. Figure 22 shows cutting of wooden planks.

Figure 22: Cutting of Wooden Planks



Planing

In this process, the wood pieces from the electric saw are fed into the in-feed table of the wood surface planer machine. The height of the in-feed table is manually adjusted according to the required level. The wood is manually passed over the cutter head which removes the extra layer of wood to flatten its surface. Figure 23 shows surface planing of wood.

Figure 23: Surface Planing of Wood



After surface planing of wood, the wood is entered into a thickness planer machine. The wooden plank passes through the cutter head with the help of feeder roller. The cutter head of the machine trims the undesired upper layer of wood from the work piece to achieve the required thickness. Figure 24 shows thickness planing of wood.

Figure 24: Thickness Planing of Wood**Fabrication**

In this process, to fabricate rectangular workspace of the table (main desk and side desk), glue is applied on the edges of the planks which are then attached horizontally with each other. Bar clamps are placed on each end of the joined planks. The bar clamps are tightened to apply force on each end of the joined planks which holds them firmly, making the joint strong. For fabricating supporting sides and front of the table, same process is repeated.

Designing

After fabrication, the rectangular work space and front supporting side is placed on the bed of CNC router machine for creating designs on the workpiece. The designer makes the designs for the table on a computer software (Fusion 360). The design is entered into the machine via software. After work command, the router starts carving onto the workpiece as per the design. Figure 25 shows process of carving.

Figure 25: Carving

Sanding

Sanding is done on the fabricated pieces of wood with the help of sanding machine, using an abrasive. This removes small amounts of material from the surface of wood. Sanding machine enhances the appearance of the wood. Sanding may also be done manually but it takes more time than that by a sanding machine.

Assembling Process

After sanding the fabricated parts, holes are drilled with help of drill machine on the lower ends of three sides of the rectangular workspace. Consequently, same number of holes are also drilled on the upper ends of the three supporting sides of table. Dowel pins are inserted into the holes of the rectangular workspace. Glue is applied on the dowels and inserted into the holes of supporting sides. Dowels of the rectangular workspace are inserted into the holes of the supporting sides, making joint of the supporting sides with the rectangular workspace. Bar clamps are attached with the sides of the rectangular workspace and supporting side to hold the joint which helps to make the joints strong. Figure 26 shows assembling using dowels.

Figure 26: Assembling using Dowels



Polishing

Before polishing, sanding is also done to remove any unwanted materials from the wood surface. After sanding, the wood surface is cleaned thoroughly. Spirit solution is applied thoroughly on the wooden surface with repeated coating. The spirit is applied as much as the wood soaks and makes an even surface. Then, the table is left to dry. Sanding is again done for better finishing. Polish is applied manually on the surface with the help of super fine steel wool. Once the wood is completely dried, another solution, consisting of sealer with hardener and thinner, is applied. After drying, lacquer solution with hardener and thinner is applied on the surface of rectangular work space. Polishing provides glossy look and restores the shine of the wood.

Storing

After polishing, the executive tables are visually inspected for any holes or breaks. The tables, passing the quality inspection, are stored into the finished goods store until they are delivered to the showroom or to the customer.

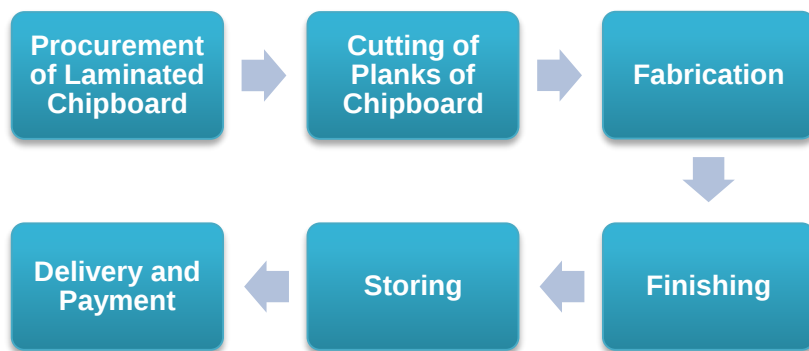
Delivery and Payment

There will be no credit offered to the customers for payment. The cost of transporting the executive table to the customers premises is usually paid by the customer.

5.3 Production Process Flow for Office Tables

The production process flow of manufacturing office tables, storage cabinets and wall racks is shown in Figure 27.

Figure 27: Manufacturing Process of Office Tables



Procurement of Laminated Chipboard

The first step in office furniture manufacturing is the procurement of local laminated chipboard planks which are available in all the major markets across Pakistan. The chipboard planks are procured according to their dimensions and thicknesses. The prices of these planks vary with different dimensions and thicknesses. In the proposed project, the chipboard planks are purchased on 10 days credit period. The chipboard planks can be stored both vertically and horizontally. The planks must be stored in a clean and dry place to prevent them from absorbing moisture. Raw material inventory equal to eight days of production will be maintained in the proposed business. Figure 28 shows laminated chipboard planks.

Figure 28: Laminated Chipboard Planks



Cutting of Chipboard Planks

After procurement, the chipboard planks are marked and cut with the help of circular saw machine according to the measurements of the required component to of the table, cabinets and racks to be formed. The chipboard plank is manually passed according to marked measurements through the blade of the machine which cuts the chipboard. Figure 29 shows cutting of chipboard planks.

Figure 29: Cutting of Chipboard Planks



Fabrication

In this process, to fabricate an office table, the cut components of an office table i.e., i.e., the rectangular workspace, front supporting side and the left and right supporting sides are joined with each other to form the shape of an office table. They are joined in such a way that the rectangular workspace comes on the top and is supported by the front, left and right supporting sides from underneath. This process is performed by applying glue on the edges of each component which are to be joined and finally the nails are inserted in the joints so that the components are firmly attached to form a final shape of an office table as shown in Figure 3. The same process is done for each component of storage cabinets and racks to form their final shape as shown in Figure 4 and Figure 5 respectively.

Finishing

The finishing process includes attaching the self-adhesive chrome strips on the edges of each side of all the major components of the office table i.e., the rectangular workspace, front supporting side and the left and right supporting sides. The finishing process is also done for storage cabinets and racks as well. This process is done with the help of an edge banding machine. Figure 30 shows edge banding process.

Figure 30: Edge Banding**Storing**

After finishing, the completed office tables, cabinets and racks are visually inspected to verify that the surfaces of the products do not contain any open holes and breaks. They are then stored after inspection into the finished goods storeroom until they are delivered to the showroom or the customer.

Delivery and Payment

There are no credit days allowed to the customers for payment. The tables, cabinets and racks are transported to the customers' premises from either the showroom or the manufacturing unit. The transportation cost for delivery is usually paid by the customers.

5.4 Process Flow of Assembling Office Chairs

The process flow for assembling office chairs is shown in Figure 31.

Figure 31: Process Flow for Assembling Office Chairs**Procurement of Parts**

The raw materials are procured from the local suppliers who import the raw material since these are not manufactured locally. All the parts used in assembling office chairs are imported. The parts required for assembling of chairs are shown in Figure 32.

Figure 32: Parts Required**Assembling of Chairs**

In assembling process, initially wheels are fitted into the five-star base. The plastic modesty cover is placed over the gas lift and inserted into the base. The base plate is fitted under the cushion seat. The mechanism is secured by placing the screws into the holes and tightening the screws. A metal securing plank is screwed under the seat. A safety cover is then added to the plank, the seat of the chair is then placed on the gas lid, pressure is added to the mechanism, the seat is then screwed into place using screws, and the armrests are fitted with the seats with screws. A metal securing plank under the seat before installation over gas lid is shown in Figure 33. Five-star base and gas lift are shown in Figure 34.

Figure 33: Metal Securing Plank

Figure 34: Five Star Base and Gas Lift**Delivery and Payment**

There are no credit days allowed to the customers for payment. The chairs are transported to the customers' premises from either the showroom or the manufacturing unit. The transportation cost for delivery is paid by the customers.

5.5 Installed and Operational Capacities

The proposed manufacturing unit has a maximum annual capacity of manufacturing total number of 2,740 products which includes 300 Rose Wood-Executive Tables, 300 Kail Wood-Executive Tables, 500 Office Table Type 1, 500 Office Table Type 2, 300 Cabinet Type 1, 240 Cabinet Type 2 and 600 Racks. Maximum assembly capacity of assembly 2,670 which includes 300 executive chairs, 600 mid back chairs, 720 mesh back chairs, 1050 task chairs. Initially, the project is estimated to manufacture the products at 60% of the total production capacity, which is equal to 1,644 products. It includes 180 Rose Wood-Executive Tables, 180 Kail Wood-Executive Tables, 300 Office Table Type 1, 300 Office Table Type 2, 180 Cabinet Type 1, 144 Cabinet Type 2 and 360 Racks and assembling capacity is 1602 which includes 180 executive chairs, 360 mid back chairs, 432 mesh back chairs, 630 task chairs. The project will be operational for 300 working days annually and 10 working hours per day.

The production capacity utilization is assumed to increase at a rate of 5% per annum to reach the maximum capacity of 95% in Year 8. High return on investment and steady growth of business is expected with the entrepreneur having some prior experience or education in the related field of business. Table 1 and Table 2 show installed and operational production and assembling capacity respectively. Table 3 and Table 4 show details of production capacity assumptions whereas, Table 5 and Table 6 show details of assembling capacity assumptions.

Table 1: Installed and Operational Production Capacity

Particulars	Annual No. of Skilled Hours Available per Product	Time Required per Product (Hours)	No. of Products in a Year @ 100% Capacity	No. of Products in a Year @ 60% Capacity
<i>Formulas</i>	<i>A (Table 3)</i>	<i>B</i>	<i>C=A*B</i>	<i>D=C*60%</i>
Rose Wood-Executive Tables	4,500	15	300	180
Kail Wood-Executive Tables	4,500	15	300	180
Office Table Type 1	3,000	6	500	300
Office Table Type 2	3,000	6	500	300
Cabinet Type 1	1,800	6	300	180
Cabinet Type 2	1,200	5	240	144
Racks	3,000	5	600	360
Total			2,740	1,644

Table 2: Installed and Operational Assembling Capacity

Particulars	Annual No. of Skilled Hours Available per Product	Time Required per Product (Hours)	No. of Products in a Year @ 100% Capacity	No. of Products in a Year @ 60% Capacity
<i>Formulas</i>	<i>A (Table 5)</i>	<i>B</i>	<i>C=A*B</i>	<i>D=C*60%</i>
Executive Chairs	450	1.5	300	180
Mid Back Chairs	600	1.0	600	360
Mesh Back Chairs	900	1.25	720	432
Task Chairs	1,050	1.0	1,050	630
Total			2,670	1,602

Table 3: Production Capacity Assumptions– Tables, Cabinets & Racks

Products	Skilled Hours Available Annually	Percentage Proportion	Skilled Hours Available Annually per Product
<i>Formulas</i>	<i>A (Table 4)</i>	<i>B</i>	<i>C= A*B</i>
Executive Tables			
Rose Wood-Executive Tables	9,000	50%	4,500
Kail Wood-Executive Tables		50%	4,500
Office Tables			
Office Table Type 1	6,000	50%	3,000
Office Table Type 2		50%	3,000
Cabinets			
Cabinets Type 1	3,000	60%	1,800
Cabinets Type 2		40%	1,200
Racks	3,000	100%	3,000

Table 4: Production Capacity Assumptions – Tables, Cabinets & Racks

Particulars	No.of Skilled Workers	Hours Available Per Day Per Worker	Total Hours Available Per Day	Total Skilled Hours Available
<i>Formulas</i>	<i>A</i>	<i>B</i>	<i>C=A*B</i>	<i>D=C*300</i>
Executive Table	3	10	30	9,000
Office Table	2	10	20	6,000
Cabinets	1	10	10	3,000
Racks	1	10	10	3,000

Total	7			21,000
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Table 5: Assembling Capacity Assumptions – Office Chairs

Products	Skilled Hours Available Annually	Percentage Proportion	Skilled Hours Available Annually per Product
<i>Formulas</i>	<i>A (Table 6)</i>	<i>B</i>	<i>C= A*B</i>
Executive Chairs	3,000	15%	450
Mid Back Chairs		20%	600
Mesh Back Chairs		30%	900
Task Chairs		35%	1,050
Total			3,000

Table 6: Assembly Capacity Assumption – Office Chairs

Particulars	No.of Skilled Workers	Hours Available Per Day Per Worker	Total Hours Available Per Day	Total Skilled Hours Available
Executive Chairs	1	10	10	3,000
Mid Back Chairs				
Mesh Back Chairs				
Task Chairs				

6 CRITICAL FACTORS

Before making the decision to invest in the business of office furniture manufacturing, investor must know about the key types of woods and chipboards used for office furniture manufacturing and their demand in the market. The associated risk factors of this business should also be taken into account. Some critical factors to be considered before starting this business are given below:

- Good understanding of the industry
- Good knowledge of market demand
- Easy availability of high-quality wood
- Evaluating prospective customer base
- Availability of skilled workforce
- Knowing major competitors
- Knowledge about the modern machinery and equipment

7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

The manufacturing unit of office furniture is proposed to be established in larger cities like Karachi, Lahore, Islamabad, Peshawar, Rawalpindi, Quetta, Faisalabad, Sialkot, Hyderabad, Muzaffarabad, Gujranwala, Multan, Sialkot, Sukkur, Mardan, Gilgit, Bahawalpur, Dera Ghazi Khan, Sahiwal or any other major city of Pakistan. Larger cities are suitable for the proposed business due to presence of large number of existing businesses, public and private offices, schools, hospitals, hotels etc. Moreover, easy availability of skilled labor and raw material make these areas more appropriate for the proposed business.

8 POTENTIAL TARGET CUSTOMERS / MARKETS

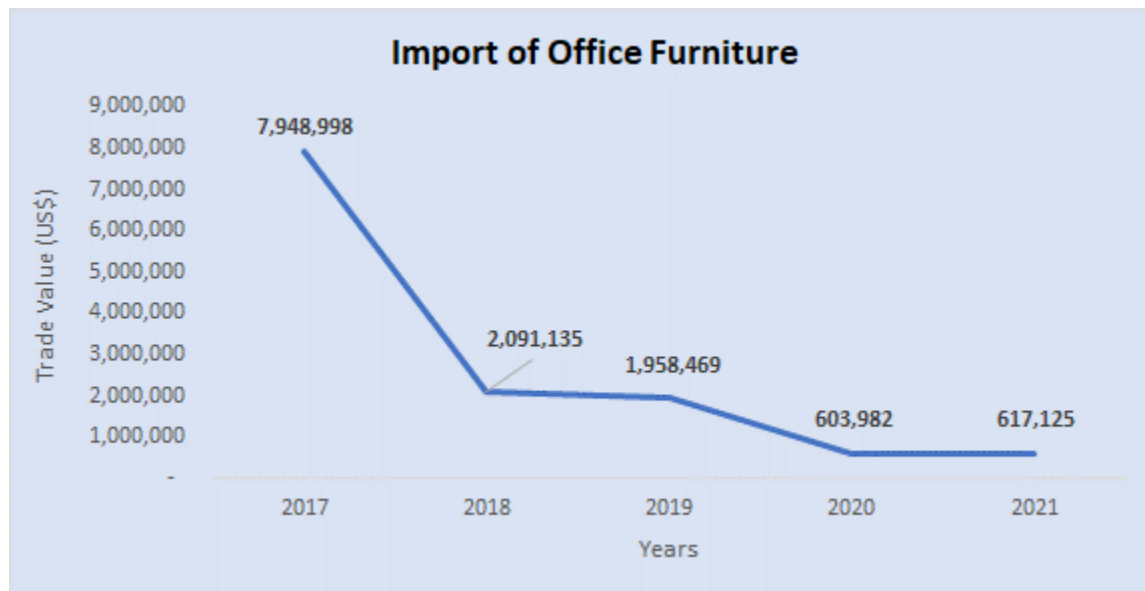
Organizations such as commercial offices, schools, banks, hospitals, hotels, etc., requiring office furniture, are the potential customers of the proposed business. Furthermore, with a continuously changing work environment, working from home has become more popular in the recent years. As people adapt to a home office setting, office furniture is needed to ensure a good working environment like that of a traditional office. Furniture used for home offices is useful to provide a comfortable and motivating work environment.

In recent years, there has been strong growth in start-ups in Pakistan. According to the Security and Exchange Commission of Pakistan (SECP), the country has moved up in

the World Bank's Ease of Doing Business Index for the second consecutive year since 2019, going from 130th to 72nd in the 'Starting a business' category. The Securities and Exchange Commission of Pakistan (SECP) has registered 2,354 new companies in March 2022, raising the total number of registered companies to 165,688.

According to UNCOMTRADE (under HS code 940330), Pakistan's total import of office furniture in the year 2021 was US\$617,125 and export was US\$763,338.⁵ Figure 35 and Figure 36 shows the trend of local import and export of office furniture over the last period of last 5 years. Revenue in the Office Furniture market of Pakistan was US\$20.08m in 2022. It is further expected to grow annually by 3.82% (CAGR 2022-2026)⁶.

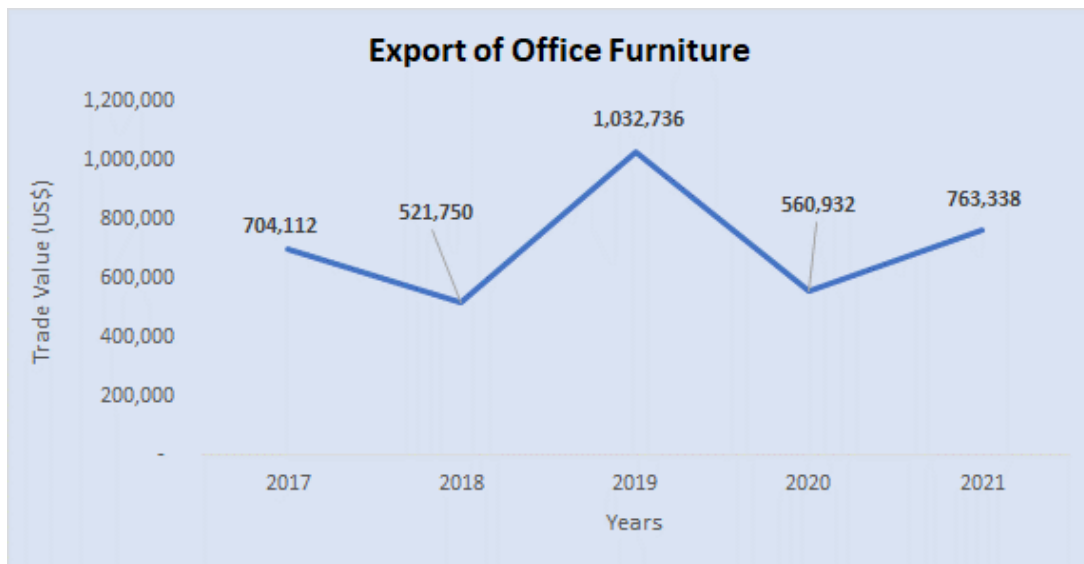
Figure 35: Import of Office Furniture



The decreasing trend of import of office furniture and increase in number businesses in Pakistan showing growth in local office furniture manufacturing industry. The dependency of office furniture on imports has reduced significantly during the past few years.

⁵ <https://comtrade.un.org/data>

⁶ <https://www.statista.com/outlook/cmo/furniture/home-office-furniture/pakistan>

Figure 36: Export of Office Furniture

The export of office furniture decreased after the year 2019 due to COVID-19 which affected the production of businesses and disturbed supply chains all over the world. The export trend started to increase after the year 2020 which indicates an increase in demand of office furniture.

Currently, numerous office furniture companies are operational in Pakistan including local manufacturing companies and some global dealerships. Some of the leading local brands of office furniture are Interwood, Furniture Hub, Workman, Profine, Spirit Furnitures, HOiD (Home and Office Interior Decorators and Apna Furniture. These are the leading brands and formal manufacturers having showrooms in all major cities of Pakistan. Furthermore, there are also many small-scale office furniture manufacturers, mostly providing office furniture to small and medium enterprises.

9 PROJECT COST SUMMARY

A detailed financial model has been developed to analyze the commercial viability of Manufacturing Unit for Office Furniture. Various costs and revenue related assumptions, along with results of the analysis are outlined in this section.

The projected Income Statement, Cash Flow Statement and Balance Sheet are attached as Annexure.

9.1 Project Economics

All the figures in this financial model have been calculated after carefully taking into account the relevant assumptions and target market.

9.2 Initial Project Cost Estimates

Total cost of the project has been calculated to be PKR 14.28 million. The project will be financed through 100% Equity. Table 7 provides fixed and working capital requirements for establishment and operations.

Table 7: Initial Project Cost

Cost Item	Cost (PKR)	Reference
Land	-	9.2.1
Building / Infrastructure	1,781,702	9.2.2
Machinery & Equipment	4,337,800	9.2.3
Tools and Equipment	330,000	9.2.4
Office equipment	1,328,500	9.2.5
Furniture & fixtures	473,000	9.2.6
Vehicle Requirement	126,000	9.2.7
Pre-operating costs	456,366	9.2.8
Advance against Building Rent	1,560,000	9.2.9
Total Capital Cost	10,393,368	
Working Capital Cost		
Equipment spare part inventory	18,074	
Raw material inventory	2,343,897	
Prepaid Building Rent	520,000	
Cash	1,000,000	
Total Working Capital	3,881,971	
Total Project Cost	14,275,340	

9.2.1 Land

The proposed unit of manufacturing of office furniture will be established in a rented building to avoid the high cost of land. Furthermore, a furniture showroom will also be established in a rented building at some commercial market area. Suitable locations for setting up a unit and show room like this can be easily found on rent. Therefore, no land cost has been added to the project cost. Total space requirement for the proposed manufacturing unit has been estimated as 6,805 sq. ft. and Furniture Showroom has been estimated as 2,290 sq. ft. The breakup of space requirement is provided in Table 8 and Table 9.

Table 8: Breakup of Land of Manufacturing unit

Description	% Break-Up	Number	Area (Sq. Ft.)
Executive Office	4%	1	300
Admin & Accounts Department	2%	1	120
Sales & Marketing Department	2%	1	120
Raw Material Store Room	15%	1	1,050
Production & Assembly Area	53%	1	3,575
Finished Goods Store Room	21%	1	1,400
Washroom	4%	3	240
Total	100%		6,805

Table 9: Breakup of Furniture Showroom

Description	% Break-Up	Number	Area (Sq. Ft.)
Reception & Cash Counter Area	2%	1	50
Furniture Display Area	96%	1	2,200
Washroom	2%	1	40
Total	100%		2,290

9.2.2 Building

There will be no cost of building since the proposed manufacturing unit of wooden doors will be started in the rented premises. However, there will be a renovation cost, required to make the building usable for the business. The proposed manufacturing unit requires estimated electricity load of around 39.18 KW for which an electricity connection under the industrial supply tariff, three phase will be required. The proposed furniture showroom requires estimated electricity load of around 5.89 KW for which an electricity connection under the commercial supply tariff, three phase will be required. Manufacturing Unit Building and Furniture Showroom rents of PKR 350,000 and 170,000 per month respectively have been included in the operating cost. Table 10 provides details of building renovation cost.

Table 10: Renovation Cost

Cost Item	Unit of Measurement	Total Liter / Area / Number	Cost/Unit/ Sq.feet	Total Cost (PKR)
Paint Cost	Liter	170	800	136,192
Labour Cost	Feet	17,024	15	255,360
Blinds	Units	8	7,000	56,000
Glass Partition	Sq. Feet	711	550	391,050
Tiles	Sq. Feet	2,290	350	801,500
Labour Cost - Tiles	Sq. Feet	2,290	40	91,600
Decorative items				50,000
Total				1,781,702

9.2.3 Machinery and Equipment

Table 11 provides details of machinery and equipment required for the project.

Table 11: Machinery and Equipment

Cost Item	Unit(s)	Unit Cost (PKR)	Total Cost (PKR)
Wood Thickness Planer Machine	1	600,000	600,000
Wood Surface Jointer Planer Machine	1	500,000	500,000
Vertical Band Saw Machine	1	500,000	500,000
CNC Carving Machine/ CNC Router	1	550,000	550,000
Wood Sander Machine	2	8,000	16,000
Edge Banding Machine	2	450,000	900,000
Hand Saw	8	2,100	16,800
Circular Saw	4	50,000	200,000
Nail Gun Machine	5	20,000	100,000
Drilling Machine	5	16,000	80,000
Hammer	10	2,500	25,000
Diesel Power Generator (50 KW)	1	850,000	850,000
Total			4,337,800

9.2.4 Tools and Equipment

Table 12 shows the details of tools and equipment.

Table 12: Tools and Equipment

Cost Item	Units	Unit Cost (PKR)	Total Cost (PKR)
Moisture Meter	2	5,000	10,000
Wooden Panel Bar Clamps	20	8,500	170,000
General Wood Worker Tool Kit	3	20,000	60,000
Working Tables (Adda)	3	30,000	90,000
Total			330,000

9.2.5 Office Equipment Requirement

Table 13 and Table 14 present the office equipment requirement for manufacturing unit and showroom respectively.

Table 13: Office Equipment Requirement – Manufacturing Unit

Cost Item	Units	Unit Cost (PKR)	Total Cost (PKR)
Air Conditioner (1 Ton)	3	90,000	270,000
Laptop	1	150,000	150,000
Desktop Computer	2	75,000	150,000
Printer	1	40,000	40,000
LED/LCD 32	1	40,000	40,000
Water Dispenser	1	25,000	25,000
Ceiling Fan	8	8,000	64,000
Exhaust Fan	7	4,500	31,500
Pedestal Fan	4	10,000	40,000
Wi-Fi Router and Connection	1	3,500	3,500
Security System (8 Cams , 1 MP)	8	2,500	20,000
DVR	1	15,000	15,000
Total			849,000

Table 14: Office Equipment Requirement - Showroom

Cost Item	Units	Unit Cost (PKR)	Total Cost (PKR)
Air Conditioner (1 Ton)	3	90,000	270,000
Desktop Computer	1	75,000	75,000
LED/LCD 32	1	40,000	40,000
Water Dispenser	1	25,000	25,000
Ceiling Fan	4	8,000	32,000
Exhaust Fan	2	4,500	9,000
Wi-Fi Router and Connection	1	3,500	3,500
Security System (4 Cams , 1 MP)	4	2,500	10,000
DVR	1	15,000	15,000
Total			479,500

9.2.6 Furniture and Fixture Requirement

Table 15 gives details of the furniture and fixture required for the project.

Table 15: Furniture and Fixtures Requirement

Cost Item	Units	Unit Cost(PKR)	Total Cost(PKR)
Executive Table (s)	1	60,000	60,000
Office Table	5	30,000	150,000
Executive Chairs	1	30,000	30,000
Office Chair	10	14,000	140,000
Staff Plastic Chair(s)	12	2,000	24,000
Staff Table	4	6,000	24,000
Sofa Sets	1	45,000	45,000
Total			473,000

9.2.7 Vehicle Requirement

Details of vehicles required for the project is given in Table 16.

Table 16: Vehicle Requirement

Cost Item	Unit(s)	Unit Cost (PKR)	Registration Fee (PKR)	Total Cost (PKR)
Motorcycle	1	120,000	6,000	126,000
Total Cost				126,000

9.2.8 Pre-Operating Cost Requirement

Details of pre operating cost required for the project is given in Table 17.

Table 17: Pre-Operating Cost Requirement

Cost Item	Total (PKR)
Administration exp.	335,000
Utilities exp.	121,366
Total (PKR)	456,366

9.2.9 Advance against Building Rent

Details of advance against building rent for the project is given in Table 18.

Table 18: Advance against Building Rent

Cost Item	Months	Unit Cost (PKR)	Total Cost (PKR)
Advance Against Manufacturing Unit Building Rent	3	350,000	1,050,000
Advance Against Furniture Showroom Building Rent	3	170,000	510,000
Total Cost (PKR)			1,560,000

9.3 Breakeven Analysis

Table 19 shows calculation of break-even analysis.

Table 19: Break-Even Analysis

Description	Amount First Year (PKR)	Ratios
Sales (PKR) – A	84,553,000	100%
Variable Cost (PKR) – B	65,329,197	77%
Contribution (PKR) (A-B) = C	19,223,803	23%
Fixed Cost (PKR) – D	14,705,246	17%
Breakeven Revenue	64,678,807	
Breakeven Units	2,377	
Breakeven Capacity	44%	

9.4 Revenue Generation

Based on 60% capacity utilization, sales revenue during the first year of operations is shown in Table 20.

Table 20: Revenue Generation

Product	Unit Sold	Price (PKR)	Total Revenue (PKR)
Production			
Rose Wood-Executive Tables	172	130,000	22,360,000
Kail Wood-Executive Tables	172	90,000	15,480,000
Office Table Type 1	287	25,000	7,175,000
Office Table Type 2	287	18,000	5,166,000
Cabinet Type 1	172	25,000	4,300,000
Cabinet Type 2	138	18,000	2,484,000
Racks	345	5,000	1,725,000
Sub total			58,690,000
Assembly			
Executive Chairs	172	30,000	5,160,000
Mid Back Chairs	345	15,000	5,175,000
Mesh Back Chairs	414	20,000	8,280,000

Task Chairs	604	12,000	7,248,000
Sub total			25,863,000
Total			84,553,000

9.5 Variable Cost Estimate

Variable costs of the project have been provided in Table 21.

Table 21: Variable Cost Estimate

Description of Costs	Amount (PKR)
Material Cost- Executive Tables (Table 22)	24,654,480
Material Cost- Office Tables (Table 22)	7,411,775
Material Cost- Cabinets (Table 22)	5,104,780
Material Cost- Racks (Table 22)	1,055,700
Material Cost- Office Chairs (Table 22)	18,026,800
Material Transportation Cost	1,125,071
Direct Electricity	683,751
Direct Labor (Table 38)	6,180,000
Fuel Cost-Generator	136,750
Machinery Maintenance – Cost (Table 39)	216,890
Communications expense (phone, fax, mail, internet, etc.)	282,000
Office vehicles running expense	282,000
Office expenses (stationery, entertainment, janitorial services, etc.)	169,200
Total Variable Cost	65,329,197

Table 22: Material Cost

Material	No. of Units	Cost Per Unit (PKR)	Total Cost (PKR)
Production			
Rose Wood Executive Table (Table 23)	172	86,395	14,859,940
Kail Wood Executive Table (Table 26)	172	56,945	9,794,540
Office Table - Type 1 (Table 29)	287	15,410	2,989,105

Office Table - Type 2 (Table 30)	287	10,415	4,422,670
Cabinet Type 1 (Table 31)	172	19,345	3,327,340
Cabinet Type 2 (Table 32)	138	12,880	1,777,440
Racks (Table 33)	345	3,060	1055700
Assembling			
Executive Chair (Table 34)	172	20,000	3,440,000
Mid-Back Chair (Table 35)	345	12,000	4,140,000
Mesh Back Chair (Table 36)	414	14,000	5,796,000
Task Chair (Table 37)	604	7,700	4,650,800
Total			56,253,535

Table 23: Rose Wood Executive Table

Particulars	Total (PKR)
Main Desk (Table 24)	47,500
Side Desk (Table 25)	38,895
Total (PKR)	86,395

Table 24: Rose Wood Executive Table - Main Desk

Cost Item	Unit of Measurement	Consumption	Unit Cost (PKR)	Total Cost (PKR)
Rosewood	Cubic Feet	8.55	4,000	34,200
High Gloss Sheet	No.	1	5,000	5,000
Drawer Railing	No.	2	200	400
Locks	No.	2	100	200
Hinges	No.	2	600	1,200
Nails (1 kg)	Kg	0.5	300	150
Glue	No.			150
Drawer & Cabinet Handles	No.	2	100	200
Polish & Paint	Litre			6,000
Total				47,500

Table 25: Rose Wood Executive Table - Side Desk

Cost Item	Unit of Measurement	Consumption	Unit Cost (PKR)	Total Cost (PKR)
Rosewood	Cubic Feet	6.175	4,000	24,700
High Gloss Sheet	No.	1	5,000	5,000
Drawer Railing	No.	4	200	800
Locks	No.	4	100	400
Hinges	No.	4	600	2,400
Nails (1 kg)	Kg	0.25	300	75
Glue	No.			120
Drawer & Cabinet Handles	No.	4	100	400
Polish & Paint	Litre			5,000
Total				38,895

Table 26: Kail Wood Executive Table

Particulars	Total (PKR)
Main Desk (Table 27)	30,400
Side Desk (Table 28)	26,545
Total (PKR)	56,945

Table 27: Kail Wood Executive Table - Main Desk

Cost Item	Unit of Measurement	Consumption	Unit Cost (PKR)	Total Cost (PKR)
Kailwood	Cubic Feet	8.55	2,000	17,100
High Gloss Sheet	No.	1	5,000	5,000
Drawer Railing	No.	2	200	400
Locks	No.	2	100	200
Hinges	No.	2	600	1,200
Nails (1 kg)	Kg	0.5	300	150
Glue	No.			150

Drawer & Cabinet Handles	No.	2	100	200
Polish & Paint	Litre			6,000
Total				30,400

Table 28: Kail Wood Executive Table - Side Desk

Cost Item	Unit of Measurement	Consumption	Unit Cost (PKR)	Total Cost (PKR)
Kailwood	Cubic Feet	6.175	2,000	12,350
High Gloss Sheet	No.	1	5,000	5,000
Drawer Railing	No.	4	200	800
Locks	No.	4	100	400
Hinges	No.	4	600	2,400
Nails (1 kg)	Kg	0.25	300	75
Glue	No.			120
Drawer & Cabinet Handles	No.	4	100	400
Polish & Paint	Litre			5,000
Total				26,545

Table 29: Office Table - Type 1

Cost Item	Unit of Measurement	Consumption	Unit Cost (PKR)	Total Cost (PKR)
"Laminated Chipboard - 3/4 Inch (6 sutar) (8*4 ft)"	No.	3	5,000	15,000
Self Adhesive Chrome Strip (5 meter)	Meter	5	50	250
Nails (0.75 kg)	KG	0.2	300	60
Glue	PKR			100
Total				15,410

Table 30: Office Table - Type 2

Cost Item	Unit of Measurement	Consumption	Unit Cost (PKR)	Total Cost (PKR)
"Laminated Chipboard - 3/4 Inch (6 sutar) (8*4 ft)"	No.	2	5,000	10,000
Self Adhesive Chrome Strip (5 meter)	Meter	5	50	250
Nails	KG	0.15	300	45
Glue	PKR			120
Total				10,415

Table 31: Cabinet 39 W x 17 D x 77 H (Inches)

Cost Item	Unit of Measurement	Consumption	Unit Cost (PKR)	Total Cost (PKR)
"Laminated Chipboard - 1/4 Inch (6 sutar) (8*4 ft)"	No.	3	5,000	15,000
Door Handle	No.	2	100	200
Cabinet Hinges	No.	6	600	3,600
Self Adhesive Chrome Strip (4 meter)	Meter	4	50	200
Locks	No.	2	100	200
Glue	KG			100
Nails (1 kg)	PKR	0.15	300	45
Total				19,345

Table 32: Cabinet 39 W x 17 D x 47 H (Inches)

Cost Item	Unit of Measurement	Consumption	Unit Cost (PKR)	Total Cost (PKR)
"Laminated Chipboard - 1/4 Inch (6 sutar) (8*4 ft)"	No.	2	5,000	10,000

Door Handle	No.	2	100	200
Cabinet Hinges	No.	4	600	2,400
Self Adhesive Chrome Strip (3 meter)	Meter	3	50	150
Glue	No.			100
Nails (1 kg)	KG	0.1	300	30
Total				12,880

Table 33: Racks

Cost Item	Unit of Measurement	Consumption	Unit Cost (PKR)	Total Cost (PKR)
"Laminated Chipboard - 1/4 Inch (2 sutar) (8*4 ft)"	No.	1.5	2,000	3,000
Nails (0.5 kg)	Kg	0.1	300	30
Glue	No.			30
Total				3,060

Table 34: Executive Chair

Cost Item	Unit of Measurement	No. Required per Chair	Unit Cost (PKR)	Total Cost (PKR)
Seat	No.	1	12,000	12,000
Side Arms (Pair)	No.	1	2,500	2,500
Base with Wheels	No.	1	3,500	3,500
Hydraulic Jack	No.	1	2,000	2,000
Total				20,000

Table 35: Mid-Back Chair

Cost Item	Unit of Measurement	No. Required per Chair	Unit Cost (PKR)	Total Cost (PKR)
Seat	No.	1	7,000	7,000
Side Arms (Pair)	No.	1	1,500	1,500

Base with Wheels	No.	1	2,000	2,000
Hydraulic Jack	No.	1	1,500	1,500
Total				12,000

Table 36: Mesh Back Chair

Cost Item	Unit of Measurement	No. Required per Chair	Unit Cost (PKR)	Total Cost (PKR)
Back Support	No.	1	5,000	5,000
Seat	No.	1	2,500	2,500
Head Rest	No.	1	1,000	1,000
Side Arms (Pair)	No.	1	2,000	2,000
Base with Wheels	No.	1	2,000	2,000
Hydraulic Jack	No.	1	1,500	1,500
Total				14,000

Table 37: Task Chair

Cost Item	Unit of Measurement	No. Required per Chair	Unit Cost (PKR)	Total Cost (PKR)
Seat	No.	1	4,000	4,000
Side Arms (Pair)	No.	1	1,200	1,200
Base with Wheels	No.	1	1,000	1,000
Hydraulic Jack	No.	1	1,500	1,500
Total				7,700

Table 38: Direct Labor

Post	No. of personnel	Monthly Salary (PKR)	Annual Salary (PKR)
Production Supervisor	1	60,000	720,000
Labor Skilled	8	35,000	3,360,000
Labor- Unskilled	4	25,000	1,200,000

Designer and CNC Machine Operator	1	45,000	540,000
Stores Incharge	1	30,000	360,000
Total			6,180,000

Table 39: Machinery Maintenance Cost

Cost Item	Cost of Machinery (PKR)	Machinery Maintenance Rate	Total Cost (PKR)
Machinery Maintenance Cost	4,337,800	5%	216,890
Total Cost (PKR)			216,890

9.6 Fixed Cost Estimate

Table 40 shows the estimated fixed cost of the project.

Table 40: Fixed Cost Estimate

Description of Costs	Amount (PKR)
Management Staff (Table 41)	5,640,000
Administration benefits expense	354,600
Building rental expense	6,240,000
Electricity	772,642
Depreciation expense	1,183,965
Amortization of pre-operating costs	91,273
Total Fixed Cost	14,282,480

Table 41: Fixed Cost Assumption-Management Staff Salary

Post	No of personnel	Monthly Salary (PKR)	Annual Salary (PKR)
Showroom			
Showroom Manager	1	60,000	720,000
Cashier	1	40,000	480,000
Salesmen	2	30,000	720,000
Office Boy	1	25,000	300,000

Security Guard	2	25,000	600,000
Manufacturing Unit			
Admin and Accounts Officer	1	50,000	600,000
Procurement Officer	1	40,000	480,000
Sales and Marketing Officer	1	45,000	540,000
Office Boy	1	25,000	300,000
Security Guard (s)	3	25,000	900,000
Total (PKR)	14		5,640,000

9.7 Financial Feasibility Analysis

The financial feasibility analysis provides the information regarding projected Internal Rate of Return (IRR), Net Present Value (NPV) and Payback period of the proposed business, which is shown in Table 42.

Table 42: Financial Feasibility Analysis

Description	Project
IRR	68%
NPV (PKR)	47,899,276
Payback Period (years)	2.23
Projection Years	10
Discount rate used for NPV	25%

9.8 Financial Feasibility Analysis with 50% Debt

The financial feasibility analysis provides the information regarding projected IRR, NPV and payback period of the proposed business on the basis of Debt: Equity Model (50:50), which is shown in Table 43.

Table 43: Financial Feasibility Analysis with 50% Debt

Description	Project
IRR	66%
NPV (PKR)	57,647,946
Payback Period (years)	2.29
Projection Years	10
Discount rate used for NPV	22%

9.9 Human Resource Requirement

For the 1st year of operations, the manufacturing of office furniture shall require the workforce at a salary cost shown in Table 44.

Table 44: Human Resource Requirement

Post	No of Personnel	Monthly Salary (PKR)	Annual Salary (PKR)
Showroom			
Manager	1	60,000	720,000
Cashier	1	40,000	480,000
Salesman	2	30000	720,000
Office Boy	1	25,000	300,000
Security Guard	2	25,000	600,000
Manufacturing Unit			
Production Supervisor	1	60,000	720,000
Admin and Accounts Officer	1	50,000	600,000
Procurement Officer	1	40,000	480,000
Sales and Marketing Officer	1	45,000	540,000
Labor - Skilled	8	35,000	3,360,000
Labor- Unskilled	4	25,000	1,200,000
Designer and CNC Machine Operator	1	45,000	540,000
Store Incharges	1	30,000	360,000
Office Boy	1	25,000	300,000
Security Guard (s)	3	25,000	900,000
Total (PKR)	29		11,820,000

10 CONTACT DETAILS

Contact details of some suppliers of the relevant machinery and equipment are provided in Table 45.

Table 45: Contact Details

Supplier Name	Origin	Nature of Supplier	Contact Number	Email/Website
Wei Hai Rico Machinery Co., Ltd.,	China	Machinery and Equipment		http://www.ricomachinery.com
Shanghai Fuma Woodworking Machinery & Equipment Co., Ltd	China	Machinery and Equipment		http://www.shfuma.com.cn
Jinan Blue Elephant Cnc Machinery Co., Ltd.	China	Machinery and Equipment		http://www.elephant-cnc.com
Shanghai Honggang Machinery Manufacturing Co., Ltd.	China	Machinery and Equipment		http://www.have-machine.com
Qingdao Hezhi Machinery Co., Ltd.	China	Machinery and Equipment		http://www.woodworkingchina.com
Ejaz hussain Timber Merchant	Pakistan	Raw material	0333 4240504	
Multani Timber Merchant	Pakistan	Raw material	0305 5641904	
Awan Timber Merchant	Pakistan	Raw material	0321 4343122	
ZRK MDF & Particle Board	Pakistan	Raw material	+92 (91) 111 975 975	https://zrkgroup.com/



11 USEFUL WEB LINKS

Table 46: Useful Web Links

Name of the Organization	Email/Website
Small and Medium Enterprises Development Authority (SMEDA)	www.smeda.org.pk
National Business Development Program	www.nbdp.org.pk
Government of Pakistan	www.pakistan.gov.pk
Federal Ministry of Industries & Production	www.moip.gov.pk/
State Bank of Pakistan	www.sbp.org.pk
Trade Development Authority of Pakistan	www.tdap.gov.pk
Punjab Small Industries Corporation (PSIC)	www.psic.org.pk
Sindh Small Industries Corporation (SSIC)	www.ssic.gos.pk
Small Industries Development Board KPK	www.small_industries_de.kp.gov.pk
Industries and Commerce Department Balochistan	www.dgicd.gob.pk/
Federal Board of Revenue	www.fbr.gov.pk
Government of Punjab	www.punjab.gov.pk
Government of Sindh	www.sindh.gov.pk
Government of Khyber Pakhtunkhwa	www.kp.gov.pk
Government of Balochistan	www.balochistan.gov.pk
Government of Azad Jammu and Kashmir	www.ajk.gov.pk
Government of Gilgit Baltistan	www.gilgitbaltistan.gov.pk
Punjab Board of Investment and Trade	www.pbit.gop.pk/
Small Industries Development Board Khyber Pakhtunkhwa	www.small_industries_de.kp.gov.pk
All Pakistan Timber Traders Association	www.aptta.pk
All Pakistan Furniture Makers Association	https://buildingresources.pk/institutions-associations/apfma/
Pakistan Furniture Council (PFC)	http://www.pfc.org.pk/

12 ANNEXURES

12.1 Income Statement

Calculations										SMEDA
Income Statement										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue - Executive Tables	37,840,000	47,704,800	56,856,293	68,064,328	80,396,979	95,012,410	112,309,157	131,363,446	146,590,504	163,008,641
Revenue- Office Tables	12,341,000	15,492,384	18,556,816	22,113,344	26,233,758	30,999,754	36,504,258	42,852,909	47,752,967	53,101,300
Revenue-Cabinets	6,784,000	8,523,480	10,200,251	12,164,952	14,420,386	17,009,738	20,113,549	23,518,430	26,253,027	29,193,366
Revenue - Racks	1,725,000	2,162,840	2,584,377	3,086,958	3,662,053	4,327,247	5,086,054	5,981,578	6,663,205	7,409,484
Revenue- Office Chairs	25,863,000	32,444,824	38,807,697	46,307,119	54,909,394	64,861,102	76,434,512	89,639,573	99,962,099	111,157,854
Total Revenue	84,553,000	106,328,328	127,005,434	151,736,700	179,622,570	212,210,252	250,447,530	293,355,936	327,221,802	363,870,644
Cost of sales										
Material Cost- Executive Tables	24,654,480	30,830,284	36,447,245	43,278,924	50,706,934	59,439,983	69,692,210	80,856,386	89,498,624	98,716,983
Material Cost- Office Tables	7,411,775	9,229,132	10,965,206	12,960,999	15,251,595	17,876,552	20,880,445	24,313,488	26,874,354	29,642,413
Material Cost- Cabinets	5,104,780	5,974,304	6,675,652	7,446,448	8,283,776	9,182,269	10,232,977	11,301,227	11,946,936	12,609,598
Material Cost- Racks	1,055,700	1,312,945	1,556,140	1,843,717	2,169,497	2,542,827	2,964,536	3,458,297	3,821,205	4,214,790
Material Cost- Office Chairs	18,026,800	22,430,277	26,612,592	31,497,808	37,048,729	43,408,489	50,736,271	59,025,661	65,287,360	72,011,958
Material Transportation Cost	1,125,071	1,539,279	2,001,488	2,604,073	3,358,744	4,324,739	5,564,545	7,108,903	8,650,554	10,496,896
Direct Electricity	683,751	799,248	928,726	1,073,674	1,235,727	1,416,684	1,618,520	1,843,404	1,989,033	2,146,167
Direct Labor	6,180,000	6,779,460	7,437,068	8,158,463	8,949,834	9,817,968	10,770,311	11,815,031	12,961,089	14,218,315
Fuel Cost-Generator	136,750	176,314	225,979	288,157	365,809	462,573	582,910	732,283	871,518	1,037,225
Machinery Maintenance - Cost	216,890	239,230	263,870	291,049	321,027	354,093	390,564	430,792	475,164	524,106
Total Cost of Sales	64,595,997	79,310,474	93,113,967	109,443,312	127,691,672	148,826,177	173,433,288	200,885,473	222,375,838	245,618,451
Gross Profit	19,957,003	27,017,854	33,891,467	42,293,388	51,930,898	63,384,074	77,014,242	92,470,463	104,845,964	118,252,193
General administration & selling expenses										
Management Staff	5,640,000	6,187,080	6,787,227	7,445,588	8,167,810	8,960,087	9,829,216	10,782,650	11,828,567	12,975,938
Administration benefits expense	354,600	388,996	426,729	468,122	513,529	563,342	617,986	677,930	743,690	815,828
Building rental expense	6,240,000	6,864,000	7,550,400	8,305,440	9,135,984	10,049,582	11,054,541	12,159,995	13,375,994	14,713,594
Indirect Electricity	772,642	833,681	899,542	970,605	1,047,283	1,130,019	1,219,290	1,315,614	1,419,547	1,531,692
Communications expense (phone, fax, mail, internet, etc.)	282,000	309,354	339,361	372,279	408,390	448,004	491,461	539,132	591,428	648,797
Office vehicles running expense	282,000	309,354	339,361	372,279	408,390	448,004	491,461	539,132	591,428	648,797
Office expenses (stationery, entertainment, janitorial services, et	169,200	185,612	203,617	223,368	245,034	268,803	294,876	323,479	354,857	389,278
Promotional expense	422,765	531,642	635,027	758,684	898,113	1,061,051	1,252,238	1,466,780	1,636,109	1,819,353
Depreciation expense	1,183,965	1,183,965	1,183,965	1,183,965	1,183,965	1,222,340	909,075	2,071,164	2,071,164	2,071,164
Amortization of pre-operating costs	91,273	91,273	91,273	91,273	91,273	-	-	-	-	-
Subtotal	15,438,446	16,884,957	18,456,502	20,191,603	22,099,773	24,151,233	26,160,143	29,875,877	32,612,785	35,614,440
Operating Income	4,518,557	10,132,897	15,434,965	22,101,785	29,831,125	39,232,841	50,854,098	62,594,586	72,233,179	82,637,753
Other income (interest on cash)	-	-	-	-	-	-	-	-	-	-
Other income 2	56,886	68,529	82,066	97,775	115,975	137,024	161,334	189,370	210,579	234,164
Gain / (loss) on sale of machinery & equipment	-	-	-	-	-	-	1,084,450	-	-	-
Gain / (loss) on sale of office equipment	-	-	-	-	-	-	332,125	-	-	-
Gain / (loss) on sale of office vehicles	-	-	-	-	-	-	31,500	-	-	-
Earnings Before Interest & Taxes	4,575,443	10,201,426	15,517,030	22,199,560	29,947,100	39,369,866	52,463,507	62,783,956	72,443,759	82,871,918
Interest expense on long term debt (Project Loan)	-	-	-	-	-	-	-	-	-	-
Interest expense on long term det. Seat	-	-	-	-	-	-	-	-	-	-
Subtotal	-	-	-	-	-	-	-	-	-	-
Earnings Before Tax	4,575,443	10,201,426	15,517,030	22,199,560	29,947,100	39,369,866	52,463,507	62,783,956	72,443,759	82,871,918
Tax	1,056,913	1,895,356	3,312,183	5,149,879	7,280,453	10,105,960	14,095,640	17,449,786	20,589,222	24,175,171
NET PROFIT/(LOSS) AFTER TAX	3,518,531	8,306,069	12,204,847	17,049,681	22,666,648	29,263,906	38,367,867	45,334,170	51,854,537	58,696,746

12.2 Balance Sheet

Calculations											SMEDA
Balance Sheet											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Assets											
<i>Current assets</i>											
Cash & Bank	1,000,000	2,713,546	5,824,539	8,789,569	11,824,177	14,298,452	17,109,559	39,124,518	80,519,235	127,501,667	205,861,574
Accounts receivable	-	-	-	-	-	-	-	-	-	-	-
Raw material inventory	2,343,897	3,206,832	4,169,767	5,425,152	6,997,383	9,009,873	11,592,802	14,810,214	18,021,987	21,868,534	-
Equipment spare part inventory	18,074	21,850	26,414	31,931	38,601	46,665	56,412	68,196	82,442	99,663	-
Finished Goods inventory	-	2,968,724	4,020,410	5,206,311	6,749,631	8,686,181	11,166,605	14,353,235	18,337,553	22,390,097	27,277,519
Pre-paid building rent	520,000	572,000	629,200	692,120	761,332	837,465	921,212	1,013,333	1,114,666	1,226,133	-
Total Current Assets	3,881,971	9,482,952	14,670,329	20,145,083	26,371,124	32,878,636	40,846,590	69,369,496	118,075,883	173,086,094	233,139,093
<i>Fixed assets</i>											
Land	-	-	-	-	-	-	-	-	-	-	-
Building/Infrastructure	1,781,702	1,603,532	1,425,362	1,247,191	1,069,021	890,851	712,681	534,511	356,340	178,170	0
Machinery & equipment	4,337,800	3,687,130	3,036,460	2,385,790	1,735,120	1,084,450	433,780	8,240,307	7,004,261	5,768,215	4,532,169
Tools and Equipment	330,000	264,000	198,000	132,000	66,000	521,875	417,500	313,125	208,750	104,375	825,315
Furniture & fixtures	473,000	402,050	331,100	260,150	189,200	118,250	47,300	898,535	763,755	628,975	494,194
Office vehicles	126,000	107,100	88,200	69,300	50,400	31,500	12,600	261,596	222,357	183,117	143,878
Office equipment	1,328,500	1,129,225	929,950	730,675	531,400	332,125	132,850	2,523,687	2,145,134	1,766,581	1,388,028
Advance Against Building Rent	1,560,000	1,560,000	1,560,000	1,560,000	1,560,000	1,560,000	1,560,000	1,560,000	1,560,000	1,560,000	1,560,000
Total Fixed Assets	9,937,002	8,753,037	7,569,072	6,385,106	5,201,141	4,539,051	3,316,711	14,331,761	12,260,597	10,189,433	8,943,583
<i>Intangible assets</i>											
Pre-operation costs	456,366	365,093	273,820	182,546	91,273	-	-	-	-	-	-
Legal, licensing, & training costs	-	-	-	-	-	-	-	-	-	-	-
Total Intangible Assets	456,366	365,093	273,820	182,546	91,273	-	-	-	-	-	-
TOTAL ASSETS	14,275,340	18,601,082	22,513,221	26,712,736	31,663,539	37,417,687	44,163,301	83,701,257	130,336,480	183,275,527	242,082,677
Liabilities & Shareholders' Equity											
<i>Current liabilities</i>											
Accounts payable	-	2,566,477	3,205,214	3,818,640	4,553,980	5,391,914	6,380,792	7,550,880	8,851,933	9,936,443	10,046,846
Total Current Liabilities	-	2,566,477	3,205,214	3,818,640	4,553,980	5,391,914	6,380,792	7,550,880	8,851,933	9,936,443	10,046,846
<i>Other liabilities</i>											
Total Long Term Liabilities	-	-	-	-	-	-	-	-	-	-	-
<i>Shareholders' equity</i>											
Paid-up capital	14,275,340	14,275,340	14,275,340	14,275,340	14,275,340	14,275,340	14,275,340	14,275,340	14,275,340	14,275,340	14,275,340
Retained earnings	-	1,759,265	5,032,667	8,618,757	12,834,219	17,750,433	23,507,170	61,875,037	107,209,207	159,063,744	217,760,491
Total Equity	14,275,340	16,034,605	19,308,007	22,894,097	27,109,559	32,025,773	37,782,509	76,150,377	121,484,547	173,339,084	232,035,830
TOTAL CAPITAL AND LIABILITIES	14,275,340	18,601,082	22,513,221	26,712,736	31,663,539	37,417,687	44,163,301	83,701,257	130,336,480	183,275,527	242,082,677

12.3 Cash Flow Statement

Calculations											SMEDA
Cash Flow Statement											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<i>Operating activities</i>											
Net profit		3,518,531	8,306,069	12,204,847	17,049,681	22,666,648	29,263,906	38,367,867	45,334,170	51,854,537	58,696,746
Add: depreciation expense		1,183,965	1,183,965	1,183,965	1,183,965	1,183,965	1,222,340	909,075	2,071,164	2,071,164	2,071,164
amortization of pre-operating costs		91,273	91,273	91,273	91,273	91,273	-	-	-	-	-
Finished goods inventory		(2,968,724)	(1,051,685)	(1,185,901)	(1,543,320)	(1,936,550)	(2,480,424)	(3,186,630)	(3,984,318)	(4,052,543)	(4,887,423)
Equipment inventory	(18,074)	(3,775)	(4,564)	(5,518)	(6,670)	(8,063)	(9,748)	(11,784)	(14,245)	(17,221)	99,663
Raw Material Inventory	(2,343,897)	(862,935)	(962,935)	(1,255,385)	(1,572,231)	(2,012,491)	(2,582,929)	(3,217,412)	(3,211,773)	(3,846,548)	21,868,534
Pre-paid building rent	(520,000)	(52,000)	(57,200)	(62,920)	(69,212)	(76,133)	(83,747)	(92,121)	(101,333)	(111,467)	1,226,133
Accounts payable		2,566,477	638,737	613,426	735,340	837,934	988,878	1,170,088	1,301,053	1,084,510	110,404
Other liabilities		-	-	-	-	-	-	-	-	-	-
Cash provided by operations	(2,881,971)	3,472,812	8,143,660	11,583,787	15,868,827	20,746,583	26,318,277	33,939,084	41,394,718	46,982,432	79,185,221
<i>Financing activities</i>											
Issuance of shares	14,275,340	-	-	-	-	-	-	-	-	-	-
Purchase of (treasury) shares											
Cash provided by / (used for) financing activit	14,275,340	-	-	-	-	-	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(10,393,368)	-	-	-	-	(521,875)	-	(11,924,125)	-	-	(825,315)
Acquisitions											
Cash (used for) / provided by investing activit	(10,393,368)	-	-	-	-	(521,875)	-	(11,924,125)	-	-	(825,315)
NET CASH	1,000,000	3,472,812	8,143,660	11,583,787	15,868,827	20,224,708	26,318,277	22,014,959	41,394,718	46,982,432	78,359,907

13 KEY ASSUMPTIONS

13.1 Operating Cost Assumptions

Table 47: Operating Cost Assumptions

Descriptions	Details
Building rent growth rate	10%
Furniture and fixture depreciation	15%
Vehicle depreciation	15%
Office equipment depreciation	15%
Inflation growth rate	10.3%
Wage growth rate	10%
Electricity price growth rate	7.9%
Office equipment price growth rate	10%
Office vehicle price growth rate	11%

13.2 Revenue Assumptions

Table 48: Revenue Assumptions

Description	Details
Sale price growth rate	11.2%
Initial year capacity utilization	60%
Capacity growth rate	5%
Maximum capacity utilization	95%

13.3 Financial Assumptions

Table 49: Financial Assumptions

Description	Details
Project life (Years)	10
Debt: Equity	0:100
Discount Rate	25%
Discount Rate (50% Debt: 50% Equity)	22%

13.4 Debt-Related Assumption

Figure 37: Debt-Related Assumption

Description of Cost	Details
Project Life (Years)	10
Debt: Equity	50:50
Discount Rate	22%
Debt Tenure	5 years
Grace Period	1 Year
Interest Rate (KIBOR+3%)	19%

13.5 Cash Flow Assumptions

Table 50: Cash Flow Assumptions

Description	Day(s)
Accounts receivable cycle	-
Accounts payable cycle	15

Small and Medium Enterprises Development Authority

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