## ABSTRACT

A detailed comparison of projects between an already existing race car manufacturing industry Formula Ford and X1 race industry is put forward. The Anatomy of these race cars is that they are open wheel race cars with only 4 wheels and bars on it. It was conceptualized by Formula Ford. It is a motorsport which contains a single seater and open wheel race car which is in some form in various countries around the globe. It is an beginner-level single seater race car, from which the best of drivers aspire to one day go to formula 1 by winning races across the globe. Our industry aims at two main streams : 1. Manufacturing such type of single seater race cars for training academies so as to create awareness of motorsports in India where weekend racers market is majorly captured keeping our market survey and cost-benefit analysis appropriate and 2. Manufacturing ergonomic packages which includes seats, seat inserts, pedal box assembly, steering wheel, etc. and selling it with 25% profit to other leagues who have their own rules on powertrain and drivetrain departments and therefore will have their own purchases based on performance. Having all of this said finally we try to compare the marketing aims, strategies, surveys, finance, technical inclusions, unique selling point and a cost-benefit analysis on the industries showing a break-even point too.

# Business Model ( X1 Racing )

## Target Market

### Vehicle Supplier For Training Academies

Four Training Academies in Four Major Cities

Twelve vehicles per academy replaced every year

According to design changes

**Forty Eight Vehicles per year**

### Ergonomic Package Supplier For Racing Leagues

Supply of ergonomic package to Five major racing leagues

New Ergonomic package for vehicle replaced every month

Total of 600 packages to be supplied in a year

**Safety Stock - 8% of total packages to be supplied**
**Batch Size – 60 Vehicles every year**

## USP

We will be replacing our ergonomic packages by selling it to the leagues every one month focusing mainly on technical R&D aiming to boost the performance of the car and the driver so that every weekend racer would be satisfied at the end and feel enlightened targeting our main agend.

# Our Design

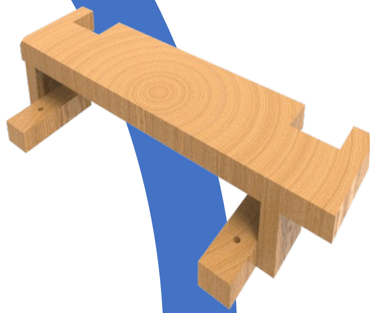
**CURRENT ERGONOMIC FEATURES**

## Pedal Assembly

1. Adjustable assembly (fore /aft = 50 mm)
2. Allow tuning to suit a driver's style
3. Optimum height of pedal to achieve mechanical advantage
4. Pedal inclined at 85° to vertical to transmit force with less effort to reduce driver knee strain
5. Pedal Padding to provide grippy brake and throttle pedal.

## Steering Wheel

1. Optimum radius to provide required torque while steering.
2. Contours according to driver's hand posture
3. Sufficient clearance to turn the wheel without hitting their legs with wheel on their hand.
4. Integrated gear shifter indicators for assistance
5. Buttons for electropneumatic shifting of gears

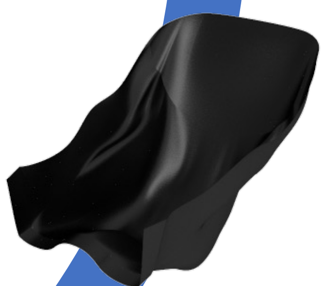


## Foot Rest

1. To minimise driver's knee strain during throttling and braking
2. To support driver's knee region

## Pedal Shifter

1. Fast and Easy Shifting
2. Improved Lap timing
3. Reduced driver effort while cornering



## Seat

1. Accommodates breadth of each driver of the vehicle
2. Reclined Seat Angle for comfortable driving position
3. Thigh Support
4. Arm Support
5. Optimum seat height to ensure the driver has maximum vision of the road.

## Dashboard

1. Optimum height to prevent obstruction in driver vision
2. Assistance through display for monitoring rpm, coolant Temperature sensor, TPS position, voltage

## Seat Insert

1. Fits to the posture of the drivers
2. To provide maximum angle of view

# Decision Matrix

## Relative Importance

| Criteria | Score |
|---|---|
| Cost | 9 |
| Time | 8 |
| Wastage | 5 |
| Weight | 5 |
| Adjustability | 8 |
| Reliability | 6 |

## Consistency Check

| Lambda Max | 1.00250737 |
|---|---|
| Consistency Index | -0.99949853 |
| Consistency Ratio | -0.8060472 |

System Consistent

## Weights

| Criteria | Weights |
|---|---|
| Cost | 0.219 |
| Time | 0.195 |
| Wastage | 0.122 |
| Weight | 0.122 |
| Adjustability | 0.195 |
| Reliabilty | 0.146 |

## Pair Wise Comparison Matrix

| Criteria | Cost | Time | Wastage | Weight | Adjustability | Reliability |
|---|---|---|---|---|---|---|
| Cost | 1.00 | 1.13 | 1.80 | 1.80 | 1.13 | 1.50 |
| Time | 0.89 | 1.00 | 1.60 | 1.60 | 1.00 | 1.34 |
| Wastage | 0.56 | 0.63 | 1.00 | 1.00 | 0.63 | 0.84 |
| Weight | 0.56 | 0.63 | 1.00 | 1.00 | 0.63 | 0.84 |
| Adjustability | 0.89 | 1.00 | 1.60 | 1.60 | 1.00 | 1.34 |
| Reliability | 0.67 | 0.75 | 1.20 | 1.20 | 0.75 | 1.00 |
| Sum | 4.57 | 5.14 | 8.20 | 8.20 | 5.14 | 6.86 |

## Characteristics

| Criteria | Alternative 1 | Alternative 2 | Current |
|---|---|---|---|
| Cost | 2 | 3 | 1 |
| Time | 3 | 2 | 1 |
| Wastage | 3 | 1 | 2 |
| Weight | 1 | 2 | 3 |
| Adjustability | 2 | 3 | 1 |
| Reliability | 1 | 3 | 2 |

## Normalised Comparison Matrix

| Criteria | Cost | Time | Wastage | Weight | Adjustability | Reliability | Average |
|---|---|---|---|---|---|---|---|
| Cost | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 |
| Time | 0.19 | 0.19 | 0.20 | 0.20 | 0.19 | 0.20 | 0.19 |
| Wastage | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| Weight | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| Adjustability | 0.19 | 0.19 | 0.20 | 0.20 | 0.19 | 0.20 | 0.19 |
| Reliability | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |

## Decision Matrix

| Criteria | Weight | Current | Alternative 1 | Alternative 2 |
|---|---|---|---|---|
| Cost | 0.219 | 1 | 0.5 | 0.33 |
| Time | 0.195 | 1 | 0.33 | 0.5 |
| Wastage | 0.122 | 0.50 | 0.33 | 1 |
| Weight | 0.122 | 0.33 | 1 | 0.5 |
| Adjustability | 0.195 | 0.33 | 0.67 | 1 |
| Reliability | 0.146 | 0.67 | 0.33 | 1 |
| Total | - | 0.68 | 0.52 | 0.70 |

# Percentile Proof

| Measurements (All values in cm) | Male | Female |
|---|---|---|
| | | |
| Stature | 167.3 | 157.7 |
| Eye Height | 156.6 | 147.1 |
| Head Height | 146.5 | 137.1 |
| Shoulder Height | 138.0 | 129.4 |
| Crotch Height | 73.3 | 68.9 |
| Knee Height | 49 | 45.2 |
| Bideltoid length | 45.6 | 40.9 |
| Waist Width | | |
| Head Circumference | 55.3 | 54.8 |
| Chest Circumference | 89.2 | 85.8 |
| Waist Circumference | 83.3 | 79.8 |

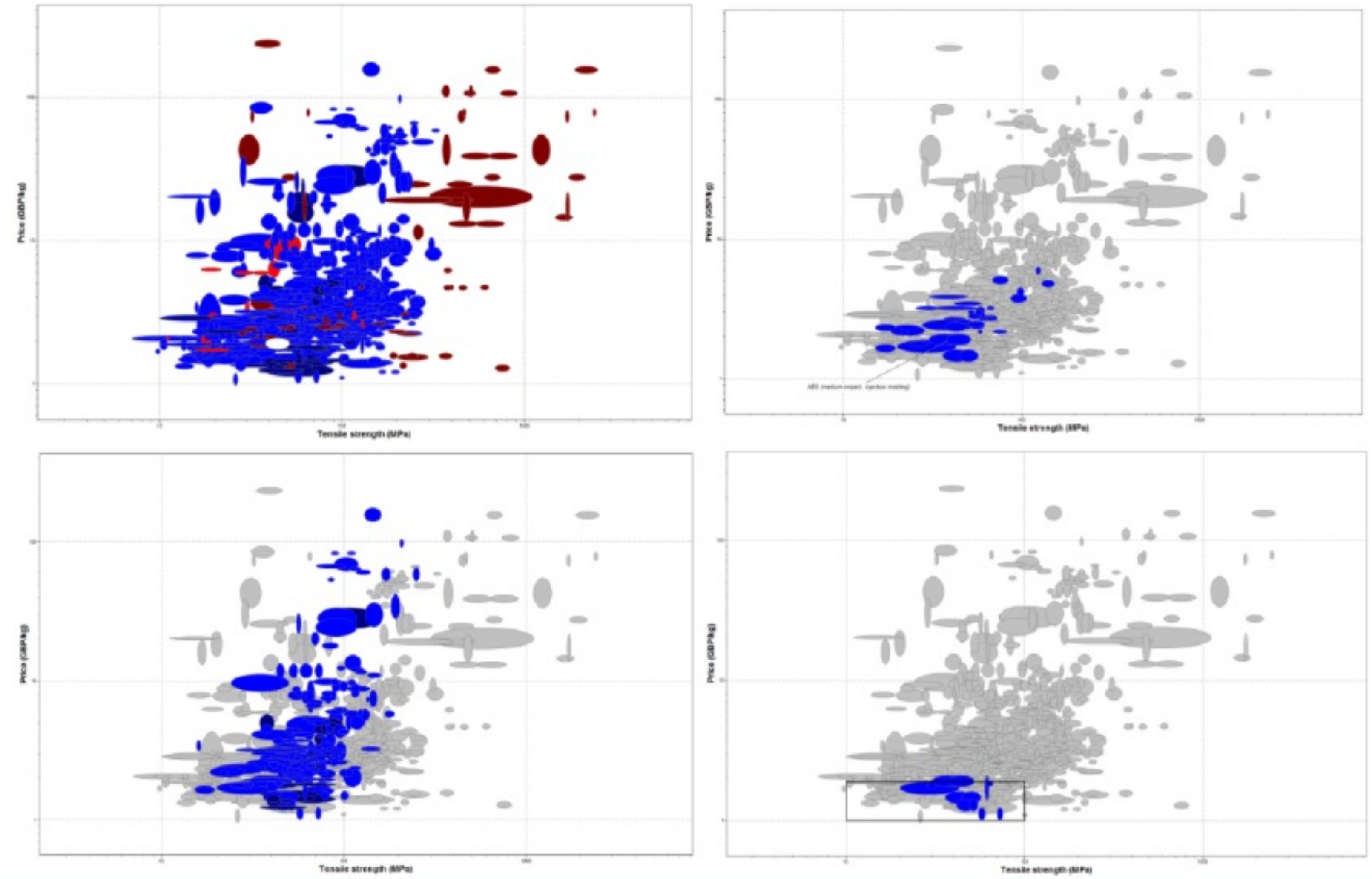
The population is split into three age groups namely 18-29, 30-44 and 45 and above depicting the young, middle aged and elderly people.

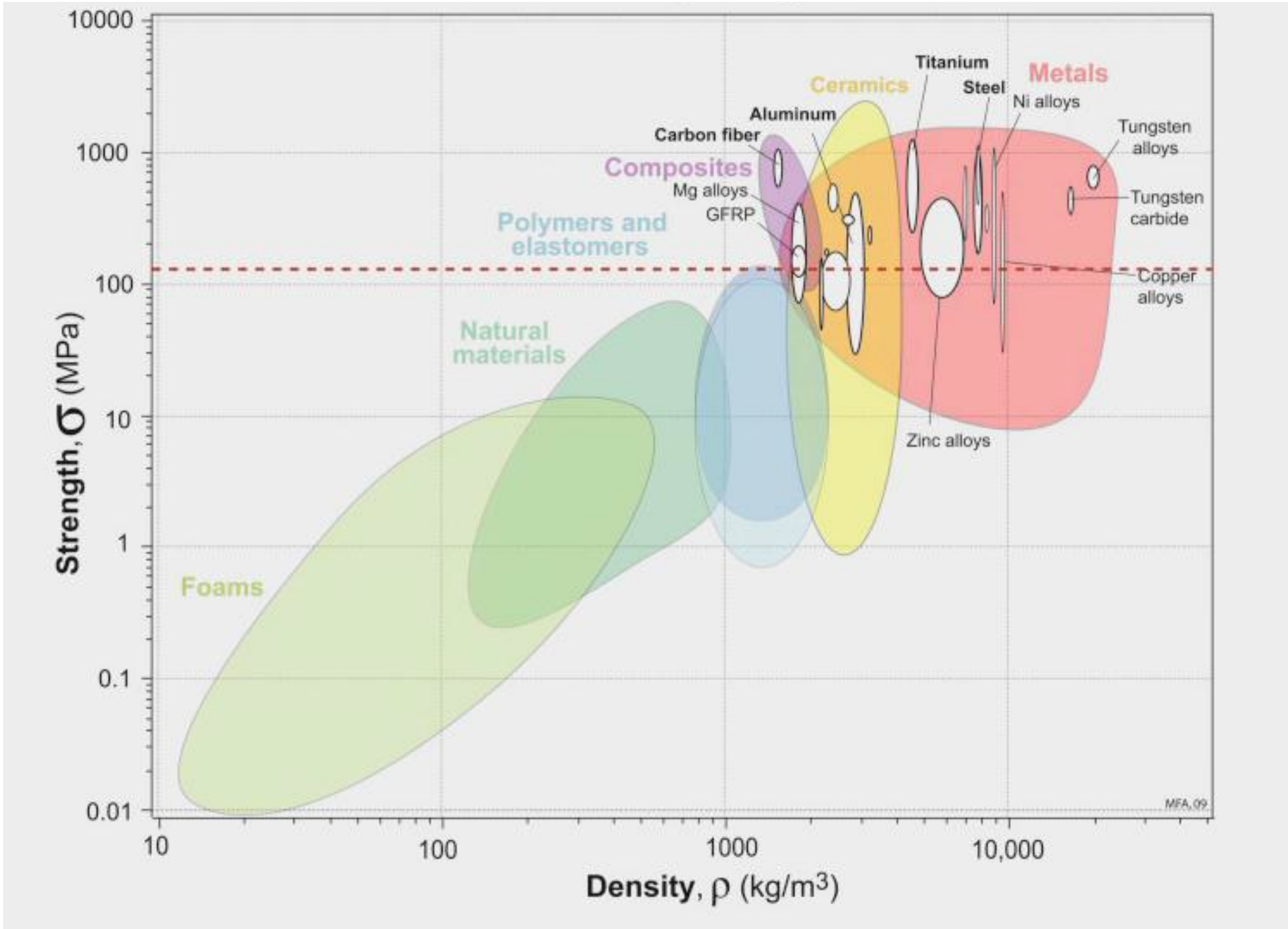
5 Regional groups; 3 Age groups; 2 Gender groups = 5 X 3 X 2 = 30

| | Current Design | Alternative Design |
|---|---|---|
| | | |
| Cockpit Width | 49.5 | 49.5 |
| Cockpit Length | 81 | 81 |
| Seat Width (Waist) | 43 | 42 |
| Seat Width (Shoulder) | | |

| S.No. | Maximum | Minimum |
|---|---|---|
| Height | 1.78 | 1.66 |
| Weight (kg) | 75 | 54 |
| Hand Reach (m) | 0.78 | 0.71 |
| Hip Height (m) | 32 | 0.34 |
| Erect Sitting Height(m) | 1.33 | 0.37 |
| Sitting Shoulder Height(m) | 1 | 0.93 |
| Sitting Shoulder Width (m) | 0.98 | 0.42 |
| Hip Width (m) | 0.39 | 0.31 |
| Shoulder Grip Length (m | 0.79 | 0.71 |
| Foot length bare (m) | 0.29 | 0.19 |
| Foot Width bare (m) | 0.13 | 0.09 |

# Material Selection





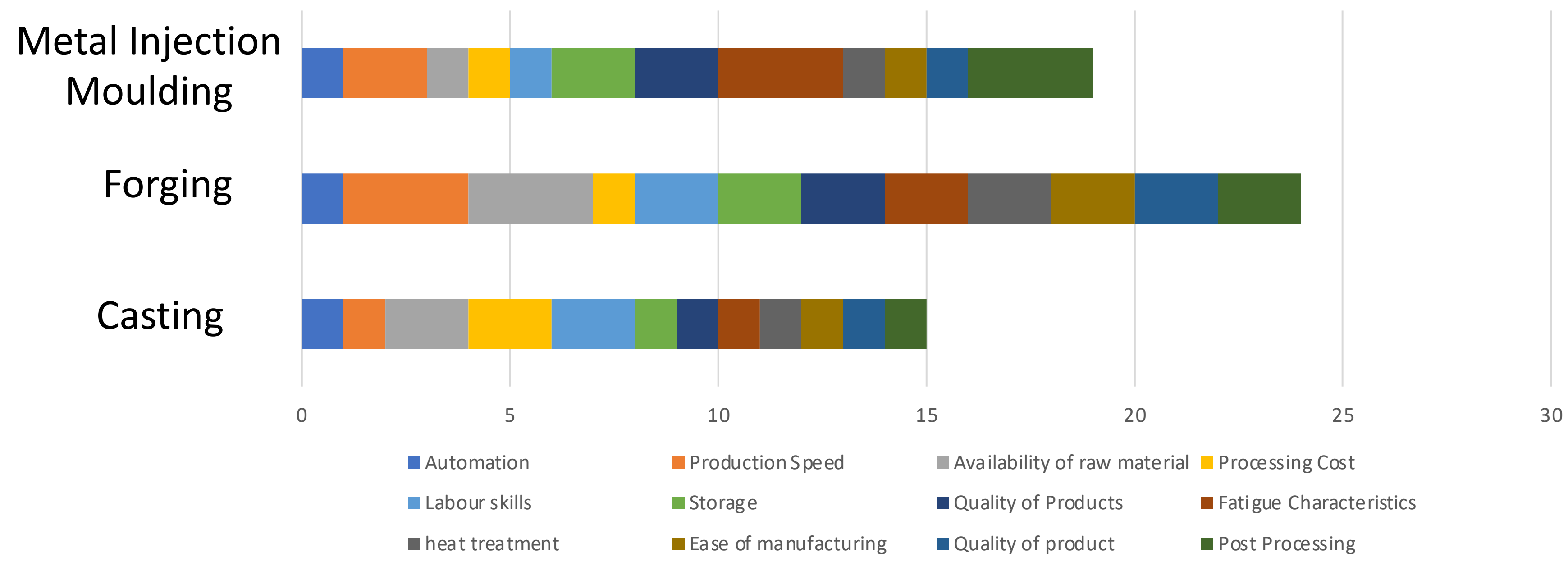

- Low cost - material and manufacture
- Easy to manufacture
- Durable - high tensile strength to support moving parts and repeated
- installation
- Waterproof
- Recyclable - recycle waste material back into production
- Density - low density for lightweight design, aiding fuel consumption

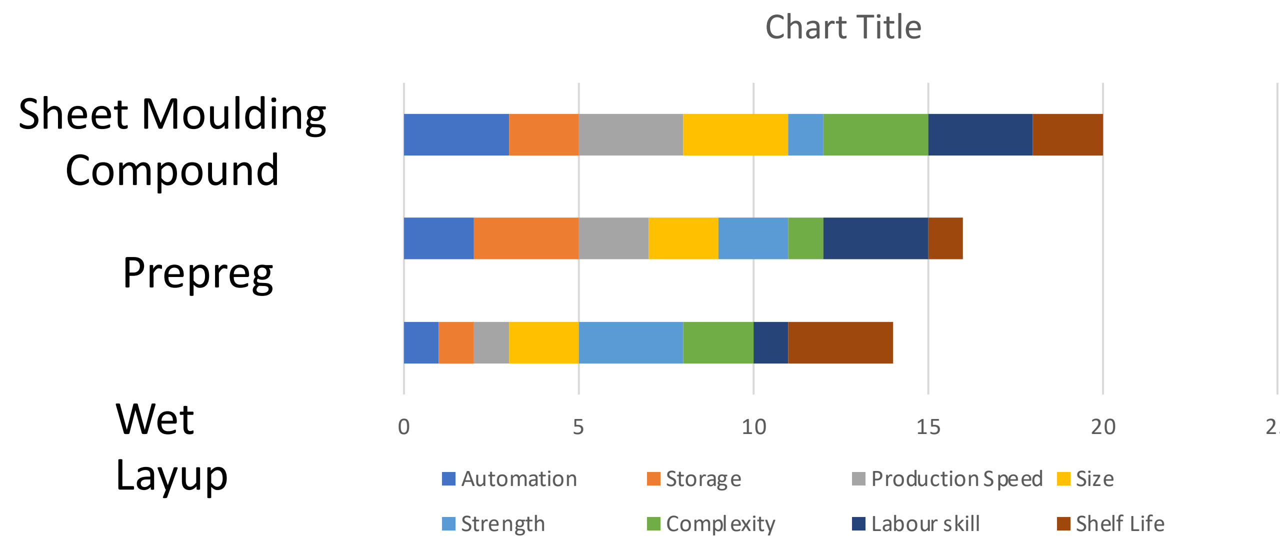
Box selection further narrowed down materials to a specific range Most common material was Acrylonitrile Butadiene Styrene (ABS) For plastic parts and Aluminium 7075 T6 for metal parts

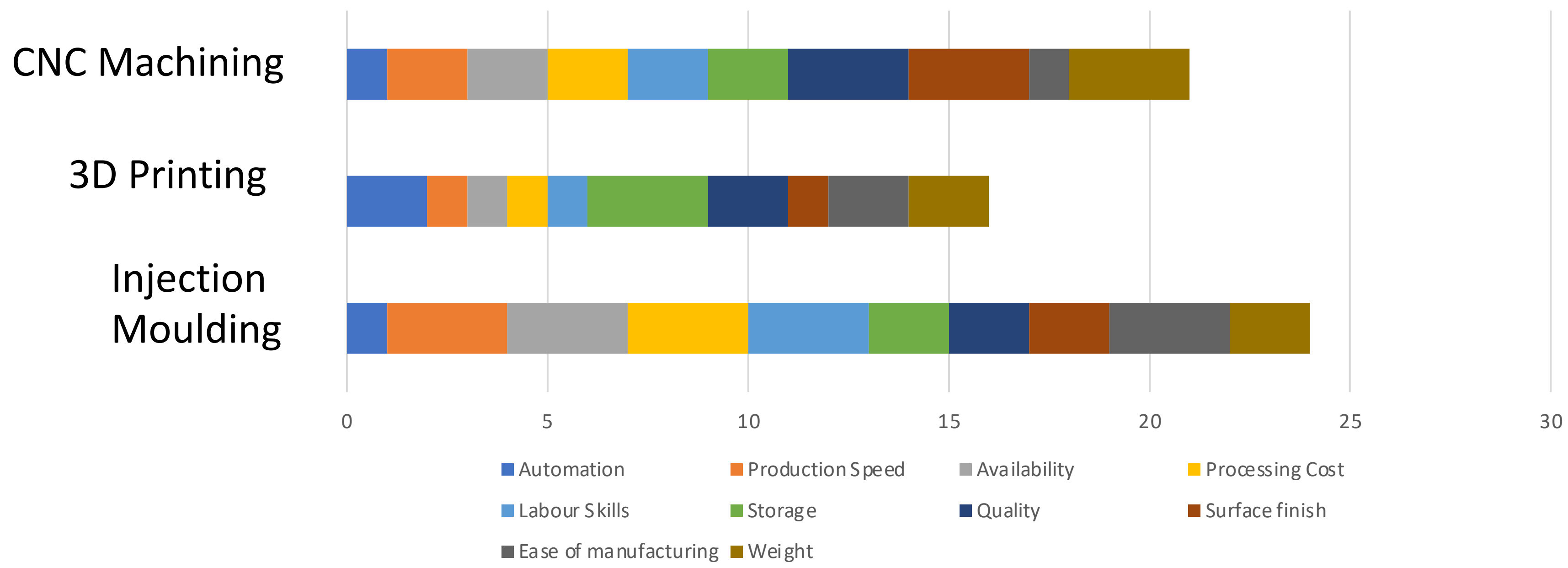
# Process Selection

| Factor | Casting | Forging | Metal Injection Moulding | Reason |
|---|---|---|---|---|
| **Automation** | 1 | 1 | 1 | All are equally automated. |
| **Production speed** | 1 | 3 | 2 | Production of forging is fastest |
| **.Availability of raw material** | 2 | 3 | 1 | In forging alloy can be used directly whereas in Casting Alloys metal has to be mixed |
| **Processing Cost** | 2 | 1 | 1 | The processing cost of forging is high because of short life of die as well as high cost of die. Also in forging machines are very expensive. |
| **Labour skills** | 2 | 2 | 1 | Both the process requires equally skilled labour |
| **Storage** | 1 | 2 | 2 | Storage required by casting is more because alloys are to be added to molten metal. |
| **Quality of product** | 1 | 2 | 2 | Quality of forged rims is high. It has more strength also the porosity is less. |
| **Fatigue characteristics** | 1 | 2 | 3 | High in forged magnesium resulting in longer reliable service |
| **Process of heat treatment** | 1 | 2 | 1 | Casting requires heat treatment process where as in forging alloys are used directly. So no heat treatment is required. |
| **Ease in manufacturing** | 1 | 2 | 1 | Manufacturing through casting is more complicated as compared to manufacturing through forging. |
| **Weight of product** | 1 | 2 | 1 | Forged rims are lighter. |
| **Machining** | 1 | 2 | 3 | Machining in casting is more as compared to machining in forging. |
| **Total** | 14 | 17 | | |

# Process Selection



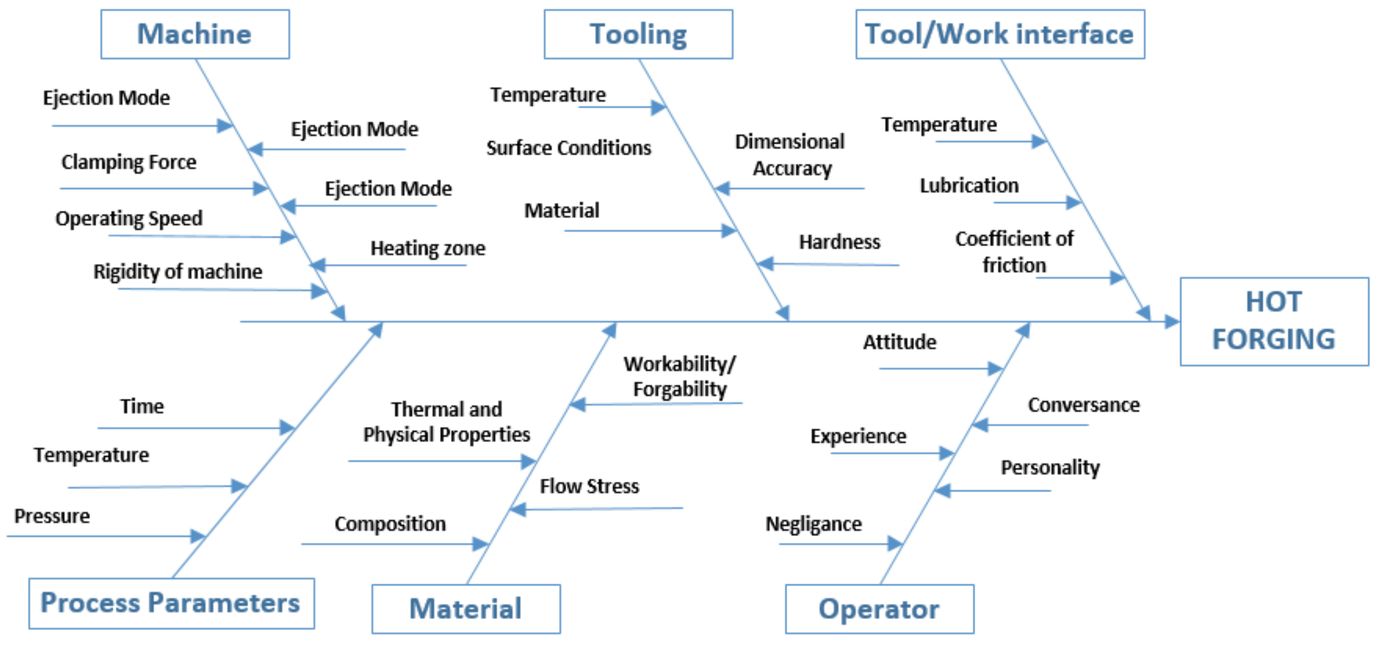
# Process Selection

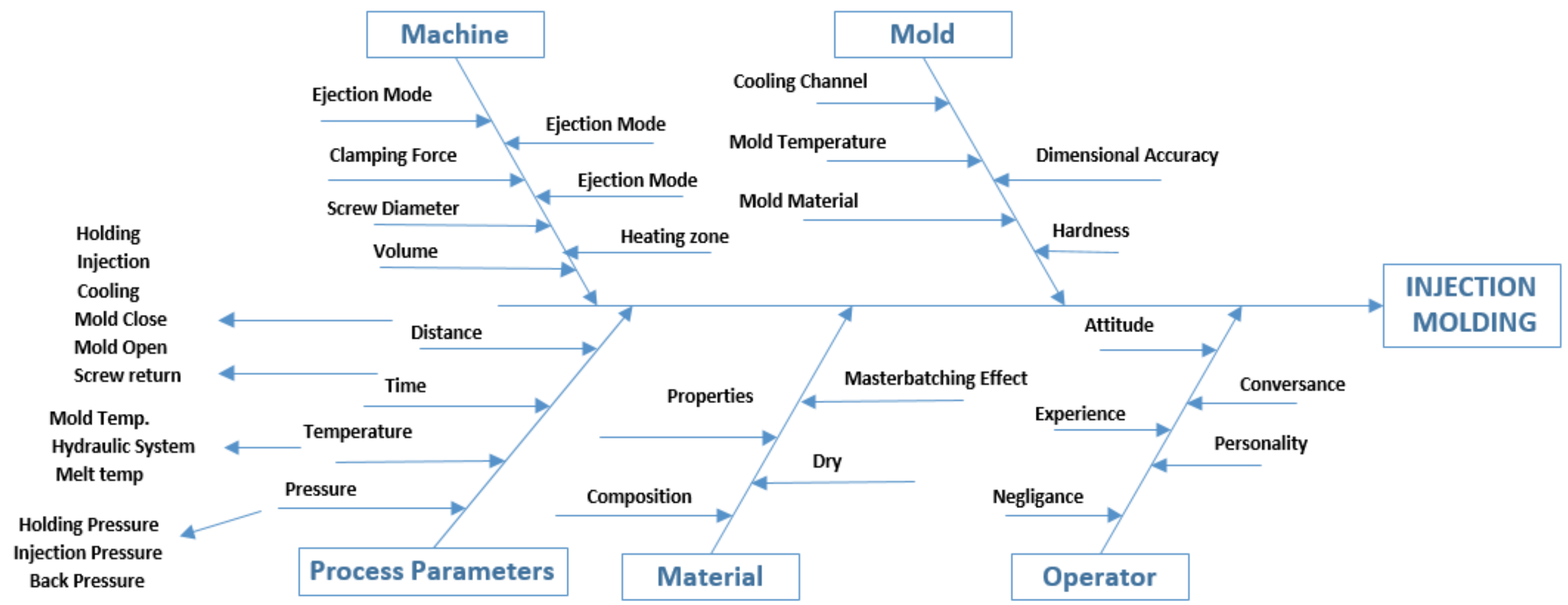
| Factor | Multiplying Factor | | Wet Layup | | Pre-preg | | Sheet moulding Compound | |
|---|---|---|---|---|---|---|---|---|
| **Automation** | 1.5 | Machinery | 1 | Manual skilled labor required | 2 | Cutting of the pieces can be automated | 3 | Only the laying of pieces requires manual labor. |
| **Storage** | 1.5 | Storage for raw materials | 1 | Fiber, resin, molds. | 3 | Pre-preg fiber and mold | 2 | Fiber, low viscous resin |
| **Production Speed** | 1.5 | High speeds | 1 | Resin needs to be applied | 2 | Medium to fast, some automation possible | 3 | Process is automated. |
| **Size** | 0.5 | How big manufacturin g possible | 2 | Any size and shape | 2 | No limit. | 3 | Limited due to resin flow |
| **Strength** | 1.5 | High strength | 3 | Highly controllable | 2 | Pre-decided strength | 1 | Least strength |
| **Complexity of the product** | 1 | Least complexity favored | 2 | All the layup is done easily onto the mold | 1 | Cut out according to the mold and set it up. | 3 | High resin flow complexity |
| **Labor Skill** | 1 | Decides spending on training of the workforce | 1 | Highly skilled labor as manual layup is required | 3 | Not so skilled labor | 3 | No skilled labor is required. Only the setup needs to be done. |
| **Shelf life of Raw Material** | 1 | Decides the material to be brought | 3 | Stored indefinitely | 1 | Requires special storage in fridge at low temperature. | 3 | Stored indefinitely |
| **Total** | | | 17.5 | | 24 | | 21 | |

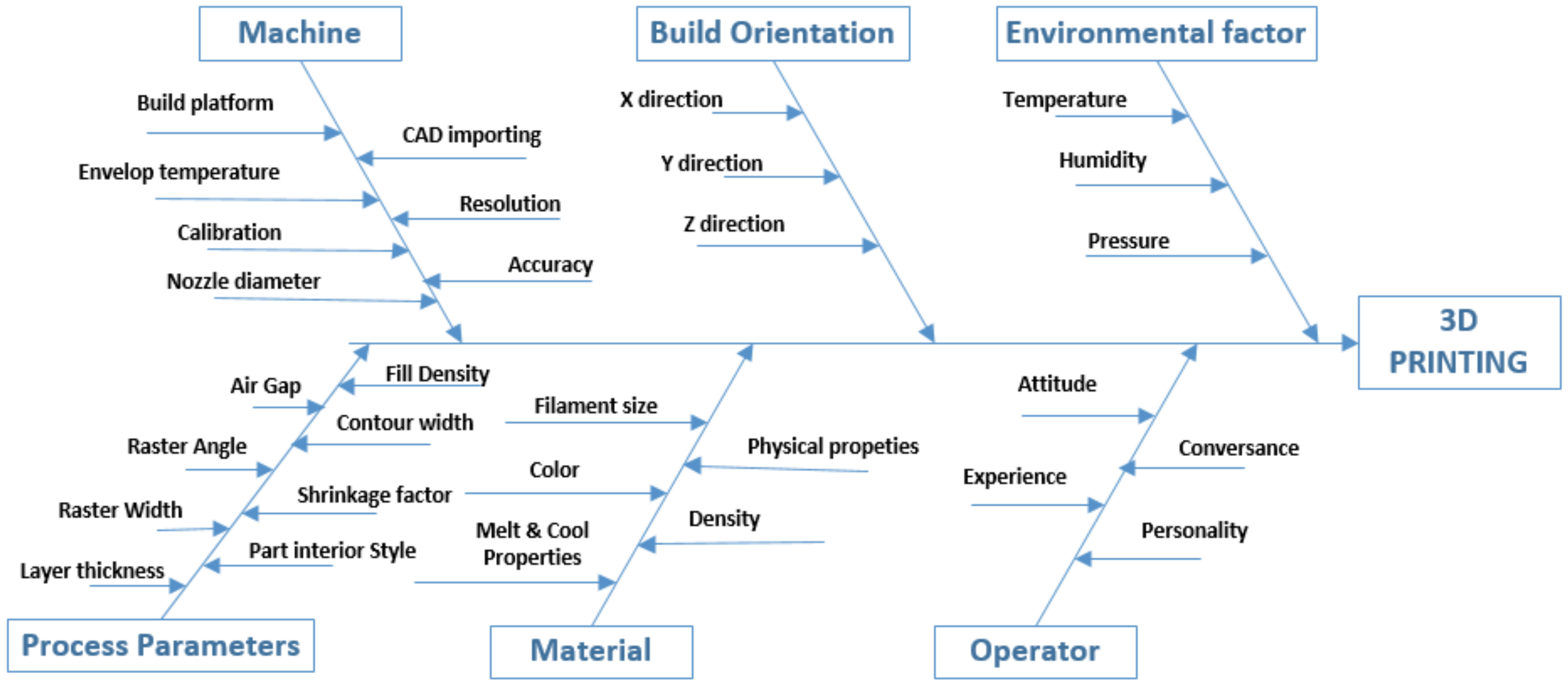
# Process Selection

| Factor | Injection Moulding | 3D Printing | CNC Machining | Reason |
|---|---|---|---|---|
| **Automation** | 1 | 2 | 1 | Both are equally automated. |
| **Production speed** | 3 | 1 | 2 | Production of forging is faster than casting. |
| **Availability of raw material** | 2 | 1 | 2 | In forging alloy can be used directly whereas in Casting Alloys metal has to be mixed. |
| **Processing cost** | 3 | 1 | 2 | The processing cost of forging is high because of short life of die as well as high cost of die. Also in forging machines are very expensive. |
| **Labour skills** | 3 | 1 | 2 | Both the process requires equally skilled labour |
| **Storage** | 1 | 3 | 2 | Storage required by casting is more because alloys are to be added to molten metal. |
| **Quality of product** | 2 | 2 | 3 | Quality of forged rims is high. It has more strength also the porosity is less. |
| **Surface Finish** | 2 | 1 | 3 | |
| **Ease in manufacturing** | 2 | 3 | 1 | Manufacturing through casting is more complicated as compared to manufacturing through forging. |
| **Weight of product** | 2 | 2 | 3 | Forged rims are lighter. |
| **Total** | 14 | 17 | | |

# Cause – Effect Diagram



# Risk Awareness

| Risk Awareness | | |
|---|---|---|
| **Pre Production** | External Sourcing (no material) | Have a backup supplier |
| | Damaged material | Agreement with supplier on quality |
| **During Production** | Machine Failure | Work in contingency into manufacturing schedule |
| | | Onsite mechanic trained in machine repair |
| | | Safety stock |
| | | Have a backup cause-effect analysis to solve issue |
| | Human Error | Regular mandatory training days |
| **Post Production** | Transportation Issue | Have a backup stock and transport plan |
| | Faulty Products | Rigorous QC procedure |
| | Customer satisfaction | Highly Trained customer services department |

# Industry Setup

## Plant Location

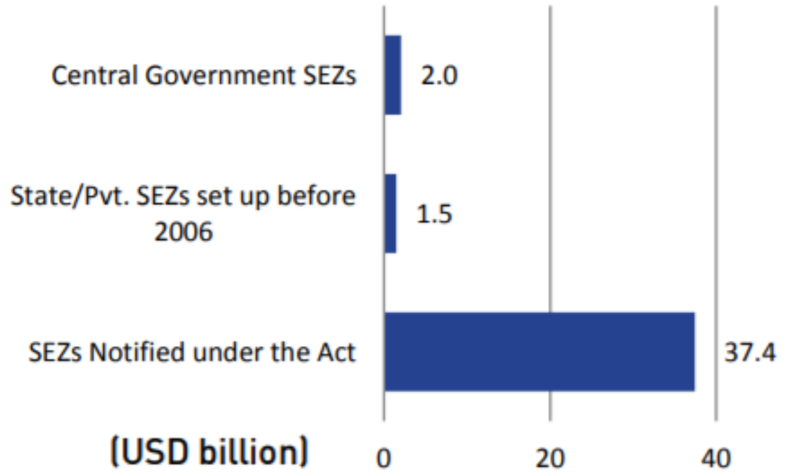
**SEZ of India – SIPCOT Perundrai , Erode district , Tamil Nadu**

100 per cent income tax exemption on export income for
SEZ units for first five years

Duty free import/domestic procurement of goods

Vicinity to market , rail , road transport area and sea port

Unemployment rate – 6.7 %



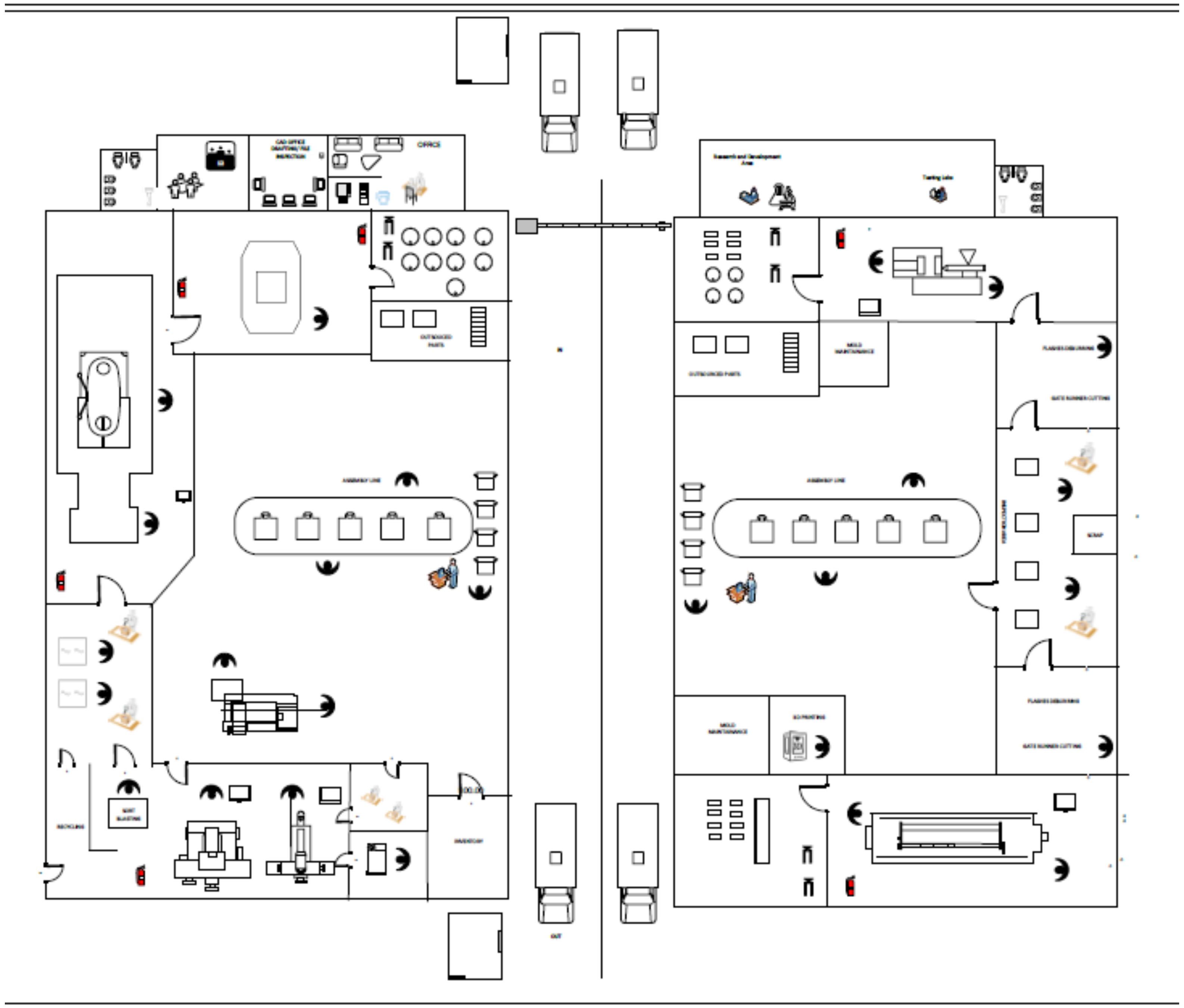

**Infrastructure Facilities**

- Customised support infrastructure
- Adequate warehousing
- Inland container depots
- Dedicated jetty for cargo movements
- Captive power plants of SEZs to support state electricity
- Safety and security measures

# Factory Layout

**Double U Shaped Assembly**

- Factory Size of  square feet (sq.ft)
- Factory Rent based on $60.00 per sq.ft.p/a totalling $750'000 p/a (per annum)
- All processes in one factory eliminates out of house problems and decreases the
- manufacture time per unit



# Material Requirement Planning (MRP)

## Inventory Control

### FIRST MONTH

| ERGONOMIC PACKAGES (FOR EVENT) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WEEK 1 | | | | | | | WEEK 2 | | | | | | | WEEK 3 | | | | | | | WEEK 4 | | | | | | | | |
| DAYS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| PR | | | | | | 10 | | | | | | 10 | | | | | | 10 | | | | | | 10 | | | | | | 10 |
| RECIEPT | | | | | | 14 | | | | | | 14 | | | | | | 14 | | | | | | 14 | | | | | | 14 |
| SOH (0) | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 4 | 8 | 8 | 8 | 8 | 8 | 8 | 12 | 12 | 12 | 12 | 12 | 12 | 16 | 16 | 16 | 16 | 16 | 16 | 20 |
| POR | 14 | | | | | 14 | | | | | | 14 | | | | | | 14 | | | | | | 14 | | | | | | 14 |

| ERGONOMIC PACKAGES (FOR CARS) AND CAR PRODUCTION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DAYS | WEEK 1 | | | | | | | WEEK 2 | | | | | | | WEEK 3 | | | | | | | WEEK 4 | | | | | | | | |
| DAYS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| PR | | | | | | 1 | | | | | | 1 | | | | | | 1 | | | | | | 1 | | | | | | 1 |
| RECIEPT | | | | | | 1 | | | | | | 1 | | | | | | 1 | | | | | | 1 | | | | | | 1 |
| SOH (0) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| POR | 1 | | | | | 1 | | | | | | 1 | | | | | | 1 | | | | | | 1 | | | | | | 1 |

INTERCHANGE OF STOCK WITH CURRENT RECEIVED ORDER

### SECOND MONTH

| ERGONOMIC PACKAGES (FOR EVENT) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WEEK 5 | | | | | WEEK 6 | | | | | | | WEEK 7 | | | | | | | WEEK 8 | | | | | | | WEEK 9 | | | |
| DAYS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| PR | | | | | | 10 | | | | | | 10 | | | | | | 10 | | | | | | 10 | | | | | | 10 |
| RECIEPT | | | | | | 14 | | | | | | 14 | | | | | | 14 | | | | | | 14 | | | | | | 14 |
| SOH (20) | 20 | 20 | 20 | 20 | 20 | 24 | 24 | 24 | 24 | 24 | 24 | 28 | 28 | 28 | 28 | 28 | 28 | 32 | 32 | 32 | 32 | 32 | 32 | 36 | 36 | 36 | 36 | 36 | 36 | 40 |
| POR | 14 | | | | | 14 | | | | | | 14 | | | | | | 14 | | | | | | 14 | | | | | | 14 |

### THIRD MONTH

| ERGONOMIC PACKAGES (FOR EVENT) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | WEEK 10 | | | | | | | WEEK 11 | | | | | | | WEEK 12 | | | | | | | WEEK 13 | | | | | |
| DAYS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| PR | | | | | | 10 | | | | | | 10 | | | | | | 10 | | | | | | 10 | | | | | | 10 |
| RECIEPT | | | | | | 14 | | | | | | 14 | | | | | | 10 | | | | | | 10 | | | | | | 10 |
| SOH (40) | 40 | 40 | 40 | 40 | 40 | 44 | 44 | 44 | 44 | 44 | 44 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 |
| POR | 14 | | | | | 14 | | | | | | 10 | | | | | | 10 | | | | | | 10 | | | | | | 10 |

INTERCHANGE OF STOCK WITH CURRENT RECEIVED ORDER

| | ERGONOMIC PACKAGES FOR | | | CARS |
|---|---|---|---|---|
| | EVENT | STOCK | CARS | PRODUCTION |
| MONTHLY | 50 | 48 | 5 | 5 |
| YEARLY | 600 | 48 | 60 | 60 |
| TOTAL | 648 | | 60 | |
| | 708 | | | 60 |

# Quality Control

## Injection Moulding

### Pre Production

- Material Testing
- Mechanical Inspection
- Spectrometer

### During Production

- Machine Checks
- Mould Checks

### Post Production

- Visual Inspection for Sink Marks
- Gas and Burn Marks
- Liquid Plastic Flashing
- Short Shots and Knit Lines
- Colour Streaks
- Particulate Contaminants
- Delamination

- Colorimetry
- Resistance
- Temperature
- Dimensioning
- Humidity

## Hot Forging

### Pre Production

- Material Testing
- Mechanical Inspection
- Spectrometer
- Combustion Analysis

### During Production

- Machine Checks
- Mould Checks

### Post Production

DT

- Hardness Testing
- Tensile Testing
- Fracture Toughness
- Bend

NDT

- Ultrasonic
- Radiographic
- Magnetic Particle
- Liquid Penetrant

## COST BENEFIT ANALYSIS

| | Alluminium 7075 | | | | Glass Fibre (S Class) | | Polyurethane Foam | | | | ABS | | | Wood (HDF) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Steering Shaft | Peddal Box | Break Peddal | Railbox | Seat | Foot Rest | Seat Insert | Head Rest | Lumbar Support | Leg Support | Peddal Shifter | Steering Grip | Peddal Face | Steering Wheel |
| COST | $ 24.83 | $ 17.37 | $ 20.66 | $ 21.96 | $ 25.59 | $ 7.33 | $ 5.06 | $ 4.99 | $ 4.94 | $ 4.93 | $ 9.20 | $ 26.17 | $ 8.54 | $ 17.33 |
| PARTS MANUFACTURED | 3540 | 3540 | 10620 | 3540 | 3540 | 3540 | 10620 | 3540 | 7080 | 7080 | 7080 | 7080 | 10620 | 3540 |
| TOTAL COST | $ 87,893.14 | $ 61,494.86 | $ 2,19,378.86 | $ 77,728.29 | $ 90,573.43 | $ 25,943.14 | $ 53,706.86 | $ 17,649.43 | $ 34,995.43 | $ 34,894.29 | $ 65,136.00 | $ 1,85,293.71 | $ 90,725.14 | $ 61,343.14 |
| | | | | | | | | | | | | | | |
| TOTAL MANUFACTURING COST | $ 11,06,755.71 | | | | | | | | | | | | | |
| TOTAL SETUP COST | $ 1,84,350.63 | | | | | | | | | | | | | |
| OVERAL COST INCURED IN 5 YEARS | $ 12,91,106.35 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| PROFIT PERCENT | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% |
| | | | | | | | | | | | | | | |
| SELLING PRICE | $ 31.04 | $ 21.71 | $ 25.82 | $ 27.45 | $ 31.98 | $ 9.16 | $ 6.32 | $ 6.23 | $ 6.18 | $ 6.16 | $ 11.50 | $ 32.71 | $ 10.68 | $ 21.66 |
| PARTS MANUFACTURED | 3540.00 | 3540.00 | 10620.00 | 3540.00 | 3540.00 | 3540.00 | 10620.00 | 3540.00 | 7080.00 | 7080.00 | 7080.00 | 7080.00 | 10620.00 | 3540.00 |
| REVENUE GENERATED | $ 1,09,866.43 | $ 76,868.57 | $ 2,74,223.57 | $ 97,160.36 | $ 1,13,216.79 | $ 32,428.93 | $ 67,133.57 | $ 22,061.79 | $ 43,744.29 | $ 43,617.86 | $ 81,420.00 | $ 2,31,617.14 | $ 1,13,406.43 | $ 76,678.93 |
| | | | | | | | | | | | | | | |
| TOTAL REVENUE GENERATED | $ 13,83,444.64 | | | | | | | | | | | | | |
| TOTAL PROFIT | $ 92,338.30 | | | | | | | | | | | | | |

# Cost Benefit Analysis

| Yearly Revenue Chart | | | |
|---|---|---|---|
| Year | Revenue | Investment | Cumulative Profit |
| 1 | $ 2,76,688.93 | $ 4,05,701.78 | $ -1,29,012.85 |
| 2 | $ 5,53,377.86 | $ 6,27,052.92 | $ -73,675.06 |
| 3 | $ 8,30,066.79 | $ 8,48,404.06 | $ -18,337.28 |
| 4 | $ 11,06,755.71 | $ 10,69,755.20 | $ 37,000.51 |
| 5 | $ 13,83,444.64 | $ 12,91,106.35 | $ 92,338.30 |