

# Michelin in India:

## Sustainable enabler of the Ecosystem

April 16, 2020

# Context

## #1

- Help fight the COVID-19 pandemic

## #2

- Help sustain the conditions for a safe and progressive resumption of ecosystem

# Michelin Offer

## For development of masks with academia/ start-ups/ incubators

- Engineering support – Modeling, Calculations, Mold design, structure conversions for Indian population
- Technical counseling & 3D counseling
- Technical advise on Manufacturing
- Hand-shake with Michelin vendors that are helping us make masks
- Regulations / certification processes

# Responsibility of Indian production aspirants

- Execution, Scale-up, Revenue, Target customers
- Investment in Machines and Technology (*Michelin can offer supplier suggestions for machines & Installers*)
- Royalty for TT, where applicable, to provider directly
- Technology Transfer (TT) at a cost, where applicable, from providers directly
- *Michelin can offer hand-shaking with their vendors that are working with us for mask making*

# Michelin making Surgical Masks In France:

*(Indian production aspirant can replicate this model)*

- Package developed covering model definition, manufacturing operations and sanitary conditions for production
  - Model definition – Meeting EU standards. EN 14683, Type 1
  - Needs the right kind of textile fabric
  - Melt blown polypropylene tissue is mandatory for best quality masks
  - Sewing machines – Manual or Mechanized
  - Clean environment/ Sanitary Conditions
- Technical Uniqueness
  - Fully certified by EU standards, EN 14683, Type 1
  - Trusted multi-national company being certified for masks by EU & in the US by FDA



# Michelin making Reusable masks In France:

*(Indian production aspirant can replicate this model)*

- Reusable Masks

- VOC-COV is an ecosystem to develop and produce a reusable filtering mask
- The solution is a FM (Facial Mask) made of plastic and using interchangeable filtering disks
- The mask can be washed and disinfected more than 100 times, the filtering disks can be washed 20 times
- 3D printing to define the exact shape of the mask
- Injection molding for mass production
- Partner for textile filter to cut & assemble the 5 filter layers
- High sanitized facility for assembly

- Technical Uniqueness

- Fully certified by EU standards, EN14683, Type 1
- Trusted multi-national company being certified for masks by EU



**Example: (*Indian production aspirant can replicate this model*)**

## **Michelin has used these to start Surgical Mask manufacturing in EU**

Production lines sold by CERA (supplier in France)

IMECA (Subsidiary of Michelin that builds machines) contribution will be:

- buying parts and modules
- assembling lines in platforms (appr. 12 m x 3 m) at IMECA site

Installation and commissioning at CERA's customers site

Volume:

- 4 lines ordered; output of 700k to 1.4M per line per week
- 12 to be confirmed asap
- 8 potential lines in France

Cost of Machine 250k -350k Euros approx. + 100k installation

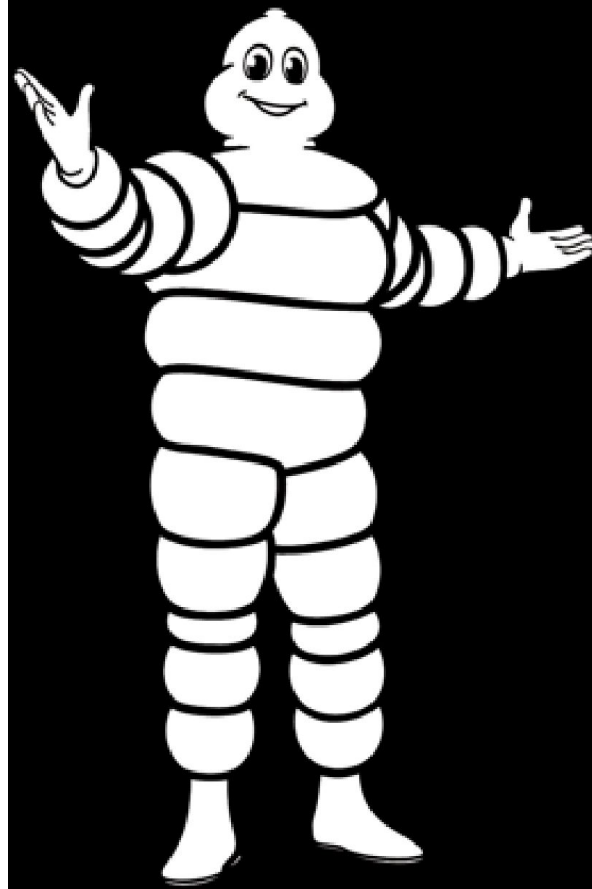
Uniqueness – Assembly is pretty commoditized

# Contact

**Dr. Arun Jaura**  
**Managing Director**  
**Michelin India Technical Centre Pvt. Limited**  
**World Trade Center, Tower 4, Floor # 4**  
**Kharadi, Pune – 411014**

**[arun.jaura1@Michelin.com](mailto:arun.jaura1@Michelin.com)**





**Thank you**