NEW YORK FACE MASK

Group Members:

Abdallah Alotaibi, Website developer

Jehad Alqubaisi, Client Contact

Adi Alqurashi, Document manger

Abdullah Alshammari, Project manger

Sultan Alzahrani, Budget liais

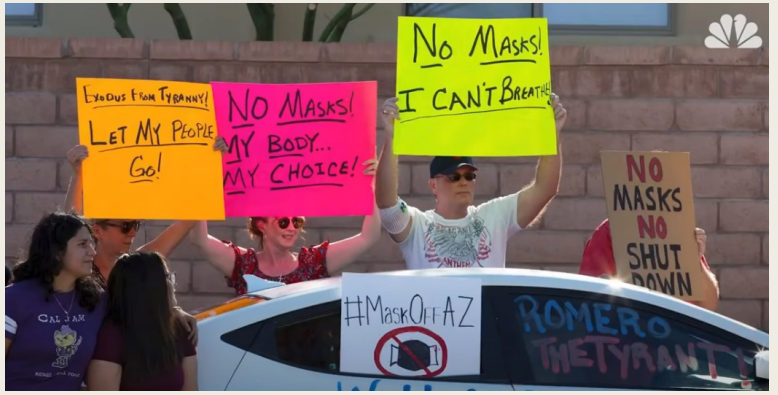
Source of Background Image:

Inspiration of Idea

The facemask is a necessity in current COVID times, but there are lifestyle and comfort issues that must be addressed to make this a new norm during these COVID times. The inspiration of this project is from the concept of “Being Human and able to breath” and we wish to work on a solution to “Make Facemask Livable” with the help of engineering and technology

Source: Today.com

Source: CNBC



Sources Provided as Hyperlinks – Click Text

Project Description

- The main objective of the project is develop a face mask that is:

  COMFORTABLY BREATHABLE: *Assisted by an electronic ventilation system*

  SOCIALLY ACCEPTABLE: *Allow user to assist in verbal and non-verbal communication*

- The project is sponsored by Northern Arizona University (NAU)
- The project is for **urgent importance** due to serious **COVID-19** situation and it is an effort provide a **lifestyle solution** to people during these critical time

Customer Requirements

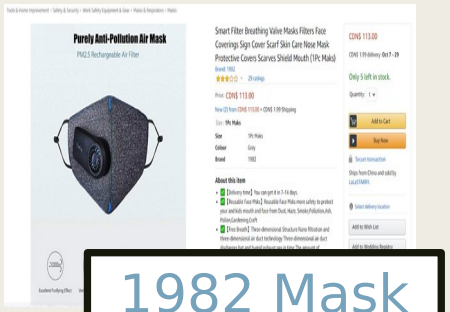
MUST HAVE (Ranked according to Priority):

- Allow unrestricted exhalation and inhalation
- Allow unrestricted **speech** and **non-verbal communication**

GOOD TO HAVE (Ranked according to Priority):

- Allow **easy eating and drinking** while wearing mask
- Allow **uninterrupted operability** in a **8 hour** working day
- “Surviving COVID-19 with a Laugh” – Incorporate fun features like voice altering

Existing Solutions



1982 Mask [1]

Rsenr Mask [2]

DM Zing Mask [3]

Broad Mask [4]

Sources Provided as Hyperlinks – Click Text

Problems with Existing Solutions

- All of the developed solutions are based on non-transparent materials that impairs verbal and non-verbal communication
- The ventilation system is not fully developed with consideration of human breathing requirements
- The price range of good solutions available in market is >100 USD
- Do not allow easy eating and drinking while wearing mask

OUR PROJECT WILL RESOLVE ALL THESE ABOVE PROBLEMS

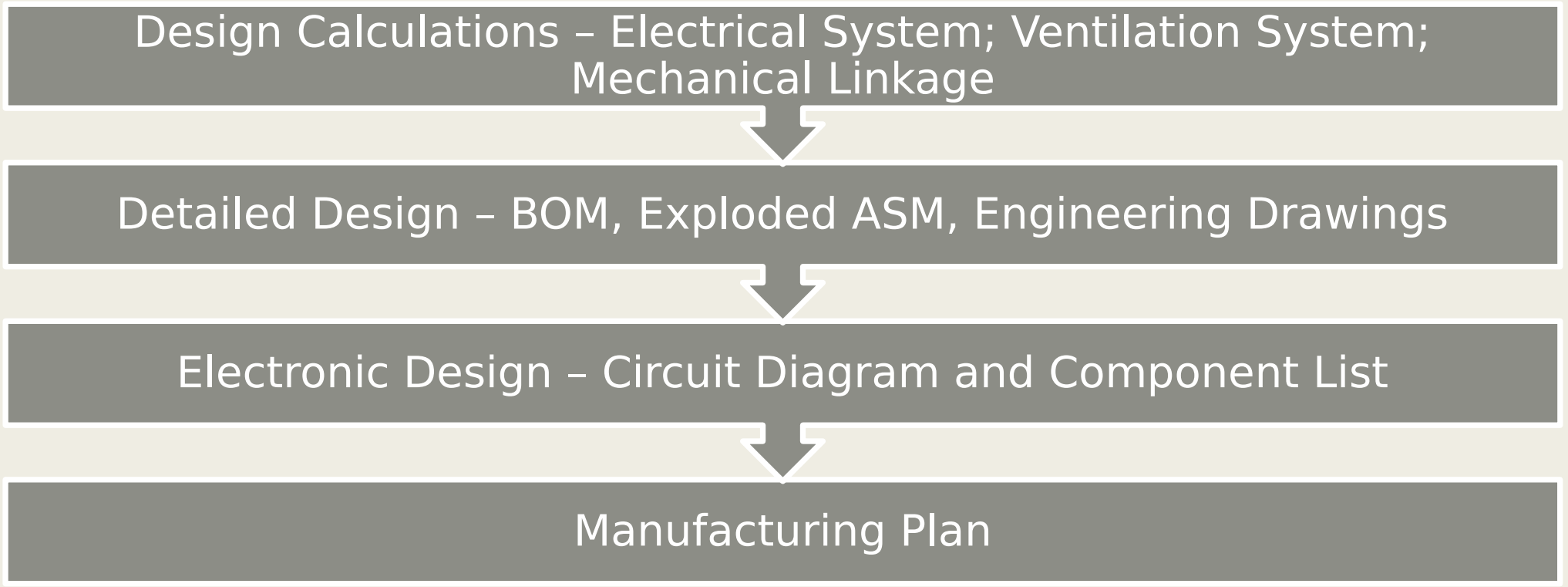
House of Quality

Customer Requirements	**Weightage**	**Engineering Requirements**	Ventilation System	Lightweight Transparent Material	Electronic System with simple Mic and Speaker	Bluetooth connectivity	Mobile Application Support	Mask Opening Mechanism for Eating and Drinking	2000+ mAh Rechargable Battery
Easy Inhalation and Exhalation	10		10						8
Transparent Material	8			9					
Voice Assistance	7				10	6	6		
Service Life of 8 hrs+	8					-4	-3		
Comfortable to Use	7			9		5	5		
Unrestricted Eating and Drinking	3							10	8
Reduced Cost	6			-4	-3	-5	-5		7
"Surving COVID-19 with									

Engineering Requirements and Targets

- Ventilation System - Tidal Volume of 0.5 L with Expiration Rate of 6 L/min
- Transparent Plastic material for manufacturing with wearable rubber at corner
- Arduino Nano based System electronic system
- Light-weight linkage mechanism
- 2500 mAh battery supply
- Final Product Cost of 50-100 USD

Tasks Proceeding Forward



Do you guys have any question ?

Reference

- [1]*Rb.gy*, 2020. [Online]. Available: https://rb.gy/w1gkjb. [Accessed: 21- Sep- 2020].
- [2]*Rb.gy*, 2020. [Online]. Available: https://rb.gy/jxzfwm. [Accessed: 21- Sep- 2020].
- [3]*Rb.gy*, 2020. [Online]. Available: https://rb.gy/slxfmt. [Accessed: 21- Sep- 2020].
- [4]*Rb.gy*, 2020. [Online]. Available: https://rb.gy/baja9l. [Accessed: 21- Sep- 2020].