Design of Fish Dressing Machine for Commercial Purpose

Student's Name	B. Rajesh	PD (PT-2011)
Academic Supervisor(s)	C. Gopinath and Vignesh Ravichandran	
Industrial Supervisor(s)		

B. Rajesh

rajesh.varma27@gmail.com
Ph. No: 0 96769 07322

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Abstract:

In the rural areas, fish dressing is done manually. It takes a lot of time for dressing and cutting the fish. There are lots of risks involved in handling the fish while dressing and cutting. Right now manual dressing is done without any safety measures. Minor injuries occur while dressing and cutting the fish. In the market area dressing operation is carried out with additional man power. It is found necessary to design a fish dressing machine for commercial purpose.

Patent references were taken to find out the various mechanisms, Ethnography study, user interviews were carried out to get exact problems and the requirements of the user. The fish stall is placed on the pavement of the main road without any electric power supply facilities. All the problems are captured and converted from customer voice to technical voice to generate PDS and QFD. The concepts were generated based on the QFD and the final concept was selected using Pugh's Matrix method.

The working principle was validated by feeding the fish into the machine and operating the machine. The proposed design improved the comfort of user in terms of ergonomics by doing the comfort analysis using the Dreyfuss 3D database which clearly introduced more than 70% of zones are comfortable and within the acceptable range. The machine was designed to be operated with manual drive as this would help the fish sellers to carry out their business anywhere without requirement of electric power supply. A full scale working model was fabricated for testing and validation. The results of the validation tests were satisfactory.
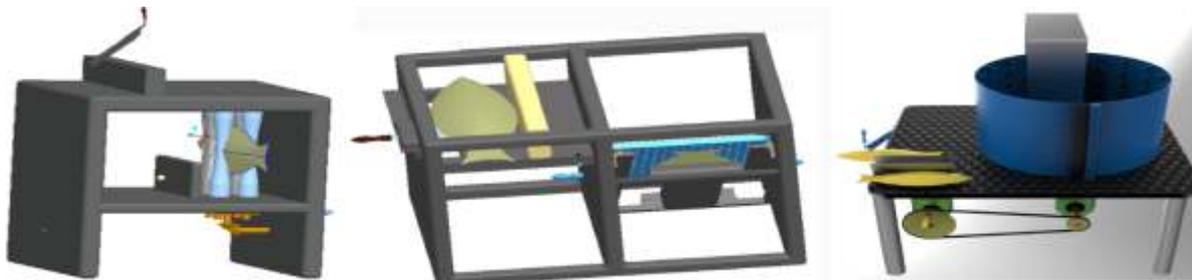
Various concepts of fish dressing machine
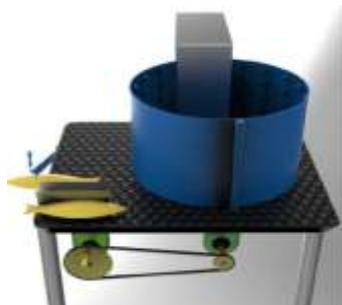
Rendered image	**Prototype**	**Mockup model**