**1.7. Projected Product Lifecycle**

Developing The Prototype

Getting Regulatory Commission Approval

Patenting

Market Research and Analysis

Pilot Launch and Training Program

Product Improvement

Manufacture In Bulk

No

Yes

Marketing and sales management

End of product use Informed by consumers.

Collect Used Product

Reusable Parts

E-Waste

Recycling the Parts Salvaged

Customer Support

Customer feedback analysis

Quality Assured

Yes

No

Reward User

Approaching Investor

Research and development Team

Customer Feedback

Form supply chain management Team

Servicing

Figure 1.8: Flowchart of the projected product lifecycle.

**Development of the Product:** The first stage of the product lifecycle when the product is prototyped. The process will be done in EEE400C Course where the students are required to build the proper prototype of the product according to the best solution.

**Approaching The Investors:** Business requires equity which might not be available from the production and development personnels. To produce in bulk, a large amount of capital is necessary, which could be financed only by an investor.

**Getting Regulatory Commission:** Any kind of product requires regulatory commission approval before the product can be launched. Although, the regulatory commission requirements are introduced and followed throughout the project, The Product might have some issues by the regulatory commissions that need to be covered in the further stages.

**Patenting:** To manufacture the product and generate revenue from the consumers, the design must be patented. Without patenting, the product might be vulnerable to market competition. However, some resources can be open sourced to increase the production facilities of the products such as Spare Parts.

**Market Research and analysis:** Any sustaining business has a focus on selling. To sale the product manufactured the market needs to be thoroughly researched. The potential buyers, market competitors, Spare part availability and Year-round production details are very crucial information before the production begins. The researched market then needs to be analyzed by a professional business administrative authority to ensure the best market penetration and sustainability.

**Pilot Launch and Training:** As the product is a new addition to the soldering industry, the product needs to be introduced to the workers and soldering production houses. Furthermore, being a new way of input (Hand Gesture), the process is less familiar to the manual workers. Introducing a training program will most certainly make the users understand the necessity of the product. In addition, a pilot launch will be necessary as industries are not very determinant to change the process of manufacturing.

**Product Improvement:** Constant improvement of the product is the most important assessment of business sustainability. The regular consumer and workers’ feedback will be beneficial to improve the product. The more improved product is more likely to be bought by the consumers. Also, quality assurance has a major effect on the improvement of the manufactured product.

**Research and development team:** Although the product improvement is done properly throughout the entire production process, a dedicated research and development team is a must for the betterhood of the company as well as the society. The constant development of the product maintaining social wellbeing and the product development required personnel who are into researching for the process. Because the improvement requires the authorization from professional bodies (Research and development team).

**Form supply chain management:** A part and parcel of a company is its supply chain management. Production, distribution, transportation, sales networking, customer need etc. are to be addressed by this team. The focus will be to control these factors to achieve the best efficiency in production. Besides, the supply chain is necessary to reduce unwanted loss because of proper management of resources. The supply chain will also address bulk production and the proper resources for production.

**Quality assurance:** Quality assurance is another important point that needs to be constantly monitored. The manufactured product of the same model must be identical in operation and other aspects. Otherwise, the brand reputation will be at potential risk. Also, a quality test is necessary for every kind of production so that consumers get the same usability. If the quality is not met, the product needs to be remodified to get the desired effect.

**Marketing, sales, and management:** Consumers must be approached by the sales team to introduce the product. Without any marketing information, the consumers have very little chance of contacting the manufacturer. The sales are also important to maintain sustained revenue generation. The sales team is necessary to manage the contact with the consumers and sell to finally earn a profit. The Management team is also necessary to properly manage the production, cost, sales, and product improvement. They play a vital role in maintaining the demand and supply chain of the product.

**Customer support:** The customers are the main source of revenue in this model, but without any kind of customer support the product is nothing better than an unusable box. Customer support is to provide product manual, support over call, usage guide etc. Learning to use the product with the help of customer support will save both time and increase productivity.

**Consumer feedback:** Any kind of business must have consumer feedback. The feedback always helps the manufacturers to produce more user-friendly products. The feedback also helps the manufacturers to eliminate the unnecessary aspects of the product and minimize cost. With that, the product feedback also helps with the possibility of manufacturing a newer version of the product.

**Customer feedback analysis:** The customer feedback is to be analyzed by this team to address the different interests of the customers to improve the of the product. In addition, the analysis of feedback will help to build further models of the product.

**Servicing:** The servicing of equipment will be a necessity for the consumers. In fact, a dedicated servicing team is necessary to address the issues with the product who are to respond quickly. Moreover, including mechanical parts, the product requires regular servicing of the equipment. Furthermore, the servicing of misused or out of order products can be a source of revenue. In addition, the servicing extends the product lifespan which is highly praised in the sense of environmental sustainability.

**End of product:** The product after using for a time might be unusable for the user. With that the product might not be in condition to service. In that condition, the product will be collected by the production house and repurposed. The parts that are still usable will be repurposed in the production. And the components that can’t be used will be disposed of properly as e-waste.

**Reward:** Giving feedback is thought to be a task rather than helping many consumers. So, a reward system will be introduced to get the feedback of the consumers. Also., rewarding while repurposing the machine will also be rewarded.

**Recycling the parts:** As the product includes multiple parts that are reusable after the product life span, the logical reasoning will be to reuse the parts that are still maintaining the quality of performance. Besides, the reusing of the parts lessens the need for production of spare parts along with less carbon footprint. Not to mention, the recycling product has great impact over reducing the production cost.