

## **ABSTRACT**

*CV. ELM is an MSME engaged in the field of fabrication and mechanics and become a supplier of parts and equipment for the manufacturing industry, ceramics industry, textiles, and the automotive industry. One of the products produced by CV. ELM is a poly net mesh spare part used to smooth ceramic surfaces. The average frequency of requests for poly net mesh spare parts always increases and is continuous every month, which is 700 pcs. The amount of demand cannot be provided in the amount and time according to the agreement because the daily production target cannot be achieved. Failure to achieve the total daily output of the production target reached 25%. Based on the identification of the factors causing the unachieved production target, it comes from the machine factor, namely the capacity of the tools that have not been able to meet the number of production demands and the tools used are still manual, which affects the production cycle time. Therefore, this study will design a multifunctional tool using the QFD (Quality Function Deployment) and TRIZ methods that can assist the production process of poly net mesh spare parts. QFD is a method for designing a process in response to customer needs. Then, this study uses the TRIZ method to produce specific suggestions for technical contradictions resulting from the House of Quality (HoQ) calculations. By designing a tool using the QFD and TRIZ methods, a multifunctional tool design is obtained that uses a semi-automatic system with components in the form of a mesh cutter, mesh straightener, and mesh roller. These tools help in the process of cutting, flattening, and winding the wire mesh material. The design of this multifunctional tool is accompanied by work instructions regarding procedures for using the tool and new production methods and operator scheduling regarding the use and maintenance of the tool. The design of this multifunctional tool is proven to be able to reduce production cycle time by 30% and increase production capacity to 2 pcs in 1 production cycle. So that the multifunctional tools can reach the daily production target of 100 pcs within 3.3 hours.*

**Keywords:** *Production Target, Quality Function Deployment, TRIZ, House of Quality*