

Kittipat Chatsuwavaree 2014: Project Feasibility Study of New Production Line Set Up of Electronic Part for Automotive Industry. Master of Engineering (Engineering Management), Major Field: Engineering Management, Faculty of Engineering at Si Racha. Thesis Advisor: Assitant Professor Sirang Klankamsorn, Ph.D. 177 pages.

Due to the expansion of customer demand in the automotive industry, the sufficient capacity of production is required for the manufacturers to gain higher profit. The purpose of this research is to propose the feasibility study of new production line setup for the electronics parts (speedometer, digital radio, CD player and Multi-function display) manufacturer in the automotive industry. The case study company is a large manufacturer of electronics automotive part in Thailand. The products under consideration in the research compose of Digital radio, CD player, Cluster of Eco car, Cluster of middle motorcycle model, Cluster of small motorcycle model, Cluster of Pick-up car, High Multi-function display, Low Multi-function display and Cluster of big motorcycle model. The previous problem of the manufacturer is the insufficient capacity of old production line to supply the customer. To setup the new 9 lines of products, the feasibility studies of 1) Marketing 2) Capacity 3) Environment and 4) Finance are established in this research. The marketing data during 2010 – 2012 was used to predict the 2013 – 2017 demands by using forecasting techniques, which is further used to analyze the appropriate capacity and to design the engineering processes. The capacity study was conducted by the automotive industry concept that synchronizes with the customer demand, capacity planning and cellular manufacturing. In the environmental study, the carbon dioxide emission was evaluated for a new line using the Sima Pro 7.3 commercial software. The result of carbon dioxide emission evaluation is further included in the company environment protection policy. Finally, the financial analysis was proposed to investigate the financial investment of the project, which is 107.86 million baht. Net Present Value is 206,550,457.24 baht, Internal Rate of Return or IRR is 75 percentages, whereas the Payback Period or PBP is 2.20 years.

Student's Signature

Thesis Advisor's Signature