

Performance evaluation of Taiwan' s photomask suppliers in semiconductor industry

李欣怡, Kuo-Chi Hsiao, Chih-Neng Yang

Technology Management

Management

amylee@chu. edu. tw

Abstract

The two trillion and twin star plan has been promoted in Taiwan in recent years. The two trillion means the semiconductor and the liquid crystal display industries, and the plan highlights the emphasis of the two industries. Taiwan' s semiconductor industry is currently the world leader in semiconductor fabrication. However, with globalize competition, Taiwan' s semiconductor manufacturing companies need to respond to uncertain external environment, such as rapidly adjusting the market changes and changing delivery dates of orders, and to integrate the firms' internal and external resources by building cooperative relationship with photomask suppliers, in order to maintain competitiveness. Thus, the evaluation of photomask suppliers' capabilities is an important issue for semiconductor manufacturers. In this study, fuzzy analytic hierarchy process (FAHP) model is constructed for evaluating photomask suppliers of a semiconductor manufacturer. Critical factors of the suppliers' competitiveness are listed first, and the priorities of the factors are determined next. The ranking of the suppliers under evaluation can be generated, and the results can be a reference for firms in evaluating and selecting photomask suppliers.

Keyword : performance evaluation; fuzzy analytic hierarchy process (FAHP); photomask suppliers