A fuzzy AHP and BSC approach for evaluating performance of IT department in the manufacturing industry in Taiwan

陳文欽, 李欣怡, 張景然
Technology Management
Management
amylee@chu.edu.tw

Abstract

In this ever-changing world, information technology (IT) is a must for the survival of a company, and the functions of IT department is becoming increasingly important. The assessment of IT department is critical to understand how the department contributes to organizational and strategic goals. Because IT department performs many tasks that cannot simply be measured by monetary units, evaluation methods that solely rely on financial measures are not adequate. The objective of this study is to construct an approach based on the fuzzy analytic hierarchy process (FAHP) and balanced scorecard (BSC) for evaluating an IT department in the manufacturing industry in Taiwan. The BSC concept is applied to define the hierarchy with four major perspectives (i.e. financial, customer, internal business perspective, and learning and growth), and performance indicators are selected for each perspective. A fuzzy AHP (FAHP) approach is then proposed in order to tolerate vagueness and ambiguity of information. A FAHP information system is finally constructed to facilitate the solving process. The results provide guidance to IT departments in the manufacturing industry in Taiwan regarding strategies for improving department performance. The constructed information system is suggested to be a good tool for solving other multiple criteria decision-making problems.

Keyword：Fuzzy analytic hierarchy process (FAHP), Balanced scorecard (BSC), Performance evaluation, Information technology (IT)