

Urairat Rimmai 2007: Applying the Performance Network for Productivity Management: Case Study at One Electronic Industry in Thailand. Master of Engineering (Industrial Engineering), Major Field: Industrial Engineering, Department of Industrial Engineering. Thesis Advisor: Associate Professor Kongkiti Phusavat, Ph.D. 206 pages.

Performance measurement represents a key component in a management process that helps enable in-dept and timely analysis, planning, and improvement. Nowadays, a strong management is necessary for an organization under intense competition. The study is based on the need expressed by top and operational managers at one electronic company, to be referred to as the ST, to improve productivity measurement and analysis at the production level. This need stems from a lack of an explicit linkage between information from performance measurement and target setting at the operational level. As a result, the performance network concept is selected to help address this concern. Several networks, consisting of ratios, have been developed and tested. Altogether, The data collection has taken place over the period of 12 months. The regression analysis as well as the Multi Criteria Performance/Productivity Measurement Technique (MCP/PMT) are so applied for extending productivity analysis into target setting and roadmap development.

The findings indicate the following. There are significant interrelationships among ratios from different levels in one performance network. Specifically for target setting, one of the findings illustrates that for a productivity ratio (Production Value-to-Direct Material Cost) is to be increased by 8%, the following targets also have to take place. For examples, one of the ratios at the network's level 1; i.e., the Production Value-to-Other Production Cost ratio, should be in the ranges from 0.8705 to 1.0639. Moreover, one of the ratios at level 2; i.e., the Scrap Electrical Cost-to-Rework Cost ratio, should be between 1.3517 and 1.6520. The scorecard show that the productivity is driven unit cost. According to follow-up discussions with senior managers at the ST, the performance network concept could potentially improve the linkage between productivity measurement and analysis as well as a plant's management process. Nevertheless, some of the key shortcomings include the reliance on quantitative data and a database that needs to generate accurate and time data on the continuous basis.

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