

2005 Sustainable Management Forum of Japan Awards: Practical Contribution Award

Sustainable Management Volume 3 Part 2 (December 2003): a thesis on methodological characteristic of Material Flow Cost Accounting focusing on actual examples in Nitto Denko

== **Date of Award** ==

May 21, 2005

== **Award Recipient** ==

FURUKAWA Yoshikuni

== **Reason for Award and Outline of Award-Winning Item** ==

Since fiscal year 2000, Nitto Denko has acted as a model enterprise for Material Flow Cost Accounting under a research project commissioned to the Japan Environmental Management Association for Industry by the Ministry of Economy, Trade and Industry. As such, it has worked to test the feasibility of the first introduction of material flow cost accounting in Japan and its effectiveness. It was this test operation and its leadership role that were recognized under the award. The following is a simple outline of the project.

(1) Material Flow Cost Accounting

At Nitto Denko, adhesive tape for electronics use was designated as the model product. In order to establish a method of dividing the material cost, energy cost, staff cost, depreciation cost and other management cost inputs at a quantity center (manufacturing or control process) into

those that flow into the product in various processes and those that flow into waste material and then of quantifying the material volumes and monetary values involved, they were divided into four cost factor categories: (1) material costs (2) energy costs (3) system costs (4) industrial waste disposal costs (transport and disposal costs). The relevant flow data were then quantified.

(2) Development from Material Flow Cost Accounting to Material Flow Profit and Loss Statement

Material Flow Cost Accounting is a form of independent and separate accounting which divides input values for each production process unit into flows into the product and flows into waste material. When we treat waste materials as a secondary product or Negative Product and assign to waste materials not only material costs but also, as appropriate, the various elements of manufacturing cost and then perform these two independent and separate calculations. Then, marketable product (Positive Product) cost and waste material cost are totaled, the result is Material Flow Costing Accounting. In Material Flow Profit and Loss (P/L) Statement, cost of sales is calculated by dividing it into the two categories of Positive Product Cost and Negative

Product Cost.

(3) Benefits and discussion

Establishing an overall picture of material inputs and outputs and an awareness of total wastage clarified issues in the production process. This allowed us as an enterprise to obtain data useful in assessing the need for innovation and improvement in the production process, working out response strategies, and assessing the feasibility of capital investment. If the issues can be resolved and flows into waste material can be converted into flows into Positive Product, a reduction of environmental burden will result. As Material Flow Profit and Loss (P/L) Statement identifies waste material cost, analysis thereof can be used to reduce the cost and secure profit. At Nitto Denko, analysis of the factors in the generation of waste materials and wastage in this model product and corresponding countermeasures resulted in an improvement of around 7%.

Material Flow Cost Accounting, as well as allowing the same amount of profit to be obtained with a smaller input of resources, can also have the benefit of reducing environmental burden. To put it another way, it is useful as an environmental management tool that, by improving resource productivity, serves both economy and ecology.



Award ceremony

Comparison of Profit and Loss Statements

November 2000

Material Flow P/L (Unit: Yen)		Conventional P/L (Unit: Yen)	
Sales*	15,000,000	Sales*	15,000,000
Cost of Positive Product	3,037,498	Cost of sales	4,521,968
Cost of Negative Product	1,484,470	N/A	N/A
Gross profit	10,478,032	Gross profit	10,478,032
Selling, general and administrative expenses*	8,000,000	Selling, general and administrative expenses*	8,000,000
Operating profit	2,478,032	Operating profit	2,478,032

*Provisional figure