Chapter 5

THE WAGONHO! CASE STUDY

There are those who act without knowing, I will have none of this. To learn a lot, choose the good, and follow it, to see a lot and learn to recognize it; this is next to knowledge.

Confucius
Analects 7:27

WagonHo!, Inc. is a toy manufacturer. It operates in a somewhat price sensitive niche market with fairly good demand. Management faces three problems:
1. They have a $1.3 million loss for the year.
2. They expect higher energy costs due to energy shortage.
3. They face possible tougher pollution legislation.

In this chapter, we will show how to make an Activity-Based Cost, Energy and Waste model, and how to use it to help management overcome these three problems. In (Emblemsvåg 1999), this case study was also used for contrasting conventional approaches (Contribution Margin Costing and ISO 14000 LCA) to our approach. In this chapter, however, the primary purpose of this case study is to serve as a learning exercise for how to develop an Activity-Based Cost, Energy and Waste model, and how to use it for engineering and managerial decision-support.

1. DESCRIPTION OF WAGONHO!

Nature uses as little as possible of anything.

Johannes Kepler

We have to start by saying that the toy manufacturer WagonHo!, Inc. is not a real company; it is a small company that exists in the computers at Center for Manufacturing Information Technology (CMIT) in Atlanta, Georgia. CMIT uses it as a simulation company where companies in Georgia can come and test out the newest information technologies in manufacturing. However, CMIT does have a model factory built in the laboratory where they actually produce products.

The ‘company’ experienced a $1.3 million loss. This is a highly unsatisfactory result, and the management is of course in dire need of decision-support to turn this dreadful result around.
1.1 The Organization

WagonHo! has 56 employees, and the organization is simple. The Chief Executive Officer (CEO) is Samuel P. Stone and the Plant Manager is Mary Ann Chesnutt. There are 6 production teams where each of the supervisors has six employees under them. Except from these 42 employees that are directly involved with production, the remaining 14 are overhead resources.

1.2 The Products

The strategy of WagonHo! is to target the high price/quality market for upper-class children. The products are mainly made of plastics, steel screws and some wood. The specific products are as follows, see also Figure 1:

- CW1000 Wagon, referred to as CW1000. This is a wagon with four wheels and front steering. The sales price of this product was $120, corrected for 12% sales rebates and 2% provisions we get $103.20. Current production is 5,000 units/year.
- CW4000 Wheel Barrow, which is denoted CW4000. This is a single wheeled barrow, without steering. It sold for $100, but the net sales price was $86.00. Current production is 3,000 units/year.
- CW7000 Garden Cart, which we simply call CW7000. This is a two-wheeled cart also without steering that was sold for $105 giving a net sales price of $90.30. Current production is 2,000 units/year.

1.3 The Production Facility

The shop floor is configured as in Figure 2 with; a) six lathes (L), b) six milling machines (M), c) six sub-assembly (SA) station, d) a kitting area, e) six final assembly and inspection (FA) stations and f) one central conveyer.