Various opportunities exist in a plant that are often overlooked and left untouched in spite of their potential to make profits. These include, for instance, limiting the production of defects, the margin of operation efficiency (man-hour), excess inventories, and missed delivery deadlines. These overlooked opportunities, or slack, are referred to as “Muda” in Japanese. Muda is essentially the waste of manpower, outputs, money, space, time, information, etc.

American economists recognize this as “organizational slack,” which was first described by R.M. Cyert and J.C. March (1963). In prosperous times, such slack is usually left as it is. But, during recessions, when companies are struggling, emphasis is immediately placed on trying to improve organizational slack and profits. However, the Japanese feel that the cut into the organizational slack must be constantly executed whether in prosperous or adverse times. The continuous implementation of smaller improvement activities is the principle behind “Kaizen,” an activity employed by many Japanese companies.

Kaizen, or “5S,” is a method used to diminish the slack hidden in plants. 5S represents the Japanese words Seiri, Seiton, Seiso, Seiketsu, and Shitsuke, which collectively translate to a cleanup activity at the work place.

Over time, various kinds of dirt can accumulate in the plants and offices within a company. Dirt in a plant includes unnecessary work-in-process (WIP) inventories; defective inventories; unnecessary jigs, tools, and measures; “inferior oil”; and unneeded carts, equipment, tables, etc. In an office, the unnecessary documents, reports, and stationers are dirt as well. 5S is the process of washing out all this dirt in order to be able to use the necessary things at the necessary time in the necessary quantity. By implementing 5S, the levels of quality, lead time, and cost reduction can be improved. These are the three main goals of production management. Mr. Hiroyuki Hirano believes that by promoting 5S, a plant can supply the products which customers want, in good quality, at a low cost, quickly, and safely, and thus increase company profits.
To achieve the aforementioned goals, the following “Muda,” or slack, must be diminished:

1. **Excessive setup time.** It is time consuming to look for dies, jigs, or tools needed to perform setup for the next operation. Setup time can be reduced or eliminated by neatly arranging in advance the necessary materials for a particular setup operation.

2. **Defective materials/products.** Defects will become apparent in a clean plant. “Point photography,” a concept which stimulates feelings of pride and shame in workers, is used to motivate workers to reduce defects. (Point photography will be discussed in more detail at the conclusion of this chapter.)

3. **Cluttered work areas.** Cleanliness and neatness at the workplace increase the efficiency of operations. Conveying products becomes easier after eliminating unnecessary materials on the floor. A clean workplace raises worker morale, thereby increasing the attendance rate. In addition, since a clean facility reduces problems, the available operating time in a plant will also increase.

4. **Missed delivery times.** To deliver products just-in-time, the inputs for making products, such as manpower, materials, and facilities, must flow smoothly. Since the lack of necessary units will be more visible in a clean plant, orders to replenish necessary supplies will become more efficient and less time will be wasted waiting for materials.

5. **Unsafe conditions.** Improperly stacked loads, oil on the floor, etc., can cause injuries to workers and perhaps damage inventory, which will increase costs and delay delivery of products.

The 5S movement has several other merits to it. For example, it cultivates good human relationships in a firm and raises morale. A company, whose plants are clean and neat, will win the credibility of customers, suppliers, visitors, and applicants.

The components of 5S are defined as follows:

**Seiri:** to clearly separate necessary things from unnecessary ones and abandon the latter. As a means to practice Seiri, red rectangular labels (described later) are used so that only necessary things will remain within the plant.