

Robbins Cake Company

The brief

Robbin and his mother are preparing to launch a company manufacturing cupcakes operating from their apartment. The company will provide fresh cakes in their locality. They need to evaluate the preliminary design for the company's production process to make key policy decisions, including what prices to charge, what equipment to order and how many orders to accept, and to determine whether the business can be profitable.

Business concept

Their idea is to bake fresh cakes to order, using any combination of ingredients that the buyer wants. The cakes will be ready for pickup at their apartment within an hour. Several factors will set them apart from competing products such as store-bought cakes. First, their cakes will be completely fresh. They will not make any cakes before receiving the order; therefore, the buyer will be getting cakes that are literally hot out of the oven. Second, they will customize the cakes depending on the customer orders received through email and mobile phone.

The production Process

Baking cakes is simple: place all the ingredients in a mixing bowl and mix them; spoon the cake dough onto a tray; put the cakes into the oven; bake them; take the tray of cakes out of the oven; let the cakes cool; and, finally, take the cakes off the tray and carefully pack them in a box. Robbin and his mother already own all the necessary capital equipment: a high-capacity professional-grade electric mixer, cake trays, and spoons. They have a small oven that will hold one tray at a time. The variable costs, therefore, are merely the cost of the ingredients (estimated to be \$0.60/dozen), the cost of the box in which the cakes are packed (\$0.10 per box; each box holds a dozen cakes), and electricity (\$0.05/ dozen).

A detailed examination of the production process follows. Robbin and his mother have timed the necessary operations. The first step is to take an order, which will be fast and accurate since Robbin has devised a method using the combination of e-mail and telephone system. When an order arrives, his mother first reads and prints the emails and sends a reply to the customer stating when the order will be ready for pickup and takes the printed order to the kitchen. This order processing step takes his mother one minute.

When an order arrives in the kitchen, the first production step is to place the specified ingredients in the electric mixer's bowl and turn on the mixer to mix the ingredients. The electric mixer can hold and mix ingredients for up to three dozen cakes. You then spoon the cakes, one dozen at a time, onto a cake tray. Adding the ingredients to the bowl and mixing takes 6 minutes, regardless of how many cakes are being made in the batch. That is, to mix enough dough and ingredients for three dozen cakes takes the same 6 minutes as for one dozen cakes. However, spooning the cakes onto the tray takes 2 minutes per tray.

The next step, performed by your mother, is to put the cakes in the oven and set the timer. The time to do this is negligible and will be ignored in this analysis. the cakes bake for 10 minutes. Because the oven only holds one tray, a second dozen takes an additional 10 minutes to bake.

Your mother also performs the last steps of the process by first removing the cakes from the oven and putting them aside to cool for 5 minutes, then carefully packing them in a box and accepting payment. Removing the cakes from the oven takes a negligible amount of time, but it must be done promptly. It takes 2 minutes to pack each dozen and about 1 minute to accept payment for the order.

This is the process they plan to use to produce cakes by the dozen at their company. Begin your analysis by developing a process flow diagram of the cake-making process.
