

Kellogg's Cereal Production Process

John A. Bryant, chief executive officer of Kellogg Company, scans the production reports lying on his new desk in the company's corporate headquarters in Battle Creek, Michigan. On January 2, 2011, Bryant had been named CEO of Kellogg, which produced \$12.4 billion in net sales worldwide, making it one of the largest cereal companies in the world.¹ Though he has years of industry experience, Bryant is trying to gain a detailed understanding of the company's cereal production process in preparation for his meeting with the board of directors the following week.

One issue in particular concerns him. In the reports from various factories, he is finding an issue with inefficient production flows for the popular Raisin Bran and Frosted Flakes cereals. Bryant has hired a consultant to investigate the root cause of the production line's inefficiency, and the consultant has concluded that the packaging lines sometimes are being starved of cereal. This inefficiency in the cereal production process is costing the Kellogg Company thousands of dollars every day in lost revenue. The board of directors will surely bring up this topic, so Bryant knows that he must create a viable solution before his meeting with the board next week.

The consultant knows that the key to streamlining the factories' troubled production process is to determine the optimal number of hours that one brand of cereal should be run before switching to another brand. Bryant knows that if the consultant can determine this figure, Bryant will be able to ensure a smooth, uninterrupted flow of delicious cereal coming from his factories.

Birth of the Kellogg Company

The cereal industry in the US has its roots in the practices and values of the early American 7th Day Adventists. In 1866, the Adventists founded the Battle Creek Sanitarium, a hospital and health spa, where wealthy patients were fed a steady vegetarian diet, including many grain-based foods.² One of these was the wheat flake, an invention of the superintendent, Dr. John Harvey Kellogg. In 1906, Dr. Kellogg's brother, William Keith Kellogg, noticed that these flakes were gaining popularity among the sanitarium's guests, prompting him to build the first flakes factory to serve the growing demand.³ This factory would later serve as the foundation for the Kellogg Company's international operations.

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