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DESIGN
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CASE STUDY

Braun: The KF40 Line of Automatic Coffeemakers

Executive Summary Case Study™

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■ This Executive Summary Case Study™ was prepared by Roxanne Guilhamet, former Research Fellow at the Design Management Institute, with Dr. Karen J. Freeze, Senior Research Fellow at the Institute.

CORPORATE INFORMATION (1989)

Company name:
Braun (a corporation within the Gillette Company, USA since 1967)

Headquarters:
Kronberg, near Frankfurt, West Germany

Locations:
West Germany and subsidiaries in 15 countries

Sales:
$824 million

Number of Employees:
8,600 worldwide (4,700 in West Germany)

Products:
Shavers, household appliances, hair care products, oral care products, appliances, and clocks

Market:
Quality-conscious, medium to upscale consumer

THE CHALLENGE

By the early 1980s, the world-wide market for coffeemakers was booming. Braun's previous entry, the KF20 (introduced in 1972), had won numerous design awards, but had proved too expensive to succeed in the marketplace. Braun needed to design a coffeemaker that was much more price competitive, yet still reflected the design quality characteristic of all of its products.

THE RESPONSE

Management established a cost target half that of the KF20 and defined estimated features. An innovative design configuration, fewer parts, less expensive materials, and sophisticated manufacturing methods all combined to reach the target. The new plastic materials created some aesthetic problems, which the designers were able to solve while adding visual and tactile interest to the product. When the KF40 was introduced in 1984, it quickly became a commercial success.

ISSUES

- Meeting ambitious cost targets without compromising elegant design and high performance
- Making virtue out of necessity by using design to negate the disadvantages of a low-cost material
- Competing against a huge range of models with competitive features and a modular design to keep investment cost down

BACKGROUND

Braun's reputation as a design-driven company began when Artur and Erwin Braun took over after the death of their father, the company's founder, in 1951. With Dr. Fritz Eichler, who joined them in 1954, they developed a "human-centered" philosophy that became a firm guideline for all of Braun's enterprises. Today the company states that it regards consumers as partners in its business, not as objects of its strategy.

In 1967 Braun was sold to the Gillette Company, a large multinational company. Relying on strong brand strategies, Gillette chose not to interfere with Braun's philosophy or its history of distinctive product design, viewing these as Braun's primary strengths. The corporate plan's challenge to Braun was to maintain and enhance its

reputation for quality while increasing its business five-fold in less than 20 years.

DESIGN ORGANIZATION AT BRAUN

Dieter Rams came to Braun in 1955 and became manager of product design in 1961. Today the design group consists of Rams (now chief designer and executive director), seven industrial designers, seven workshop and model builders, and three support staff. Although it formally reports to the company's management board member for technical operations, the group has direct access to the chairman through Rams. Dr. Eichler still participates actively in the business and sits on the company's supervisory board of directors.

Each designer generally works on a particular product line, and thus develops a close working relationship with colleagues in engineering and marketing functions. Most designers have been with Braun for many years, helping to reinforce the consistency of the company's design philosophy.

THE NEXT GENERATION OF COFFEE MACHINES

In August of 1981, Braun's then chairman, Lorne Waxlax, asked Gilbert Greaves, business director for household appliances, to explore Braun's potential in the coffeemaker business in the 1980s. He pinpointed the need to evaluate the cost/volume relationship and the technical issues that would determine the profitability of the program. Market research was conducted to identify the desired features of a new coffeemaker; by December Greaves supplied engineering with a list of features for a preliminary evaluation of cost, feasibility, and schedule. These features—such as a pivoting filter and an anti-drip device—were not new, but no competitor had combined them all in one model.

THE DESIGN AND ENGINEERING CHALLENGES

Engineering's reaction to Greaves was that the cost targets were unrealistic, given the product's specifications. For the next six months they conducted extensive technical feasibility studies, examining many potential solutions, including turning to an outside manufacturer. Both engineering and the designers strongly wanted to come up with an internal solution, and were determined to continue hunting for ways to cut costs.

The anti-drip device used on competing models was protected by patent. They therefore needed a completely new technical solution, which eventually was found and patented by Braun.

The challenge for design was to create a range of models using the same basic elements; this would minimize tooling and manufacturing costs. Each model, however, had to look as if it had been specially designed. Cost constraints were not to be visible. It was also important to be able to add features to future models without significant modification of the manufacturing tools.

The designers developed a form that would employ a single heating element (instead of two as on the KF20) and would therefore be less expensive to produce. But they wished to avoid the "two-tower" style (the watertank as one tower and the coffee carafe and filter as the other) typical of competitors' designs. The search for a "single tower" solution yielded a design more compact than the market had ever seen before. It placed a cylinder within a half-cylinder: the outer half-cylinder held the water and the inner cylinder the filter, coffee pot, and hot plate.

DETERMINATION PAYS OFF

The search led to the use of a new plastic material, polypropylene—less expensive than the plastic used previously, but still very strong. The plastic shrank about 1.7% during the high-speed injection molding process, however, resulting in slight, but noticeable ridges at joints. This problem was overcome by giving the wall of the water container a corrugated surface, a solution that also created an appealing contrast of texture between the smooth and ribbed plastic areas.

At this stage the designers worked in close partnership with the engineers, aiming to simplify the design by eliminating or consolidating parts. This effort yielded both cost reductions and innovative, functional design. For example, a silicone adhesive was used to glue the handle of the coffee pot directly to the glass surface, rather

than attaching it to a metal band circling the neck of the pot. The handle was designed to provide an easy grip while maintaining harmony with the circular forms of the machine as a whole.

ON TO MARKET

By early 1983 most of the problems had been resolved, and the chairman had approved completion of the project. Because efficient manufacturing was important to the product's profitability and quality, Braun made major investments in advanced manufacturing technology. The production process was computerized and robotized to a high degree.

By the middle of 1983 a marketing strategy had been defined: Braun would offer the KF40 in seven models, ranging in price from DM 70 to DM 149.

Introduced in August of 1984, the KF40 became an instant market success, selling 400,000 units in its first year. In 1988 Braun sold over 2.5 million units, and held a twelve percent market share, more than doubling its initial goal of a five percent share. Market research has shown that the innovative, compact design has been particularly instrumental in this success. ♦

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