



The Philip Morris GLOBE

★ BREAKING NEWS ★

Kraft sale Down Under

Kraft Foods Ltd. in Australia has sold its non-core cheese businesses to Australian Cooperative Foods Ltd., known as Dairy Farmers. The sale includes such brands as Fred Walker and Mil Lett. "Kraft now looks forward to focusing on premium brands and products such as Kraft Singles, Philadelphia, Vegemite, peanut butter and salad dressings," said Tom Park, area director, Australia and New Zealand, Kraft Foods International. "The company will maintain its leadership position in the Australian cheese industry and in added-value branded exports."

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Photos by Doug Boudier

Two PM USA teams were involved in the creation of the Accord smoking system: The York, Va., Cigarette Manufacturing Group (above) and the cross-functional team responsible for research, development and commercialization (right).

Years of work led to new smoking system

NEW YORK—About a decade ago, members of the research and development group at Philip Morris U.S.A. began considering the possibility of electronically heating tobacco to provide smokers with a cigarette that offers good taste and flavor with virtually no lingering odor, no sidestream smoke and no ashes.
As with many high-tech dreams, however, there was a catch: The technology lagged behind the concept. Early prototypes of a cigarette smoking system were created, but they were too cumbersome for the marketplace.
But by 1992, microchips had become smaller and more powerful, as had the nickel-cadmium batteries needed to power such a system. The R&D group at

PM USA was convinced they could begin a more determined effort to create a commercially viable product. In October, that product was unveiled. Called the Accord cigarette smoking system, it centers around the Puff Activated Lighter, a high-tech, pager-sized device into which an ultralight cigarette is inserted.
In a world where the word *unique* is routinely tossed around, the Accord system truly merits that designation. The Accord cigarette, which is designed to be smoked only while partially within the Puff Activated Lighter, is heated to burn temperature only when puffed, thereby eliminating smoke and ashes.
"We view this product as a strategic investment

(Continued on p. 7)

Miller restructures a key partnership

MILWAUKEE—Miller Brewing Company has reached agreement with The Molson Companies Limited and Foster's Brewing Group to restructure and strengthen their partnership.
As part of the agreement, announced on November 26, Molson and Foster's have purchased Miller's 20% stake in Molson, in a transaction valued at \$306 million.
At the same time, the three brewers agreed to create a new joint venture to manage Molson and Foster's brands in the U.S. Miller is the majority and managing partner of the U.S. venture, with a 50.1% stake, and retains control of the Molson and Foster's brands. The Molson Companies and Foster's Brewing Group each take a 24.95% stake.
The new joint venture replaces Miller's former 100% ownership of Molson USA, and provides Molson and Foster's with a greater stake in the U.S. success of their brands.
In Canada, meanwhile, Molson Breweries will continue to market Miller brands. The transaction closed on December 1.
The Molson and Foster's remarks are extremely important to our core U.S. business," said Jack MacDonough, chairman and CEO of Miller.

ment strengthens our business relationship with Molson and Foster's and assures these key imports will be handled by Miller distributors for years to come."
Added E. James Arnett, president and CEO of The Molson Companies: "We are particularly pleased that our relationship with Miller Brewing will be strengthened as a result of this agreement, both in Canada and the United States. We gain significant earnings potential in the U.S. market, while the Miller brands will continue to play an important role in Molson Breweries' portfolio of brands in the Canadian market."
The new U.S. joint venture, built on the strength of Molson and Foster's trademarks, represents one of the largest beer import businesses in the U.S. Molson Ice is currently the third best-selling import in the U.S., while Foster's—the No. 7 import—is enjoying double-digit volume growth. Miller's new agreement for the Foster's brand in the U.S. runs until 2018.
In Canada, Miller beer sales have been brisk of late, with volume this year expected to jump 25%. Miller's three core brands—Miller Lite, Miller Genuine Draft and Miller High Life—are sold in key

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Years of work led to creation of system

(Continued from p. 1)

that reflects our commitment to innovations which address consumer preferences," says Jack Nelson, senior vice president of operations, PM USA. "The Accord system offers adult smokers a new way to smoke cigarettes."

Employee collaboration

The development of the Accord system is a remarkable story of technological prowess, determination and teamwork.

Noting that 90% of cigarette smoke comes from the burning end of a cigarette, Cliff Lilly, vice president, technology assessment, PM USA, says the R&D challenge was to find a new method of providing smoke and flavor for the smoker that did not involve continual burning.

Developing the Accord system involved working with two outside partners.

"Microelectronics and battery power," he says, "offer the best answer for eliminating what smokers don't want—ash, odor and smoke around them."

The system took about five years to develop, cost some \$200 million and involved the collaboration of a team of approximately 80 employees in Virginia, New York and Japan, drawn from the ranks of R&D, manufacturing, consumer research, information services, finance, human resources, sales and marketing.

The R&D effort to create the Accord smoking system was led by Nelson and, in Richmond, Va., by Judy Carboni, then director of business development.

"Jack [Nelson] and Judy kept us on track," recalls Tom Garguilo, PM USA marketing director for business development, who was brought in to develop the marketing efforts. "Jack reminded us to think about consumer issues such as what would provide adult smokers with the best taste experience and what was the most logical way for them to use such a system. If we ever lost sight of the market, both he and Judy were there to remind us."

Core elements

The system is built around several core elements: the Puff Activated Lighter, the cigarette and a charger. The lighter contains a microchip, a nickel-cadmium battery and a heating element, while the charger contains a miniature catalytic converter to ensure that the lighter interior is cleaned when the smoker is charging the lighter.

Creating a couple of elements for the lighter—the heart of the system—involved collaboration with partners. "We know how to make cigarettes and we had developed prototypes of the system, but we recognized early on we needed a partner that specialized in electronics," says Nelson.

One of the easier tasks the team faced was choosing that partner: Japan's Sanyo Electric, the No. 1 maker of nickel-cadmium batteries

in the world and a major manufacturer of appliances.

The battery Sanyo developed that powers the Puff Activated Lighter carries enough energy from one charge to allow adult smokers to finish a pack of cigarettes and is compact enough to fit in the lighter.

A second partnership came into play, with the Oak Ridge National Laboratories in Tennessee, around developing the heating element in the lighter. Scientists at that prestigious institution helped the R&D team at PM USA develop a special alloy for the heater out of iron and aluminum, called iron-aluminide.

That tiny but complex part of the system incorporates a couple of important features: It maintains contact with the cigarette that is inserted in the lighter and, most importantly, it is resilient—withstanding both heat and the insertion and removal of cigarettes.

"Inventing a metal that will work as a heater and then testing to ensure that it is reliable involved a tremendous amount of effort," says Grier Fleischer, manager of business development, PM USA. "The fact that it works is a major feat. Smokers will judge the system on taste and consistency, and the heater is a key part of ensuring good, consistent taste."

The system took five years to develop, cost some \$200 million and involved approximately 80 employees.

A third piece in the puzzle is the microprocessor inside the lighter. No larger than a dime, it is the brains of the unit, controlling a range of operations, from providing energy to the heater when the smoker draws on the cigarette to indicating the battery power remaining via an LCD display.

Designing each of those elements was an achievement in its own right, but ensuring that the cigarette and lighter work in harmony was the crowning glory.

"Everything had to be done in a fashion that made the system as comfortable to use as possible, in as small a system as possible, and

in a way that is as logical and simple to use as possible," says Chuck Higgins, manager of business development, PM USA. "If one part of the equation didn't add up, then the system wouldn't add up."

Creating a new cigarette

The high-tech lighter represents just one part of the Accord system,

however. The Accord cigarette—designed only for use with the Puff Activated Lighter—also entailed creating a new type of cigarette, one that offered good taste, that could operate inside the lighter, and that could be extracted in one piece. (Other cigarettes will not work inside the lighter.)

That was accomplished through the use of a "mat"—a flat, rolled sheet of premium tobacco that wraps around the loose tobacco before being wrapped in traditional cigarette paper. The mat allows for reliable insertion and removal and contributes to tobacco taste.

Finally, issues of packaging and communication had to be resolved, such as how best to convey the product's unique offerings and how best to instruct adult

smokers on usage.

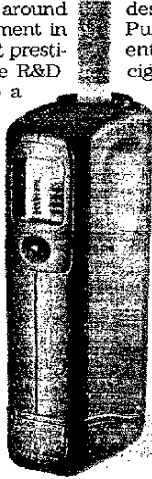
The name of the product was another challenge. "Accord means the bringing together of two or more things into harmony," says Garguilo. "That speaks to the system itself and to the issue of accommodation that this system addresses."

Limited consumer input

As with many breakthrough products that are competitively sensitive, the team often operated with limited consumer feedback.

"No one had ever done anything like this before, so there were always questions," says Jan Jones, manager of consumer and marketing research, PM USA. "We tested a range of shapes and textures and patterns for the system, for example. And for each one, we had to ask, 'Are we approaching this problem in the right way? Are we generating feedback in the best way?' Ultimately, we had to work out both big and small problems through a lot of brainstorming sessions."

They were aided in that effort by the spirit of cooperation and teamwork that came to define their diverse group.



The handheld Puff Activated Lighter.

An insider's view

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The **Puff Activated Lighter** contains three main elements:

1. **Heater.** Made of a special iron and aluminum alloy, the element heats the **Accord** cigarette to burn temperature.
2. **Microprocessor circuitry.** Controls a range of operations, including providing energy to the heater.
3. **Rechargeable battery pack.** Provides enough power for a pack of Accord cigarettes.

"We became a sort of small, very collegial company within Philip Morris U.S.A.," says Tim Beane, director of business development operations, PM USA. "We were able to combine that with a small company's sense of urgency about beating the competition on a very complex project. Everyone worked extremely hard on this."

The R&D work behind them for the moment, the team must now focus on consumer research, which is taking place in the U.S. and Japan.

"Because of the competitive nature of the product, we have only been able to use small focus groups to get reaction to various parts of the system," says Nelson. "Now we're in a position to take things to the next level. Do adult smokers like the taste and the smoke-on-demand feature? Are the displays on the lighter—such as the one that indicates when the cigarette is finished—intuitive enough? Depending on what these folks tell us, we will proceed accordingly."

[In Japan, **Philip Morris Kabushiki Kaisha** is conducting the research. Sho Minagawa, senior brand manager of marketing, PM KK, believes the system has a good chance of finding acceptance among adult smokers in Japan. "We tend to think that the Japanese in general are receptive to new technologies and products."

He also points out that the "low-smoke, low-odor" segment in Japan has been growing rapidly, accounting for 2.7% of the overall cigarette market. In addition, the ultra-low-tar segment in Japan accounts for a sizable proportion of the total market—some 43%.

"Our plan," he says, "is to spend several months now doing research to find out how adult smokers will respond to a new smoking ritual. We have to find out what smokers think about the trade-off between the smoking ritual versus the benefits of a system that offers low odor and very little sidestream smoke."

"We also hope to discover what the best way is to communicate the benefits of the system and how it operates."]

Addressing the market

Nelson acknowledges that, like any new technology, the Accord has its share of doubters. In fact, he likes to compare the system to the first generation of cellular phones. When introduced about a decade ago, the "cell" phone brought forth the usual crowd of naysayers. It was new and different, and a bit awkward to carry around. Passers-by would stop, look and point.

But, over time, the technology grew more sophisticated, the phones were streamlined and consumers became comfortable with them. Now, the phones are commonplace, of course—in fact, taken for granted.

Says Nelson, "We're hopeful the Accord system may find a niche among adult smokers who want to eliminate sidestream smoke, ashes and lingering odor."

Before the product can take its place in the market alongside traditional cigarettes, managers at PM USA are planning a lengthy period of testing. "We are now going to find out what adult smokers think