**DYSON- Solving Customer Problems in Ways They Never Imagined**

The impact of Dyson Ltd. on various industries belies its relatively brief history. In just 25 years, Dyson has succeeded in causing revolution after revolution as it has reinvented the vacuum cleaner, the household fan, the hairdryer, and the commercial hand dryer. It did this across a variety of mature product categories thought to be anything but innovative, a tribute to the company’s simple founding principles. First, every Dyson product must provide real consumer benefits that make life easier. Second, each product must take a totally unique approach to accomplishing common, everyday tasks. Finally, each Dyson product must infuse excitement into products that are so mundane that most people never think much about them.

**The Man behind the Name**

James Dyson was born and raised in the United Kingdom. In 1979, he purchased what its maker claimed was the most powerful vacuum cleaner on the market. He found it to be anything but that. Instead, the vacuum did little more than move dirt around the room. This left Dyson wondering why no one had yet invented a decent vacuum cleaner. He remembered something he’d seen in an industrial sawmill—a cyclonic separator that re-moved dust from the air. Why wouldn’t that approach work well in vacuum cleaners? “I thought no one was bothering to use technology in vacuum cleaners,” said Dyson. Indeed, the core technology of vacuum motors at the time was more than 150 years old. “I saw a great opportunity to improve.”

Dyson then did something that very few people would have the patience or the vision to do. Through trial and error, he spent 15 years and made 5,127 vacuum prototypes—all based on a bagless cyclonic separator—before he had the one that went to market. In his own words, “There were 5,126 failures. But I learned from each one. That’s how I came up with a solution.”

Dyson’s all-new vacuum was far more than techno-gadgetry. Dyson had developed a completely new motor that ran at 110,000 revolutions per minute—three times faster than any other vacuum on the market. It provided tremendous suction that other brands simply couldn’t match. The bagless design was very effective at removing dirt and particles from the air, and the machine was much easier to clean out than vacuums requiring the messy process of changing bags. The vacuum also was easier to maneuver and could reach places other vacuums could not. Dyson’s vacuum really worked.

The major appliance companies and retailers of the time had no interest in Dyson’s design. But Dyson gained distribution through a small mail-order catalog with an unusual sales pitch: “Your catalog is boring.” Shortly thereafter, Dyson vacuums were picked up by other mail-order catalogs, then by small appliance chains, and then by large department stores. By the late 1990s, Dyson’s full line of vacuums was being distributed in multiple global markets. Today, Dyson is the global leader in vacuum cleaners, with a line now dominated by lightweight, re-chargeable units.

**The Dyson Method**

Throughout the development of Dyson’s vacuums, a model for new products began to take shape: Take everyday products, focus on their shortcomings, and improve them to the point of reinvention. Dyson is known for saying, “I like going for un-glamorous products and making them a pleasure to use.” While taking this route, beyond finding solutions to the problems it is trying to solve, the company sometimes finds solutions for other problems.

For example, the vacuum motor Dyson developed sucked air with unprecedented strength. But the flipside of vacuum suction is exhaust. Why couldn’t such a motor blow air at wet hands so fast that the water would be pressed off in a squeegee-like manner rather than the slow, evaporative approach employed by commercial hand dryers?

With that realization, Dyson created and launched the Airblade, a hand dryer that blows air through a .2-millimeter slot at 420 miles per hour. It dries hands in 12 seconds compared with the more typical 40 seconds required by other hand dryers. It also uses cold air—a huge departure from the standard warm air approach of existing commercial dryers. This not only reduces energy consumption by 75 percent—a major bonus for commercial enterprises that pay the electric bills—but customers are much more likely to use a product that works fast and does the job right.

With highly observable benefits, the Airblade was rapidly ad-opted by commercial customers. Meanwhile, guided by Dyson’s customer-centric approach to developing products, the Airblade evolved. With the first Airblade, it was apparent that all that high-powered air is noisy. So, Dyson spent seven years and a staggering $42 million to develop the V4 motor, one of the smallest and quietest commercial motors available. As a result, the Airblade grew quieter and lighter—almost six pounds lighter than the original. Dyson’s innovation process led to variants of the Airblade, including the Blade V, 60 percent thinner and much sleeker than the Airblade, and the Airblade Tap, a faucet that washes and dries hands with completely touch-free operation. Even though the lion’s share of Dyson’s business comes from vacuum cleaners, Dyson Ltd. does not define it-self as a vacuum cleaner company. In fact, Dyson sees itself as a technology-driven company that develops products with the end user in mind. But rather than using traditional market research methods, Dyson takes a different approach. “Dyson avoids the kind of focus group techniques that are, frankly, completely averaging,” says Adam Rostrom, group marketing director for Dyson. “Most companies start with the consumer and say, ‘Hey Mr. or Mrs. X, what do you want from your tooth-brush tomorrow or what do you want from your shampoo to-morrow?’ The depressing reality is that you often won’t get many inspiring answers.”

Instead, Dyson’s uses an approach it calls “interrogating products” to develop new technologies that produce real solutions to customer problems. After identifying the most obvious shortcomings for everyday products, it finds ways to improve them. Founder Dyson’s philosophy is so focused on solving customer problems that he even developed the James Dyson Award—the top prize at an annual contest that challenges college students to design something that solves a problem. Once a problem-centered design is in place, the company then tests prototypes with real consumers under heavy nondisclosure agreements. In this manner, Dyson can observe consumer reactions in the context of real people using products in their real lives.

This approach enables Dyson to develop revolutionary products, such as those in its air treatment line of fans, air purifiers, humidifiers, and portable heating and cooling devices. It all started with the Air Multiplier, a fan that moves large volumes of air around a room with no blades. In fact, the Air Multiplier looks nothing like a fan. By using technology like that found in turbochargers and jet engines, driven by the power of its small digital motors, the Air Multiplier draws air in, amplifies it 18 times, and blows it back out in an uninterrupted stream that elimi-nates the buffeting and direct air pressure of conventional fans. The development of the Air Multiplier came about because of Dyson’s approach to developing new products. “If you ... asked people what they wanted from their fan tomorrow, they wouldn’t say ‘get rid of the blades,’” explains Rostrom. “Our approach is about product breakthroughs rather than the approach of just running a focus group and testing a concept.”

**The Next Big Thing**

About three years ago, Dyson Ltd. shocked the world when it announced plans to enter the automotive business. Specifically, it planned to design and produce zero-emission, all-electric vehicles (EVs) with the ultimate goal of developing fully self-driving vehicles. Reactions to this announcement varied, but most experts and observers were skeptical and critical. After all, this venture was unlike any that Dyson had previously pursued. For starters, automobiles are hardly products that are “so mundane, most people never think much about them.” In fact, the announcement came at a time characterized by more innovation in automotive design, propulsion systems, control systems, and even ownership models than perhaps ever before. Add the fact that no new automobile company had been successful in starting from scratch, penetrating the mass market, and sustaining business long term in well over 50 years. The barriers to entry in the automotive business far exceed those in the industries where Dyson currently competes.

Observers also scratched their heads as there were no readily apparent applications of Dyson technologies to the automobile industry. None of that has deterred Dyson. The company has committed more than $3 billion to get the business rolling and has begun construction of a manufacturing plant in Singapore with the express purpose of producing its EVs. In fact, Dyson is moving its main headquarters from the United Kingdom to Singapore, signaling the importance of this new venture. Dyson is also invested in the development and pro-duction of its own batteries to power the vehicles based on a new solid-state technology that promises batteries that are smaller, safer, lighter, longer-lasting between charges, and quicker-charging. And recently, as it applied for patents, the company revealed preliminary designs for both an EV and battery. It now asserts with confidence that Dyson will begin selling EVs in 2021.

What the outside world seems to overlook are the similarities between Dyson’s self-driving EV project and its previous product development projects. It all started with another James Dyson observation on the status quo of an industry. “All I could see and smell were these huge clouds of diesel exhaust coming out,” says Dyson. That led to the exploration of developing Dyson air filtering technologies for application in vehicle emissions. While emissions filtration showed promise, that project eventually led to the company’s first and only acquisition of an outside company—Sakti3, a small startup that was developing solid-state batteries. Most experts agree that the entire future of EVs and rechargeable de-vices rests on better, more efficient batteries. Dyson simply ac-quired a technology it did not already have.

Beyond batteries, many core Dyson technologies could play significant roles in the development of self-driving EVs. Dyson Ltd. has done more to advance electric motor technology than perhaps any other company today. True, Dyson’s current consumer products motors are far too small to power a vehicle. But proprietary elements of Dyson motor designs are likely relevant to developing better, more efficient motors for cars. For example, Dyson’s technologies could do for wet windshields what the Airblade does for wet hands. And then there’s the Dyson robot vacuum, one of the most advanced on the market. Seventeen years in the making, Dyson’s robot uses artificial intelligence, sophisticated sensors, and panoramic cameras to operate autonomously and learn its environments so that it can do its job without sucking up any stray socks or getting stuck behind furniture—capabilities on par with self-driving capabilities of to-day’s most advanced vehicles.

With each step toward developing its new EVs, Dyson makes it more clear that it means business. When pressed for details about its electric car, James Dyson indicates that it won’t be a sports car, it will likely be pricey, and it will have at least level 2 autonomy (hands-off). He also ads that Dyson’s first EV may not look much like any car the world has ever seen. But its previous entries into new product categories didn’t look much like vacuum cleaners, fans, hand dryers, and hair dryers either.

At Dyson Ltd., innovation never ends. The company not only continues to demonstrate that it can come up with winning products again and again, it is expanding throughout the world at a rapid pace. Dyson sells products in more than 50 global markets, emerging economies as well as developed nations. Dyson does well in both economic good times and recession-ary periods. From a single vacuum cleaner to EVs in just over 20 years—that’s quite an accomplishment.21

**Questions for Discussion**

1. Write a market-oriented mission statement for Dyson.

2. What are Dyson’s goals and objectives?

3. Does Dyson have a business portfolio? Explain.

4. Is Dyson a customer-centered company? Explain.

5. Based on Dyson’s past, predict the outcome of Dyson’s future in the automotive business.