

James Dyson - Product Designer/Entrepreneur

You know the feeling when some everyday product lets you down. 'I could have designed this better myself, you think. But how many of us turn our thoughts into actions? James Dyson does. He is a man who likes to make things work better. With his research team he has developed products that have achieved sales of over \$9 billion worldwide.



Early products by James Dyson

James Dyson's first product, the Sea Truck, was launched in 1970 while he was studying at the Royal College of Art. A few years later came the award-winning Ballbarrow that can go where no wheelbarrow has ever been before. Then there was the Wheelboat and the Trolleyball. Even the integral hose, seen on most upright vacuum cleaners, is a Dyson invention.

*You know the feeling when some everyday product lets you down.
“I could have designed this better myself” you think.*



Sea Truck
Sales to date of over \$500 million.



Ballbarrow
Market leader within 3 years.



Trolleyball
The most practical boat-launcher.



Wheelboat
Travels at 64km/h on land and water.

A new idea

In 1978, James Dyson noticed how the air filter in the Ballbarrow spray-finishing room was constantly clogging with powder particles (just like a vacuum cleaner bag clogs with dust).

So he designed and built an industrial cyclone tower, which removed the powder particles by exerting centrifugal forces greater than 100,000 times those of gravity.

After becoming frustrated with his bag vacuum cleaner that kept clogging James thought he could design a better machine using the same principle.

James Dyson set to work.

15 years and 5,127 prototypes later,
the world's first Dual Cyclone™ vacuum cleaner
from Dyson arrived.



Dyson Dual Cyclone™

The Dual Cyclone™ system is the first breakthrough in technology since the invention of the vacuum cleaner in 1901.

The traditional bag has been replaced by two cyclone chambers which cannot clog with dust. After the Dyson's outer cyclone has spun out the larger dust and dirt particles, the inner cyclone accelerates the air still further to remove the minute health-threatening particles.



How a cyclone works

Spinning air creates centrifugal force.

By making the air stream spin, dirt and debris are subjected to centrifugal force and thrown out of the air.



80,000 G



80,000 G

200,000 G

200,000 G

How a cyclone works

The higher the speed, the higher the centrifugal force.

A cone shape speeds up the spinning air to create even greater centrifugal forces. This removes microscopic dust particles out of the airflow. For example, Formula 1 racing drivers can be subjected up to 3 G-forces. Dyson DCO8 G-forces are 67,000 times greater.

Radix⁸Cyclone™

Dyson scientists were determined to create vacuum cleaners with even higher suction. So they set to work developing an entirely new type of cyclone system. They discovered that a smaller diameter cyclone gives greater centrifugal force. So they developed a way of getting increased suction power; more efficient dust separation; and higher dust pick up room after room - by dividing the air into 8 smaller cyclones, hence the name Radix⁸Cyclone™



1993



powerful suction created
from centrifugal force

The Creation of the Dyson Cleaner

1978

Starts to develop his dual cyclone TM technology, after realising his conventional system loses suction when renovating his country house in the Cotswolds.

1979 - 1984

Spends 5 years developing the cleaner, and builds 5,127 prototypes of the Dual Cyclone TM vacuum cleaner.

1983

Dyson produces his first prototype vacuum cleaner, a very post modern pink machine called the G-FORCE, which makes the front cover of Design MAGAZINE 1983.

1982 to 1984

Dyson spends two years trawling the UK and Europe, looking for someone to license the product. The multinationals are reluctant to invest in the Dyson as it would terminate the bag replacement market, worth \$250 million (AUS) a year in the UK alone.

1985

takes his invention to Japan, where his product is more readily accepted.

1986

The Japanese start to sell the G-FORCE.

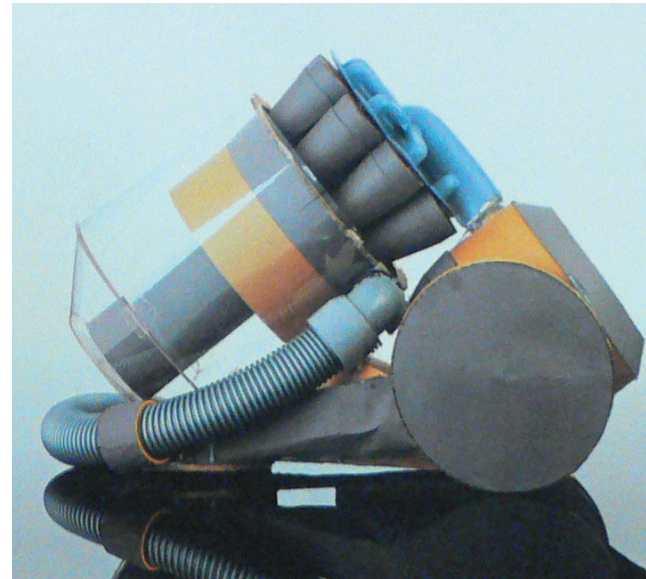
1987

The G-FORCE is displayed at the British Design Exhibition in Vienna.

1991

Dyson's G-FORCE cleaner wins the international Design Fair prize in Japan.

The Japanese are so impressed by it's performance that the G-FORCE becomes a status symbol, selling for \$2,000 (US) a piece.



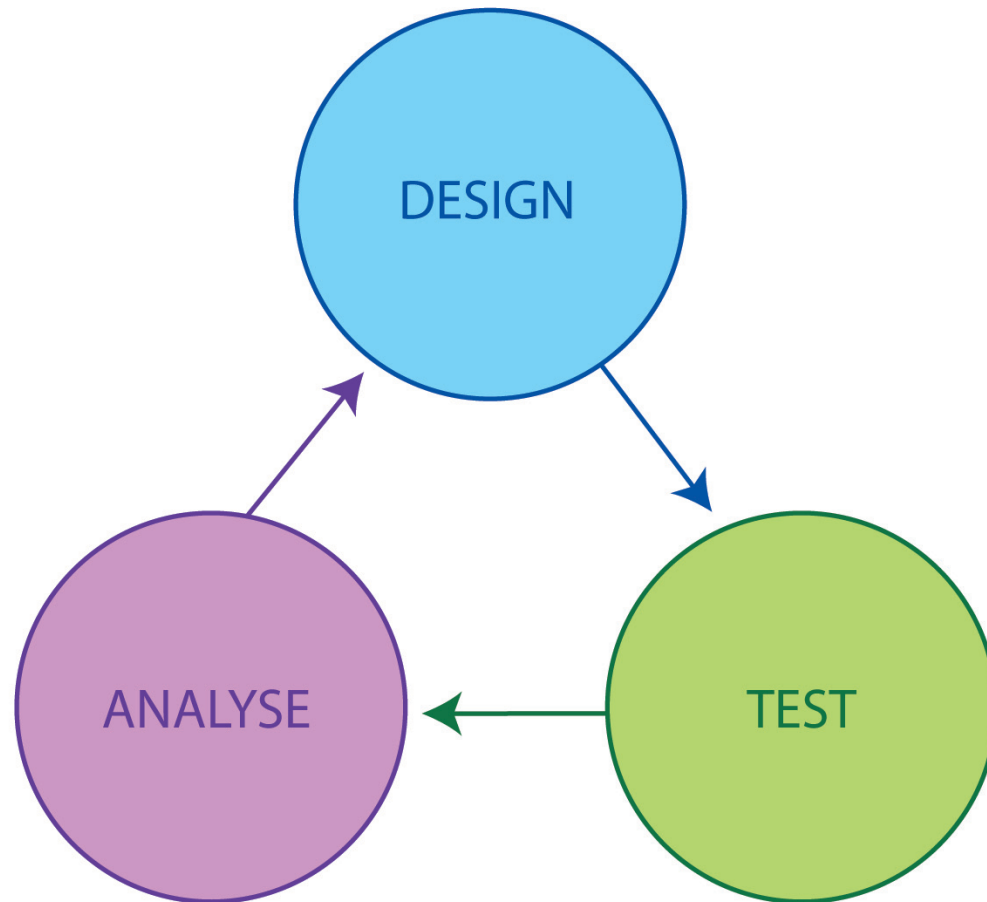
top images left and right: early cleaner prototypes

above: Dyson team members actively creating a mock-up for evaluation.

right: The G-FORCE machine Dyson took to Japan in 1985



The iterative design process describes a methodology based on a cyclical process, where successive versions or iterations of a design are implemented.



Today, the design process is less about a sole creator or visionary. Instead, the designer, the design manager and team are one of many translators or mediators, all looking at the client challenge from many different perspectives.

ITERATIVE PROCESSES

The nature of design is that it is a complex interaction between the people and the decision making process involved in bringing a product or service to market. Design processes are difficult to standardise, in part because of their iterative, non-linear nature, and also because of the needs of clients and users are so different. In addition, real life, with its changing market conditions and customer preferences, is much more dynamic, chaotic and fuzzy than any standard model can fully accommodate and often, stages of the design process overlap.

Iterations are a natural part of the creative process, but of course, a cut off point must be reached eventually, when the design team commit to an agreed direction, and reduce the level of exploration and development of new ideas. When to set this deadline is a matter of experience and judgement.

The team works together to understand the context and constraints of the challenge, with the aim of eventually proposing a viable and desirable solution within an agreed deadline.

below: Two specialised cleaners developed to meet specific consumer/user needs

1993

Dyson opens his own research centre and factory in Chippenham, Wiltshire.

1993 to 1996

James Dyson is the external examiner for the Industrial Design Engineering faculty at the Royal College of Art.

May 1993

The arrival of the Dyson DC01, retailing at around £200. Since its introduction the DC01 has become the best-selling vacuum cleaner ever and now outsells its nearest competitor by 5:1. Turnover of Dyson Appliances is £2.4 million.

1994

Turnover rises to £9 million.

February 1995

The Dyson DC01 becomes the best-selling vacuum cleaner in the UK.

March 1995

The Dyson Dual Cyclone™ DC02 is launched, and becomes the second highest selling cylinder model by value in the GfK hit list.

August 1995

Dyson Appliances moves from Chippenham and buys a larger factory at Malmesbury, creating substantial jobs in the area and thousands throughout the UK.

Dyson Appliances wins the largest ever UK export order for electrical goods from Japan.

“It gives a new meaning to the old phrase ‘shipping coals to Newcastle’,” concludes Dyson.

December 1995

Turnover of Dyson at end of year is £34.9 million.



Dyson DC07 Animal

The most powerful upright for pet hair.

- > Mini turbine head
- > Removes pet hair from confined spaces such as upholstery, stairs and the car.
- > Low Reach Floor tool
- > For easier cleaning under low furniture.
- > Carpet care kit
- > To keep new carpets looking new.

Dyson DC07 Low Reach

For easier cleaning under low furniture. **Low Reach** has all of the features of the DC07 All Floors plus a low reach floor tool which attaches to the reversible wand to clean hard to reach places such as under beds and sofas.

- **Low reach floor tool**
For easier cleaning under low furniture. Attaches to the reversible wand to clean hard to reach places such as under beds and sofas.
- **Mini turbine head**
Advanced turbine head removes pet hair and dirt from upholstery, stairs and the car.
- **Carpet care kit**
To keep new carpets looking new
Zorb powder absorbs dirt from your carpets and freshens the room.
Dysolv spray quickly removes spills and marks such as grease, food and soil.



Another problem to solve

Spurred on by a pass away comment from a friend that he loved the Dyson cleaner, but didn't want to push it around. . . James Dyson insisted that the Dyson DC06 robot should not only clean properly but should also guide itself more logically than a human would. It took 3 on-board computers, 50 sensory devices, and 60,000 hours of research to create efficient, methodical robot cleaning.

the cleaning robot . . .





The ball wheel lifted directly from his 1974 ballbarrow concept

Battling for design. . .

To Dyson, 'design' means how something works, not just how it looks - the design should evolve from the function. That's why the people at Dyson who design products are called 'engineers'.

The distinctive look of the Dyson products comes from this ethos of clearly showing the function of the machine. This has become a trademark style of the Dyson company .

Sadly, most education systems around the world still encourage children towards academic subjects and away from 'getting their hands dirty making things', according to Dyson.

DC15 The Dyson Ball

The Dyson DC15 (The Ball™) works very differently from traditional upright vacuum cleaners, by replacing conventional wheels with a ball.

Traditional upright vacuum cleaners can be heavy, unwieldy and difficult to steer, making cleaning your home something of a workout. Dyson's team of engineers and designers realized this problem so they went about designing a vacuum cleaner that was designed to move and make cleaning less effort.

Because The Ball™ can tilt and pivot (unlike conventional wheels), a simple turn of the wrist allows you to steer through a wide arc, making it easy to maneuver around furniture and obstacles.

October 1996

Dyson launches the limited edition DC02 De Stijl in homage to the Dutch design movement and the group's radical use of colour to highlight function and form.

The 'Doing a Dyson' exhibition opens at the Design Museum. The Dyson story is told in the book, "Doing a Dyson", launched to coincide with the exhibition.

Sir Ranulph Fiennes sets out on the Dyson sponsored Antarctica Solo Expedition, aiming for a solo crossing of Antarctica in aid of Breakthrough Breast Cancer. £1.7 million is donated to Breakthrough raised by a limited edition vacuum cleaner.

Dyson establishes a scholarship for two students at the Royal College of Art.

November 1996

Dyson wins both the Grand Prix Trophy and the Consumer Product Design Award at the UK Design Council and Design in Business Awards (DBA).

December 1996

Turnover of Dyson is 72 million.

The DCO1 sells 32,000 units a month, more than five times as many as its nearest competitor.

Dyson now turn their attentions to other household products that could be significantly improved.

Below Left: De Stijl Dyson pays homage to the dutch design movement. Right: Dyson Demo in London is a space used by Dyson for educational and media events to showcase their latest technologies.





dyson air multiplier

No blades. No buffeting.

The Dyson Air Multiplier™ fan works very differently to conventional fans. It uses Air Multiplier™ technology to draw in air and amplify it 15 times, producing an uninterrupted stream of smooth air. With no blades or grill, it's safe, easy to clean and doesn't cause unpleasant buffeting.

▶ See the difference between choppy and smooth airflow



The first few are now available at the Dyson Online Store.

[Browse the range](#)

How it works

Air is accelerated through an annular aperture. This creates a jet of air that passes over a 16" airfoil-shaped ramp, channeling its direction.

> Explore



Other advantages

No blades means the Dyson Air Multiplier™ fan is safe and easy to clean. It also has touch-tilt, 90° oscillation and dimmer-switch power control.



What people are saying

Find out what people are saying about the new Dyson Air Multiplier™ fan at our social media microsite, (opens in a new browser window).

> Visit the Microsite



Browse the range

Browse the new Dyson Air Multiplier™ fan range.

> Browse

