

# FIRST, IDENTIFY THE PROBLEM.



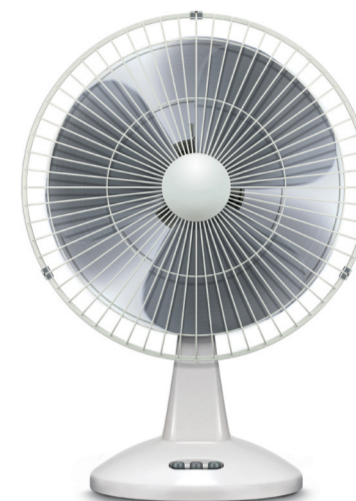
The boombox was large, and not very portable.



The conventional bicycle isn't easy to use in a busy city.



The lead in a pencil breaks easily, and needs frequent sharpening.



Fast-spinning blades can be dangerous.

# THEN, FIND THE SOLUTION.



Small and easy to transport, the Sony Walkman gave users 'music in their pocket'.



The Brompton Bicycle is foldable – so it can be carried on public transport and in busy places.



The lead in the Rotring pencil is the same diameter as the sharp end of a pencil, so it never needs sharpening.



The Dyson Air Multiplier™ fan uses patented technology to provide a cool breeze – without dangerous blades.

# FRUSTRATION PERSEVERANCE UNDERDOG WRONG THINKING ENGINEER



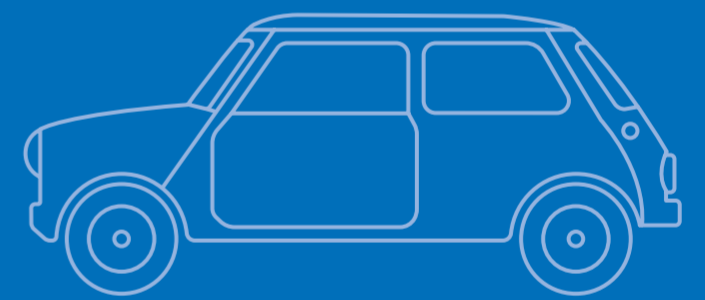
Identifying what frustrates you about a product can help you to make it better. Sir James Dyson's frustration with the vacuum bag encouraged him to rethink it. The Dyson DC01 is the world's first bagless upright vacuum using the a cyclone design that makes sure it doesn't lose suction.



When something doesn't work the first time, you have to keep making changes to improve it. Thomas Edison failed 10,000 times before perfecting the incandescent light bulb. After many rounds of experiment, carbon was tested to be the most effective material as a filament.



When designing a new product, you'll have to convince people that it's better and stay determined. The British Air Ministry turned down Sir Frank Whittle's gas turbine driven propeller so he patented it himself. The jet engine revolutionised flight as it allowed an aircraft to fly at great speed and height.



Wrong thinking is seeing solutions that other people might not. To create a small car that could still carry four adults, Sir Alec Issigonis decided to put the engine sideways. The wheels were also pushed all the way out to the corners to create more room inside the car.



# DESIGN BUILD TEST

The design process is iterative:  
Repetition leads to refinement and  
improvement, to create the best  
product possible.

It took a team of 65 engineers  
four years and hundreds of prototypes  
and simulations to develop the  
Dyson Air Multiplier™ fan.

The technology is still being  
improved – the most recent fans are  
up to 75% quieter and have a new  
remote control and sleep timer function.  
Continuous improvement is at  
the heart of the design process.

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# BE PERSISTENT. YOU'LL LEARN MORE FROM FAILURE THAN SUCCESS.

James Dyson  
Founder



Over the five years of development, 600 prototypes of the Dyson Supersonic™ hair dryer were built. 599 of them were failures. But each one taught Dyson engineers something: how they could make it better. At times, engineers had to go back to the drawing board. But every iteration was an improvement. Every prototype was closer to being an invention.

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