

Summary:

The world is becoming overwhelmed by plastic waste, and plastic containers that hold liquid are a big part of that problem. For the savvy social entrepreneur, this is an opportunity for innovation. In this challenge, you will use your knowledge of science, technology, engineering, and mathematics to design a business that uses new materials which can replace plastics and that do not cause so much harm to the environment.

Scenario:

In February 2019, a whale was found washed up on a California beach with over 80 pounds of plastic in its stomach! When we use and throw away plastic, much of it ends up in our rivers, lakes, and oceans, where it can hurt sea life. Because it takes hundreds of years for plastic to decompose, the amount of plastic in the ocean is growing rapidly. Some scientists now estimate that there will be more plastic than fish in the oceans by 2050.

Plastic is a big problem. One way to solve this problem is to use less plastic. Another is to replace or modify plastics. Scientists and entrepreneurs have invented new materials that can hold liquids and are dissolvable. In some cases, these materials are even edible! Containers made with these new materials can hold liquid and will decompose in less time than conventional plastics, greatly reducing the problems in our oceans today.

Challenge:

Our use of plastic containers is a major environmental problem. Your challenge is to **propose a business around producing and selling a liquid consumer product that is packaged in a dissolvable or edible plastic container.** Your business should include:

1. A description of the liquid consumer product your business will sell and its purpose.
2. A justification of the most appropriate shape and size for your product, given its purpose.
3. A detailed plan, with justification, for how you will package and ship your product.*

* Your plan for how you will package and ship your product must include a description of the size, shape, surface area, and volume of the optimal shipping container, including the ratio of surface area to volume. Demonstrate how those choices will protect your product and be cost-effective. Be sure to justify your choices in your Technical Brief.