The Life Cycle of a Water Bottle
Michael Liesman, Rebecca Peachey, Matt Schultz, James Claxton

Research and product development
Minerals are added to water for taste and the bottle is designed to be attractive and to fit well in the hand.

Marketing
Bottled water is marketed with pictures and words like “Pure” suggesting that this water is better than others.

Manufacturing
The bottles are made from Polyethylene Terephthalate (PET) pellets, melted plastic pellets are injected into molds and air forces the plastic to the mold walls.
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Packaging
Filled water bottles are packaged and distributed, the packaging is then disposed of, a massive amount into landfills.

Sales, Distribution, Transportation
Companies on average make a $1.30 profit per water bottle sold. Water bottles are packed into large pallets and stacked to be shipped to stores via boat train or truck.

Consumer Use
The water is consumed and the bottles are disposed of one of two ways.
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Research and product development-

There is very little that goes into the research and development of plastic water bottles in relation to other products. The research and development of the water is very minimal. As far as the actual water goes, select minerals may be added to enhance the taste of the water. The bottle, however, is given a bit more attention. It is important that the design of the bottle is attractive, uses as little resources as possible, and fits in the hand easily for grip.

Marketing-

The marketing of water bottles is what allows for their increasing presence in our lives. Corporations market bottled water as being better than tap water. They do this by using words like “pure” on their labels, and displaying images of mountains and rivers in their advertising. These marketing techniques imply to consumers that their water is better or healthier than other bottled water brands or tap water. Contrary to popular belief bottled water is no healthier or
better than tap water. This is made evident by taste tests, which show that people cannot tell the
difference between tap and bottled water. Tap water has also been proven to be just as healthy
as bottled water.


Manufacturing-

The manufacturing of water bottles begins with Polyethylene Terephthalate (PET), a plastic
produced from petroleum hydrocarbons. The primary method of producing water bottles is
stretch blow molding, a type of injection molding. In this process the plastic is injected into a
mold where it becomes a long cylinder. This is now placed into a new mold, where a hollow tube
called a mandrel, which fills the plastic with compressed air. The plastic is blown and stretched
into the mold, creating the bottle shape.

http://www.thomasnet.com/articles/materials-handling/plastic-bottle-manufacturing

Packaging-

After the water bottle is produced and filled with water it must be packaged to then be
distributed. For every one liter of bottled water, three liters are used to produce it. In the U.S.,
one third of all municipal landfills are made up of product packaging. Over ninety percent of the
cost of bottled water comes from either packaging, producing, or shipping the bottles. Some
companies have been reducing the amount of waste in packaging by using plant based
eco-packaging and by using designs that reduce the amount of packaging needed.

http://thewaterproject.org/bottled_water_wasteful
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Sales, Distribution, Transportation-

The cost of making a water bottle is about $0.16 on average. The bottled water industry sells the water bottles for about $1.45 per water bottle on average. There are about 140 bottled water brands. For transportation, water bottles are packed onto large pallets and stacked to be modular to reduce the cost of distribution. Trains and Boats are primarily used for the transportation.


Consumer Use-

In the United States, 1500 water bottles are consumed every second. Although drinking bottled water is convenient, it is one thousand times more expensive compared to drinking tap water. In 2012, the average American drank 30.8 gallons of water a year, which is about 167 bottles, and is the most popular bottled beverage. The amount of bottled water consumed in the U.S. constantly increasing. In 1997 the average American drank 13.7 gallons of bottled water. In 2007 that statistic more than doubled to 29.3 gallons of a water a year.


Final Disposition-

In the end, the water from the water bottle is consumed or used for some other purpose. The water bottle, however, is left over and is disposed of. Almost 19 billion plastic water bottles a year end up in landfill in the US alone. Water bottles release the toxin Bisphenol-A in their plastic contaminating the surrounding area. Only 3 Billion plastic water bottles end up in recycling. Those bottles are converted into playgrounds, car parts, carpets, etc. Recycling Glass bottles reduces water pollution by about 50%.

https://www.banthebottle.net/articles/plastic-water-bottles-impose-health-and-environmental-risk

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