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The Product Life Cycle of the Toothbrush

The Law of Periodicity states the law that everything in the universe has a natural cycle since change is constant in nature. All aspects of nature go through a certain life cycle from beginning to end. Just as nature goes through life cycles though, so do mass-produced consumer products. These products go through a seven stage product life cycle starting with research and development and ending with the final disposition of the product. Specifically, this paper will take the everyday toothbrush as an example of a mass-produced consumer product and analyze its product life cycle from start to finish.

The first step in the product life cycle is the research and development of the product. Toothbrushes whether it is standard or electric has one main purpose - to clean one's teeth. Many researches have looked into ways of maximizing teeth cleaning with different styles and types of toothbrushes over the years. For example, Hansjoerg Reick, a dental researcher for Oral-B, believes that a circular brush head that rotates and oscillates as the user cleans his or her teeth maximizes the teeth cleaning process and provides the most efficient means of removing plaque and preventing cavities. The research involved in dental hygiene and the toothbrush show that dental hygiene is key to one's health and the means of cleaning teeth with a toothbrush allows users to reach optimal health with consistent and correct use of a toothbrush.

After researching and developing the toothbrush, the second portion of the product life cycle involves marketing the product to the consumers who will buy and use the toothbrushes. Toothbrush producers like Oral-B or Crest will market their toothbrushes to both stores and the public in order to facilitate the selling of the brushes. The companies will advertise their toothbrushes to the public through means of the internet, television, and magazines, among many other forms of advertising media. Companies put out different advertisements for different styles and conventions of the toothbrushes in order to maximize sales and market and appeal their brushes to the greatest number of consumers. Based on public opinion of the toothbrushes Crest and Oral-B will either cease marketing the product if there is poor reception by the public, or further market and sell the product to stores for further consumer purchasing of the toothbrushes.

Manufacturing a toothbrush in the past was quite simple. Ever since 3500 BC, humans around the world used a toothbrush to clean their teeth. For example, in the 15th century, the Chinese made toothbrushes by attaching short stiff hair from necks of animals onto a bamboo handle. However, in the modern era, toothbrushes are made by a manufacturing process called plastic injection molding, which is a process of molding heated plastic under pressure. Making a toothbrush today requires a couple of steps. First of all, the materials are gathered for the handles and bristles. Handles are made out of

plastic whereas bristles are made of synthetic fibers such as nylon. Second, the handles need to be molded. Little pieces of plastic are molding in a machine, where the plastic melts. After the plastic cools down, the handles are pushed out of the molds. Third, bristles are cut evenly and positioned in the core of the handle, where small metallic staples are attached. Bristles come in various types such as, very soft, soft, medium and hard. Although, brushes are molded the same way, they come in different types. For instance, electronic toothbrushes come with a rotating head and sonic toothbrushes contain a removable brush head. After the toothbrushes are made, the packaging component follows.

As with most products, the resources used to package toothbrushes are plastic and cardboard. Unfortunately, the need for hygiene in transporting a toothbrush means that it will require some packaging. The entire idea of using a toothbrush is to be clean, which means the product has to be stored and transported in a hygienic way. Consumers would not willingly buy a toothbrush that is open to the air where germs can easily be spread. The easiest, yet most wasteful way of achieving this necessity is to wrap the toothbrush in plastic or to make a cardboard backing and cover the front in plastic. Companies usually are not very resourceful in being environmentally green when creating this packaging. Furthermore, after the packaging is taken off, it is usually thrown in the trash and not recycled.

Many advertisements on TV or in magazines attempt to raise awareness of dental hygiene. Because the toothbrush is already established as a useful product after years of research, any ad that speaks for a product about teeth indirectly promotes the use of toothbrushes. For example, Orbit gum consistently shows commercials of a woman who holds up a pack of gum and exclaims, "For a good clean feeling," while smiling with sparkling, white teeth. Although the commercial is advertising the gum company, it also makes the claim that people should want to have clean, sparkling teeth. Therefore, the commercial promotes the use of any product that increases dental hygiene, such as the toothbrush. Many ads also make claims that begin, "Dentists recommend..." or "Four out of five dentists agree...". These claims support the idea that a dentist is knowledgeable and would not lead you astray in selecting products for teeth care. As for the toothbrushes themselves, the companies that use the most aesthetically pleasing packaging are usually more successful. Toothbrushes are so widely used that distribution is at a maximum. They can be found for sale (or even as a complimentary product) anywhere, such as in supermarkets, dentist offices, or even small convenience stores.

Obviously, as consumers, we know it's important to brush our teeth. Not only does it promote dental health, brushing our teeth also promotes overall well being. Thankfully, toothbrushes are readily accessible and can be found in any grocery or convenience store. The American Dental Association recommends replacing your toothbrush every three to four months. However, this is susceptible to change depending on how the consumer uses their toothbrush. In the end, the length of time each toothbrush sticks around is entirely up to the consumer. When they feel their toothbrush has worn out and its bristles have separated, they throw away the first one, replacing it with a brand new toothbrush and continuing the life cycle of a toothbrush.

The final disposition of the toothbrush happens after the toothbrush is no longer useful to the consumer. Toothbrushes are manufactured from cheap plastics that aren't meant to last. Ultimately, after their short three-month life cycle, toothbrushes will end up in a landfill somewhere, taking up space and destroying our environment. However, partially because of its short lifecycle, there are several options when it comes to recycling your toothbrush. A company called Preserve produces special toothbrushes made from recyclable plastics found in yogurt containers. Once you're done with the product, it can be sent back to the company for further recycling. Another option is to send your regular toothbrush to Colgate, who has partnered with TerraCycle, turning old dental products into plastic lumber and other consumer products. Many consumers are unaware that these options even exist, almost always ending the life cycle in a landfill. While this may not be very efficient or environmentally friendly, the toothbrush has become an essential part to your average person's life.

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