

The Impact of Harley Earl's Planned Obsolescence on Enterprises and Consumers

6. Design Thinking - From Process to Product

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Introduction

This essay will discuss the reasons and effects of the Planned Obsolescence implemented by Harley Earl, a famous auto designer in the background of the Great Depression in the United States, under the leadership of the design department of General Motors, and its subsequent impact on the enterprises and consumers.

This essay will adopt the method of case analysis and data research. By focusing on specific cases, such as the automobile product case designed by General Motors and the mobile phone product case of Apple, we can explore how the Planned Obsolescence of the design of product development and sales will affect the company. Through purposeful data research, this paper explores the impact of Planned Obsolescence on consumers from consumers' purchasing psychological activities and product sales curve.

Planned Obsolescence is the practice of deliberately designing products with limited life to encourage consumers to replace products with newer models. This concept was first put forward by Harley Earl, an American automobile executive, who believed that the key to the success of the automobile industry is continuous innovation to create new products that attract consumers. Harley Earl's concept of Planned Obsolescence has had a profound impact on enterprises and consumers. For enterprises, planned obsolescence enables them to continuously generate revenue by releasing new products and encouraging consumers to replace old products. This can be seen in many industries where new models are

regularly released and consumers are encouraged to upgrade to the latest version. Designers have created great value for the company by constantly updating product samples, quality and functions. By regularly releasing new and improved versions of products, companies such as General Design and Apple can get a steady stream of revenue from customers who want to buy the latest and best products. This enables them to continue to grow and expand their business and promote economic growth and innovation.

For consumers, the Planned Obsolescence has led to the emergence of new and improved products, which has also made the competition between companies in the same industry more intense and the product iteration faster. This gives consumers the right to choose more diversified products, enabling consumers to benefit from the latest innovation, experience the changes brought about by high-tech to their lives, follow the technology and fashion trends, and enjoy a better life.

Background

'Born in Hollywood in 1893, Harley Earl is a representative of American commercial design and the first full-time automobile designer in the world'. (Baidu Encyclopedia, para. 2) University studies industrial technology and design. In 1926, he was admired by Alfred Pritchard Sloan, Jr, the chairman of General Motors, and became a stylist of General Motors. In 1940, he became the vice president of General Motors and the director of the "Art and Color Department" of General Motors. He was responsible for the design of automobile appearance. The design style was bold and innovative, creating the high tail fin style in post-war automobile design. His influence on automobile design reached an unprecedented level, and the design department of General Motors became the world's largest design center at that time. As the "father of concept cars", Earl is a genius who has changed the historical process of the automobile industry. He put forward the idea of building a concept car and is a leading visionary. One of his important contributions to General Motors is to create a new model of automobile design, "Planned Obsolescence".

'In 1933, the United States was in the period of the Great Depression'. (Baidu Encyclopedia, para. 22) The Great Depression had an extremely rapid chain reaction. People in cities were short of food and clothing, and many people had no food. However, agricultural capitalists and large farmers were destroying all kinds of "surplus" agricultural products, burning corn and wheat as coal, and pouring milk into the Mississippi River. The financial industry collapsed, the

consumption power declined, various factories began to reduce production, reduce production scale, lay off workers, leading to soaring unemployment. There are more than 100000 bankrupt enterprises and 11000 bankrupt banks. Urban residents have lost their houses and can only build simple shelters with wooden boards, old iron sheets, sacks and cardboard. Since there was no money to buy gasoline, cars were driven by cattle. A large number of previously rich businessmen and bankers, because of bankruptcy, had to push cars to sell apples on the street. At this time, General Motors is also in a very dangerous period. If no one buys a car, the company will have no income. In order to break the deadlock, Earl quickly revived the car sales through his design wisdom, turning the tide.

According to Harley Earl's opinion, when designing new car styles, we must systematically consider changing part of the design in the next few years, basically creating a system that makes car styles change slightly every two years at least, and a major change every three to four years, resulting in planned style aging, prompting consumers to give up the active market of old styles in order to pursue new styles, so that enterprises can obtain huge benefits. Today, many industries are using the Planned Obsolescence of this strategy, including electronic products, fashion luxury goods, large household appliances, and so on.

'Planned Obsolescence is mainly manifested in three aspects' (Wang, 2002, p. 217): 1. Functional abolishment, even if new products have more and newer functions, so as to replace old products. 2. Stylistic abolishment refers to the

continuous introduction of new fashionable styles and styles, which makes the original products obsolete and discarded by consumers. 3. Quality abolition, that is, the service life is defined in advance in design and production, so that it can not be used after a certain time. By artificially designing products that will become outdated after a period of time, the company can ensure that it can obtain stable and sustainable income from customers who need to replace old products, which enables the company to continue to grow and expand its business, promote the continuous growth of revenue, and create employment opportunities. When there is demand, there is production. The company needs to hire workers to manufacture and sell their products. In addition, the obsolescence in the plan can promote innovation, which is like catfish. Companies in the same industry will successively compete to release the best quality products to keep ahead of competitors, catch up with each other and benefit consumers.

Harley Earl and General Motors

The strategy of Planned Obsolescence was promoted by Harley Earl, a pioneering automotive designer who worked for General Motors in the 1950s and 1960s. Earl believes that only when consumers feel their old cars are out of date, they are more likely to buy new cars. On the premise of normal use, cars can not be replaced for a long time. For example, if a car can be driven for 20 years, then cars produced continuously during this period will be unsalable. In order to achieve this effect, we will stimulate consumers to buy new cars through the planned upgrading of models, that is, the design of vehicles will be slightly changed every two years, the design of vehicles will be changed every three years, and the new version will be changed every five years or so. We will artificially make the style of existing models aging, and use styling design to promote sales. The goal is to keep telling them that your car is out of date! Through his specific practice, it also fully verified his idea.

In 1913, Henry Ford creatively established an automobile production line, which shortened the assembly time of Ford's T-car from 12 hours to 90 minutes, and also reduced the price of the car from more than 4000 dollars to 360 dollars (T-car), making the car affordable for ordinary people. Cars have become very popular in the United States and are no longer a symbol of the rich. When the car penetration rate reaches a certain level, the market will change from increment to stock. At this time, the American economy is in the Great Depression. In order to reverse the situation of unsalable cars, Earl designed the first concept car Buick Y-

Job in human history in 1939. (Fig 1)



Figure 1. Harley Earl's *Y-Job*, 1939

Harley Earl hopes to make an innovative car through the most advanced technology and design concept to attract consumers' attention and test their acceptance and reaction. Then conduct evaluation and mass production. At that time, the car with such an innovative appearance was far away from the competing products of the same kind, and it could be called a cross era product, so that the entire automobile industry began to follow suit. Y-Job is a two seater model, deeply influenced by the "streamline" style of the United States at that time, with a smooth and round shape. The overall body is made of calm dark black, decorated with silver metal strips. The length of the front is exaggerated, like a missile ready to be launched at any time, full of a sense of future science and technology. Y-Job is also equipped with hidden lights, electric windows, and power steering wheel. It basically applies all the top technologies at that time, leading the products of the same era for more than 20 years. At that time, there

was no mass production of these two cars, but the voice of the market had obviously given Earl an answer. Crazy consumers were tired of their own family cars that were 20 years behind in style, and they asked how to buy them.

The value and charm of design are embodied here. Based on the first concept car experiment, Harley Earl was fully confident and soon designed the first generation Chevrolet Corvette mass production sports car in 1953 (Fig 2). Harley Earl also adopted the typical streamlined sports style when designing the first generation Corvette. This style can give people a sense of speed visually. The front of the car is usually larger than the rear, slightly tilted up, forming a visual feeling of being ready to spray. Compared with the previous concept car, the color has been changed to pure white like pearls. The overall style is relatively simple. One of its unique new technologies is that the car body is completely paved with fiberglass steel. Through eight generations, he integrated his idea of planned abolishment. In the process of continuous iterative upgrading, he upgraded functions and color styles. From the initial six cylinder engine configuration to the later eight cylinder engine configuration, from the original pure white to the final red, blue, black and other colors. In 1955, he became the first American sports car sales, with a total of 1.5 million units sold. At the same time, it also established Harley Earl's position in the history of global automobile design. Harry Earl was the first person to introduce the concept of modern automobile design into the automobile industry.



Figure 1. Harley Earl's *Corvette*, 1953

Before Harley Earl, the "design" of automobiles was dominated by engineers, emphasizing functional practicality. Most of the earliest automobiles were modified on the basis of carriages, and the appearance was the same. At that time, no car manufacturer had a special car styling design department. At that time, the most famous automobile manufacturer was Ford, whose representative T-car was a "square box". In 1927, General Motors established the Art and Color Section, and Harry Earl was employed as the department head. This was the first automobile design department of a manufacturer in the world. Earl even tried to introduce female designers into the automobile design department to try different car styles suitable for different people, so as to promote another innovation in automobile design. During Earl's overall leadership of the design department of General Motors, General Motors has implemented a series of design grading and iteration measures, such as product diversification, model year change system, and finally surpassed Ford Motor to become the number one automobile

manufacturer in the United States.

The Planned Obsolescence adopted by Earl enabled General Motors to surpass Ford Motor Company and become the world's largest automobile company at that time. The establishment of its professional design department also reflected that design was becoming more and more important in the company. His innovation initiatives, such as breaking the car style that had lasted for many years, were followed and used for reference by many subsequent enterprises, and this means has been used up to now. It was he who established modern automobile design, and also cultivated a group of outstanding designers and companies that followed his ideas.

Apple Inc and consumers

For other enterprises, Planned Obsolescence is also a very effective way to generate income. The regular and regular release of new products can continuously encourage consumers to replace their old products, even if these products can still be used well. This is particularly common in industries that constantly develop new technologies, such as the electronic equipment industry, Apple, which is a firm follower of the planned abolition. By regularly releasing new iPhones, usually in September each year, to give them a more cutting-edge appearance and the highest technology functions, as well as the latest generation of operating systems, many consumers are forced to feel that their iPhones are no longer as easy to use as they once were, taking mobile phones as a typical example, After using it for a period of time, consumers will obviously feel that its running speed and smoothness are slowing down, and the durability of the battery is not as good as before, resulting in obvious aging problems. Apple mobile phones will launch new products every other year, attracting users' attention with their unique and novel design and appearance. Frequent updates of tools have become the norm, which has been fully accepted by users subconsciously. Gradually, consumers will buy and upgrade to the latest mobile phones to keep up with the latest features and trends of the electronic age for the best use experience.

On September 13, 2017, Apple launched its epoch-making mobile phone product, iPhone X. Apple removed the home button that has lasted for ten years

and the fingerprint unlocking method that has lasted for four years, and replaced it with a comprehensive screen design that is almost a whole screen. 'The display area increased by 20% without changing the size of the phone' (Baidu Encyclopedia, para. 2) . As well as the 3D structured light facial unlocking function with long bangs, since then, people no longer need to touch and unlock with their fingers, but simply scan the screen with their eyes to unlock. This is also the iPhone with the highest price, which has set a record high of 999 dollars, but it can not resist the enthusiasm of consumers according to the old times. 'Even it is temporarily out of stock due to the frenzy of buying, so people need to queue up for delivery' (Internet of Things Headlines, para. 1). On September 15, 2021, Apple launched the iPhone 13pro, which will shrink the long bangs that have lasted for four years. 'After disassembling the face ID module of the iPhone 13pro, it was found that its dot matrix projector has a chip area of about 0.46 mm^2 , It is 53% less than before' (ZEALER, para. 2). The smaller one brings more area to display status bar icons, and the latest 120hz dynamic refresh technology to the screen to achieve a smoother display effect and longer service life. On September 8 this year, Apple launched the latest iphone14pro. Apple removed the 5-year bangs design and replaced it with Dynamic Island (Fig 3). All the running background real-time activities will be displayed here. At most, the background real-time activities of two applications will be displayed at the same time, which once again arouses consumers' desire to buy new mobile phones.



Figure 3. Apple's *Dynamic Island*, 2022

For consumers, they also prefer to buy the latest products, as can be seen from the sales trend chart of Apple's iPhone in 2007-2016 (Fig 4). With the continuous release of new iPhone versions and updating of the latest appearance, functions and systems, the number of iPhones consumers have purchased has been increasing year by year, from 1.36 million in 2007 to 234.57 million in 2016. This huge sales leap stems from the planned abolition. The driving force of this phenomenon is the desire to have the latest appearance of mobile phones, experience the changes brought about by the best technology, and have a negative sense of comparison, They worry that if they don't upgrade to the latest

model, they will be left behind by their peers and can't keep up with the trend of technology and the times.



Figure 3. *iPhone sales trend, 2016*

In fact, the trend of science and technology fashion is also the product of a class. On the one hand, fashion means the union of the same class and the commonness of a social circle characterized by it. On the other hand, in such behavior, the boundaries between different classes and groups are constantly broken through. In a society without class differentiation, fashion is difficult to appear, and if the class differentiation is so serious that it blocks the possibility of class boundary breakthrough, it will also be difficult to launch fashion. 'In Simmel's eyes, fashion is a combination of integration and differentiation, which meets the psychological needs of some people in pursuit of universality and great unity' (Wang et al, 2011, p. 94-96). At the same time, fashion meets the psychological needs of others in

establishing differences and expressing individuality. Apple has well grasped this point with the planned abolition. As an electronic product owned by everyone, mobile phones meet the universal needs, while mobile phones with the latest styles and functions meet the personalized and innovative needs of some people. There will always be people who follow the latest products, follow the trend of technology and fashion, and start again and again.

This strategy has had a profound impact on consumers, shaping their behavior and expectations, which has increased the opportunities for consumers to choose appearance and experience technology, which enables consumers to benefit from the latest product innovation, enjoy a higher standard of living, and experience the changes and fun brought by science and technology and design. For example, the rapid development of technological progress in the smartphone industry mentioned above has enabled consumers to use devices that have access to various cutting-edge and leading functions, such as high-resolution, high refresh rate displays, powerful processors with low power consumption, higher pixel cameras, thinner wearing devices, and so on. Shapiro, 'CEO of the Consumer Electronics Association of America, said that the use of new technologies also continues to drive and encourage consumers to update their products' (Yan, H. 2005).

Conclusion

In a word, the Planned Obsolescence has been rapidly integrated into the capital market since its implementation, greatly driving the production efficiency, creating huge profits for American businesses, and solving the contradiction between supply and demand in the social market. On the other hand, the planned abolition successfully awakened people's natural desire for material, and the criterion of judging by practical function was abandoned. 'Consumers began to highlight their status and aesthetics with the style of the surface of the accessories, focusing on the visual "feast"' (Yang, 2020, p. 115).

According to the above product iteration case of General Motors, which successfully got rid of the Great Depression in the United States and replaced Ford Motor Company as the world's largest automobile manufacturer and Apple, and the sales growth chart of iPhone over the years, Harley Earl's Planned Obsolescence strategy has had a huge and far-reaching impact on enterprises and consumers. By designing products with limited life, Earl can bring a steady stream of income to his company, and other companies have followed suit. With the help of this concept, he gradually expanded production, making significant contributions to the sustainable development of his business.

Consumers also tend to buy the latest products, and the sales of iterative products increase year by year. The desire to have the latest and most advanced technology and the fear of being left behind if they do not upgrade to the latest model prompted consumers to buy new products. At the same time, it also increased the opportunity for consumers to choose more products and

experience better products.

As far as commerce is concerned, the conditions and purposes of design have always been the same. For the purpose of how to better, faster and more sell goods, the design concept generated in that era was determined by the social environment at that time, which was consistent with the social conditions at that time. Today, a good design concept has passed the double inspection of time and products, so that today many companies and professional designers still follow Earl's plan to abolish this concept. Harley Earl is worthy of being a genius who has changed the historical process of the automobile industry, leaving a significant mark in the history of world automobile design.

'But at the same time, some changes have taken place more than 100 years ago and now' (Zhang, Y, 2017, p. 84-85). Designers also have more comprehensive and scientific solutions to problems than in the past. In any era, designers are always seeking better solutions to design, and we should also look at this concept with an objective attitude. The society is changing constantly. Designers no longer focus on simply expanding production and promoting economic and social development. Both designers and enterprises are now and will be responsible for spreading culture and society.

They combine business and social responsibility well. 'As a giant in the automotive industry, General Motors is now vigorously designing and developing environment-friendly concept vehicles, whose emissions meet various national environmental standards, mainly including electric vehicles, clean fuel vehicles,

green vehicles and other clean emission vehicles' (Yiche, 2010). 'The electronic product business giant Apple calls for the global supply chain to be carbon neutral by 2030' (Cover News, 2022). All of its electronic products are made from 100% renewable resources in order to protect the global environment. It can be seen that the concept of Planned Obsolescence does not conflict with sustainable design, and enterprises combine them well.

Illustrations

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