

The Promotion of Environment Protection with an Integrated Eco Ecommerce

Roy Tseng

^aDepartment of Industrial Engineering and Engineering Management, National Tsing Hua University, Taiwan

Abstract. There are so many people not aware of the severity of climate change. So when you want to buy some eco products in Taiwan, you will find it difficult. It is because that the environment protection awareness is not in most people's mind. So the market is still not in demand and the cost of production is too high due to the poor sales of eco-friendly products. Therefore, the suppliers didn't provide shop channels. They only supply to the wholesalers. So I came up with an idea to build a eco ecommerce in order to provide customers a well-integrated website which provides many eco-friendly products and environment protection information. By doing so, we can promote environment protection and help those eco products manufacturer sale their product more efficiently and lower their cost.

Keywords. Eco Ecommerce ∙ Business model integration

Number of words. 2025 words

1. Introduction

In recent decades, the climate change problem is growing bigger and bigger. Many celebrities ∙ politicians around the world are calling on people to reduce plastic products. However, there are still not many people aware of this problem. In spite of some people are aware of this problem, unfortunately, few of them really get on their knees and put it into action. So I wanted to build a eco ecommerce in order to provide customers some awesome products which we have already picked for customers.

Nowadays, some eco ecommerce websites are also implementing such idea. For example, Green Point ecommerce and Environmental Protection Administration Executive Yuan. They provide some very useful feedback for customers who chose to buy eco-friendly products, such as reward program ∙ coupon exchange. But there are only few people know this. One study from the Proceedings of the National Academy of Sciences of the U.S. showed "sellers' incentives do not support reducing the footprints unless customers have such information and are willing to act on it." [1] In other words, consumers will make greener choices if you lay out the option. That is to say, there is no enough advertisement in promoting environment protection. The most urgent thing to be done is making a connection between people and environment.

So I built a website which provides various eco products ∙ relative environmental protection news ∙ Facebook post sharing. However, the main purpose of my website is not to gain profit from it. It is to connect people and environment together and trigger

the fire of environment protection awareness from the bottom of their heart. What's more, I want to make 3R("Reduce" 、" Reuse" and "Recycle ") to be a cool job in people's friend zone. Make an environmental protection atmosphere.

In order to emphasize how important it is to build a eco ecommerce, I listed the benefits mentioned in one study in Table 1. [2]:

Benefits	description
Cost savings	There is steady growth in healthy environmental practices in all manner of business ventures. An enterprise that decides to highlight their ecological advance policies, not only helps protect the environment but ultimately improves their company's bottom line.
Improved Public Relations	Companies that emphasize their green policies can gain new clients, as well as gain access to new, unique demographics of like-minded buyers that appreciate and value earth-based policies. By constantly highlighting your eco-friendly changes, your company is likely to attract new consumers.
A Healthier Workplace	Companies that promote a healthier workplace report a 20 percent decrease in the number of sick days used by employees and a decrease in health-related costs
Available Tax Credits	The 2009 economic stimulus plan provided incentives for companies to turn a new leaf – and practice green policies – in the form of huge tax credits. Tax Credits are available for all companies, small or big, and you can easily rake them in if you're willing to go green.
Increased Consumer Demand	Consumers, with so many products on the shelves, have become far more "picky" with their choices. Environmentally minded users check product labels and analyze if a commodity is crafted from recycled materials. Companies can easily tap into this practice and even entice new consumers.

Table 1. Benefits of eco ecommerce (floship.com)

2. Method

In this chapter, I will introduce the behavior model in the As-Is process and To-Be process. I used Visio 2016 software in order to present the process in detail. In Visio 2016, we can create behavior model.

2.1. Behavior Model

In this research, I used Visio 2016 software to analyze our process. We can easily pull out every block and line to present the process. If it is needed, we can also use Visio 2016 to drill down the process.

2.2. As-Is Model

In As-Is Model, I will take the 4p biodegradable plastic bags as an example. Due to the government policy and the market demand constraint. They are usually offered when you are buying a cup of coffee in a convenient store. Except a convenient store that people can get the 4p biodegradable plastic bags, there are no other channels that customers can buy the bags. No customers can really get the merchandise in any offline shop. It is because of the high price of eco products that if the offline shop put them on the shelf and they may suffer from a terrible selling volume. Although there are some sellers selling 4p biodegradable plastic bags online, the required quantity of one transaction needs to be at least 500 bags. The amount of plastic bags is too many for a small family's daily use. However, it is because of the high price of eco products that if the offline shop put them on the shelf and they may suffer from a terrible selling volume. It is not a surprising story, because customers usually choose cheaper products. The following figure is showing this problem. They only provide one in one transaction to the customer. People cannot find any channel to buy, but only get the 4p biodegradable plastic bags in special case.

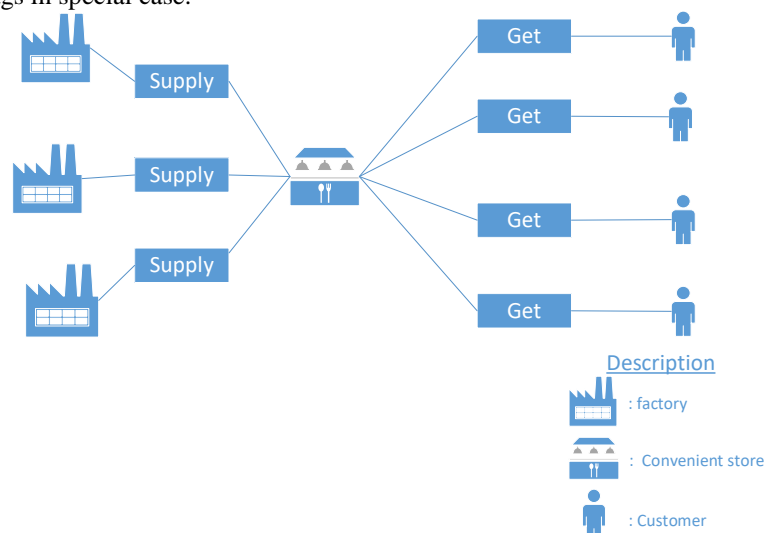


Figure 1. As-Is Model

From Figure 1. We can see there are no offline channels for customers to buy 4p biodegradable plastic bags because of its higher cost. So the urgent thing to be done it to provide an available channel for customers. So in the next section, To-be Model, I will show you how to lower the cost and price, and merchandise it properly.

2.2.1. To-Be Model

In To-Be model, I want to show how the customer could easily buy the merchandise they want. In the To-be model we can see there are much less routes need to be passed. There is only one distribution center between factories and customers. Customers order eco products online 、pay online and receive at home. We can see there are many improved part in the TO-BE model. On one hand, there are less departments and operation process. One the other hand, we have quick response to the customers and we can collect every customer's interest data. By doing so, we can analyze those data to know the customers' preferences and it can help us to make more money in the future.

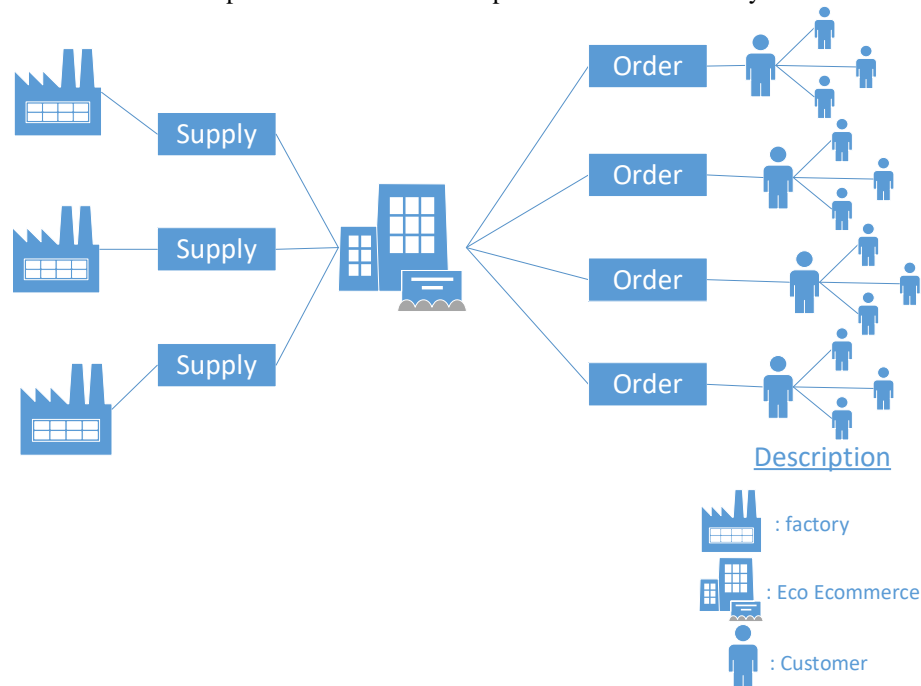


Figure 2. To-Be model

From Figure 2. We can see there is only one eco ecommerce distribution center. It will reduce the total inventory level. Moreover, the customer can order whatever merchandise they like online. It's is very important because customers cannot buy eco products in any offline shop channel the in As-Is model

3. Case Study

In this chapter, I will introduce a company, GRABIO, which produces 4p biodegradable plastic bags in Taiwan. Grabio Greentech Corporation was established in 1999 in the research and development of environmental materials. GRABIO had become a pioneer in Biomass-based plastic in Taiwan ever since. However, they have encountered a big problem. Its production cost is too high and is lack of market. The method adopted to solve this problem is to build a website connected to Community website. I expect people can get whatever environmental protection information and eco products online. In the next section, I will show the website user interface.

3.1. Website

In this section, I will show every functions in my website on by one.

3.1.1. Homepage

In Figure 3, This is the homepage when customer connect to my web.



Figure 3. Homepage mission

In Figure 4. When you roll down the web page, the you can see our mission and story. Moreover, if you want to read more of our story, just click the button”更多關於我們的故事”.



Figure 4. Homepage mission

The second part of my home page is an introduction about the eco products we sell. In Figure5 If you click the button “購買更多商品”.It will jump to the product selection page.

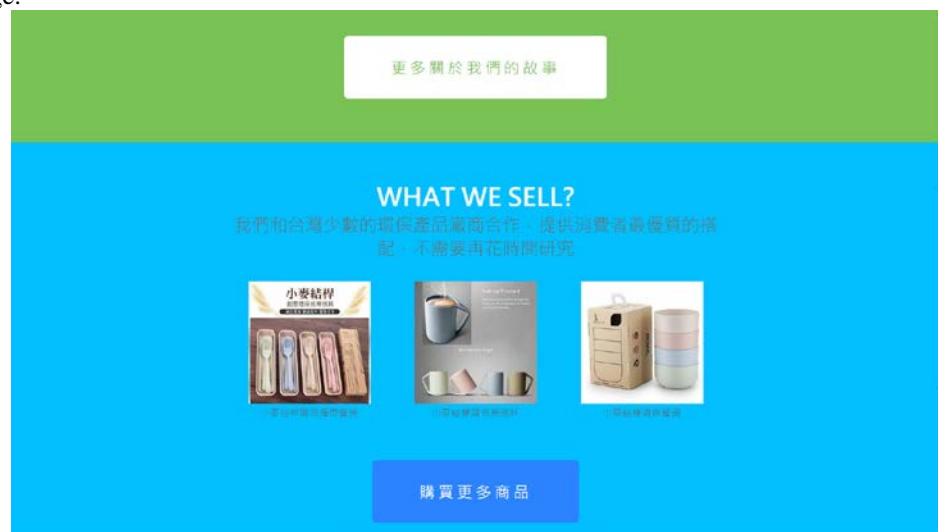


Figure 5. Homepage featured products

The third part of my homepage is a products ranking in Figure 6. Customers can know what product is the most popular. If you click the button “查看更多商品”, then the page will jump to the product selection page.



Figure 6. Homepage ranking

In Figure 7. It is the page "關於我們", if customers agree with our idea, they can click on the button "Share on Facebook". The main purpose of this function is to connect the customers' friend zone and create an environmental awareness atmosphere. Hope this function can help GRABIO gain more customers, and make "environmental protection" a cool daily activity.



Figure 7. 關於我們 community website share button

In Figure 8. When you roll down the page and you can see some relative environment protection information. Each youtube video is featured. The main purpose of this part is to catch the customers' eyes and stay longer. Hope the featured videos

could touch the customers heart and buy our products. Here is a button”環保商品專區”, when customers click on it they will jump to products gallery.



Figure 8. 關於我們 environmental protection news

Next one, Figure 9., is Products gallery customers can view all products here and add them to shopping cart. Each of our product here has its rating that customers can judge it and Each of them has a product description and a price.

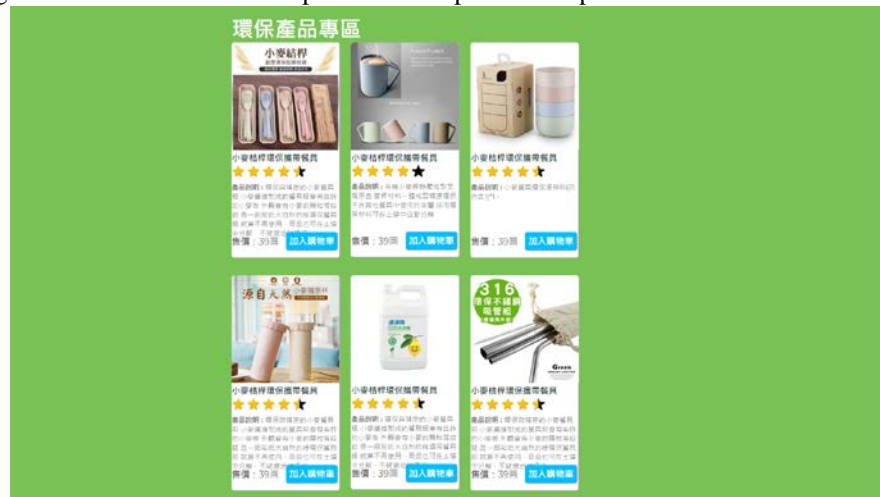


Figure 9. Products gallery

In Figure 10. Members Login and register, customers can login here. If the customer is not our member yet , just click on “尚未成為會員嗎” and the page will roll down to the register section.

會員專區
會員登入

帳號: group8
密碼: ****
登入

尚未成為會員嗎?

會員註冊

使用者帳號:
 密碼:
 姓名:
 電話:
 E-mail:
 行動電話:
 性別:
 生日:
 生日:
☐ I've read the terms and conditions

Figure 10. Members Login and register

In Figure 11. Member profile, If customers is registered, they can click on “會員專區” and the page will jump to member profile.

修改會員資料 登出網站

使用者帳號:	2
密碼:	123
姓名:	嚴冠程
E-mail:	thisisgood@gmail.com
行動電話:	0912345678
地址:	新竹市東區光復路二段101號
性別:	男
身分:	一般會員

Figure 11. Member profile

In Figure 12. Shopping Cart, customers can also choose whatever they like here and add them to the shopping cart.



Shopping Cart

產品型錄		檢視購物車		
產品編號	產品名	定價	輸入數量	進行訂購
1	小麥結稜環保攜帶餐具	\$39	<input type="text" value="1"/>	放入購物車
2	小麥結稜環保馬克杯	\$130	<input type="text" value="1"/>	放入購物車
3	小麥結稜環保餐碗	\$59	<input type="text" value="1"/>	放入購物車
4	小麥結稜環保隨行杯	\$150	<input type="text" value="1"/>	放入購物車
5	清淨海環保清潔劑	\$230	<input type="text" value="1"/>	放入購物車
6	綠色生活環保不銹鋼吸管組	\$210	<input type="text" value="1"/>	放入購物車
7	佳佳環保清潔袋	\$39	<input type="text" value="1"/>	放入購物車
8	沅仕科技環保垃圾袋	\$59	<input type="text" value="1"/>	放入購物車
9	3M環保便利貼	\$99	<input type="text" value="1"/>	放入購物車

Figure 12. Shopping Cart

In Figure 12. Shopping Cart, We can see all the products customers had chosen in this shopping cart page.

產品編號	產品名	定價	數量	小計	變更數量
1	小麥結稜環保攜帶餐具	\$39	<input type="text" value="1"/>	\$39	修改
5	清淨海環保清潔劑	\$230	<input type="text" value="4"/>	\$920	修改
2	小麥結稜環保馬克杯	\$130	<input type="text" value="1"/>	\$130	修改
活動打八折優惠後金額 = 871.2					
退回所有商品					

Figure 13. Shopping cart Check out

4. Conclusion

The main purpose of this research is to help the eco products production company, GRABIO, which is a pioneer in Biomass-based plastic in Taiwan ever since, build a website and attract more customers to join the activity of environmental protection. I illustrated the problems of greentech company is facing and gave the companies a proper method to deal with those problems. In this paper, I also showed the As-Is model and To-Be model to show the whole process flow in the method. In the end, I demonstrated the function of my website to show how I help the company gain more customers. Hopefully, the behavior of people around the world could be changed day by day and the environment of the earth can be better treated.

5. Reference

- [1] Steven C. Isley 、 Paul C. Stern 、 Scott P. Carmichael 、 Karun M. Joseph 、 and Douglas J. Arent, "Online purchasing creates opportunities to lower the life cycle carbon footprints of consumer products" 2016
- [2] Floship, The Benefits Of Eco-Friendly Shipping for Your Ecommerce Business. Retrieved 2018, January 3, from <https://www.floship.com/benefits-of-eco-friendly-shipping/>