

SOSC217 ENVIRONMENT AND BUSINESS DESIGN FOR ENVIRONMENT

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DESIGN FOR ENVIRONMENT FINAL REPORT

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We have chosen the San Miguel bottled beer as our product. We have conducted an in depth study of the making of San Miguel's beer, and wanted to alter parts of the product life cycle to make the bottled beer a design for environment. We think the best way to redesign this product for the environment is under the theme 'Reduce, Reuse, and Recycle'. There is great business opportunity because this project will greatly reduce the resources used and thus reduce the cost of making the bottle and the beer itself. By marketing our image as being environmentally friendly, we can also bring in additional businesses by targeting the environmentally concerned customers. As a result, additional profit will be brought on by the project.

PRODUCT DEFINITION

The product that we have chosen is San Miguel's bottled beer. There are three things that could be redesigned, namely the beer, the container and the manufacturing system. In order to move one step at a time for the betterment of the environment, we have decided to choose one area to focus one: the bottle. The bottle is the container of the beer, and is the means of convenience to our customers. There are interrelations among these.

ENVIRONMENTAL PROBLEMS

We have identified the following key environmental problems associated to the product life cycle of San Miguel's bottled beer.

Waste Generation

Similar to other advanced economies, Hong Kong has experienced rising municipal waste loads. The waste loads produced locally are increasing at a faster rate than population growth. Municipal waste loads have increased by about 50% while the population has increased by about 20% over the past 15 years.¹ In order to reduce waste produced, San Miguel could play a big part in reducing the percentage of glass bottles dumped into landfill every year. From the municipal solid waste, glass is one of the least recovered. Paper and ferrous metal are the major materials recovered.² What about the aluminum cans that beer is frequently put in?

¹ Environment, Transport and Works Bureau (ETWB), 2003, Environment Hong Kong 2003- Waste - Resource Materials and Decision Time, HKSAR, 2003.

² ETWB, 2003, Environment Hong Kong 2003- Waste - Resource Materials and Decision Time,

As you can see from Figure 1, the recovery rate of glass in Hong Kong is only 2%, whilst countries like Australia, Japan and Germany have rates higher than 40%. This shows that there is definitely a lack of effective education and promotion to the public about recycling glass bottles. Good, but it looks like aluminum (non-ferrous) has a high percentage.

Figure 1

Recovery Rates of Common Recyclable Materials (in percentage)					
Place	Year	Paper	Plastics	Metals	Glass
Hong Kong	2003	51%	27%	94% (ferrous metal) 82% (non-ferrous metal)	2% (glass bottle)
Australia	2002	50%	13% (total) 24% (packaging)	69% (Al can) 43% (steel can)	45%
Japan - Domestic	2002	65%	46% (PET bottle)	83% (Al can)	83% (glass bottle)
Japan - Industrial	2000	50%	25%	83%	41% (including ceramic)
USA	2001	45%	6%	35%	19%
Germany	1999	78%	65%	90% (Aluminium) 82% (Tin plate)	83%
UK	2001	38%	7%	43% (Al can) 39% (ferrous scrap)	22%

Source: Environmental Protection Department, The HKSAR Government

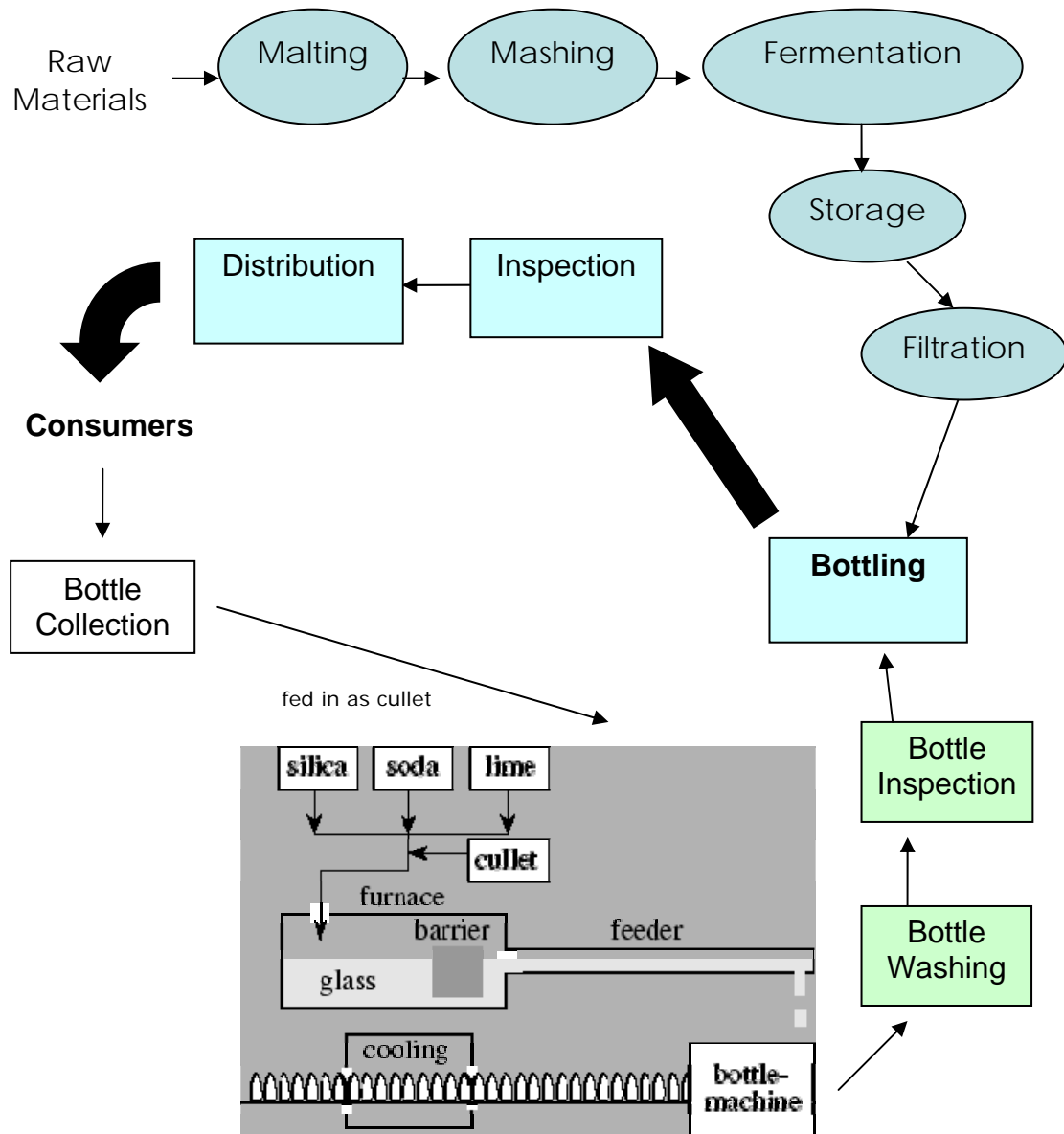
High Energy Consumption – Global Warming

Manufacturing glass bottles uses energy in the extraction and transportation of raw materials, and during processing as materials have to be heated together to a very high temperature. Large amounts of fuel are used and the combustion of these fossil fuels produces carbon dioxide – a greenhouse gas. San Miguel does not produce its own bottles at the moment. The job is outsourced to Coca-Cola Bottlers. However, because the design of the bottle is decided by San Miguel, we have the right to change the shape and sizes of the bottles according to our needs. When we reduce the energy consumption, it is not only San Miguel that benefits, Coca-Cola Bottlers will in turn benefit from the changes. Good

THE DESIGN

In order to minimize the impact to the environment caused by San Miguel's bottled beer, we have chosen one specific focus for our Design for Environment. Our goal in the end is to "Reduce, Reuse and Recycle" as much as possible throughout the Product Life Cycle of the bottled beer.

Figure 2
Product Life Cycle



We have chosen a specific part of the Product Life Cycle to focus on a redesign: the bottle shape and size. Along with a good recycling campaign, we plan to reduce waste production as well as minimize the emission of greenhouse gases into the atmosphere by reducing energy consumption. Let's take a look at the design and the interdependencies in detail:

The Design for Environment, as mentioned before, will be focused on the container. By implementing the “Reduce” part of our 3R model, producing bottles that can weight up to 25% less than the conventional bottles. The height of the “Green Bottle” will be the same as the conventional bottle, but the body diameter will be reduce by 1.7mm due to the thinner glass. There will be a ceramic coating applied to ensure strength, but the entire appearance of the new “Green Bottle” will be very similar to the existing bottles. According to a similar program by Kirin Brewery of Japan, the transport efficiency of these bottles could be up to 12% higher than conventional bottles.³ Good.

Figure 3
Left: Conventional bottle; Right: New “Green Bottle”



Effects on Environment

Nowadays because glass is quite inexpensive and is taken for granted as packaging material, it is a very common material for beverage containers. Glass is made from a mixture of four main ingredients: silica, soda, lime and other additives. San Miguel uses iron to give its glass bottles a brown color. According to research in the UK, glass composes of 7% of UK household wastes.⁴ If we significantly reduce the materials used in glass bottles, we are saving a lot of waste which may be used for landfills. Although glass is inert and not directly hazardous to the environment, it will remain there indefinitely.

On the other hand, recycling is a very important part of our Design for Environment project. Glass can be recycled indefinitely as part of a simple beneficial process, because its structure does not deteriorate when reprocessed. In our case using San Miguel bottles, up to 80% of the total mixture can be made from reclaimed scrap glass, called “cullet”. If recycled glass is used to make new bottles, the energy need in the furnace is greatly reduced. After accounting for the transport and processing needed, 315kg of CO₂ is saved per ton of glass melted.⁵ What happens to the recyclability when you put the ceramic coating on?

If San Miguel cooperates with its bottle manufacturer to redesign the bottle, there will be many other interdependencies for the entire product life cycle. Recycling reduces the demand for raw materials. There is no shortage of materials right now, but they

³ Kirin Brewery Official Website, www.kirin.co.jp (2005)

⁴ Parfitt, J., Analysis of Household Waste Composition and Factors Driving Waste Increases, WRAP, (2002)

⁵ Waste Online, www.wasteonline.org.uk (2005)

do have to be quarried from the earth's landscape. For every ton of recycled glass used, 1.2 tons of raw materials are preserved.⁶ I suppose that doesn't include water and fuel.

From the aspects of delivery and transportation, having lighter and thinner bottles will reduce the amount of energy used to transport the bottles to the retailers. Moreover, less exhaust fumes from the delivery trucks will be released to the atmosphere, creating cleaner air for the society.

INFRASTRUCTURE

Currently, the Hong Kong San Miguel Brewery is located in the Yuen Long Industrial Estate in the New Territories. From the DfE project, we find that cooperation with various parties is utmost important. Here are the tasks we have to do in order to overcome the challenges for this DfE project:

1. Cooperate with Coca-Cola Bottlers for redesign of San Miguel bottles;
2. Cooperate with the HKSAR Government for glass recycling processes inside or outside Hong Kong; and
3. Cooperate with Non-Government Organizations to build social awareness of recycling scheme.

Coca-Cola Bottlers

In 1981, San Miguel Corporation and the Coca-Cola Company formed the joint venture Coca-Cola Bottlers Philippines Inc (CCBPI). In 1997, San Miguel sold Coca-Cola bottles to Amatil but buys back the franchise in 2001.⁷ Now Coca-Cola Bottlers Philippines operates 19 production facilities nationwide. The company exports its bottles to various countries in Asia including Hong Kong. In order to redesign the San Miguel bottles, we must cooperate sufficiently with CCBPI to implement the DfE project. The environment impact must be communicated to CCBPI as this is the most important physical infrastructures that will help the success of our project.

HKSAR Government

In addition to the private recycling plants in Hong Kong, there are in total 14 plants for waste recycling. However, the major problem we are encountering is that from these plants, none of them recycle glass. The main materials that are recycled are paper, metals, wood and plastics.⁸

The 2% glass recovery rate can thus be explained by the lack of facilities provided in Hong Kong. Much of the glass is transported to mainland China for recycling purposes. In the long run, San Miguel could cooperate with the HKSAR Government

⁶ Waste Online, www.wasteonline.org.uk (2005)

⁷ Regaining the Old Magic, www.asiaweek.com/asiaweek/magazine/nations/0,8782,99501,00.html (2001)

⁸ Waste Recycling Statistics (2003), Environmental Protection Department, HKSAR Government

to build a glass recycling plant in the Yuen Long area. This will better facilitate all glass recycling processes in Hong Kong, moderately increasing the recovery rate of glass.

Non-Government Organizations

The most vital part of the DfE task is to collect the bottles from the consumers. In order to succeed in doing this, we must generate enough awareness and incentive for the people of Hong Kong. We have conducted a Consumer Behavior Survey to understand more about what we can do to cooperate with these NGOs.

Consumer Survey

Our group has conducted an online Consumer Survey (Appendix I) in order to understand more about Hong Kong consumer behavior, the San Miguel brand, as well as the people's reaction toward environmental protection projects. We surveyed 126 people with ages between 18 to 35, and our results revealed some degree of resistance toward environmental protection campaigns. Really?

From the results, 92% of the respondents stated that they do not recycle their beer containers after consumption (Question 4). From these respondents, 65% said that it was inconvenient for them, and many respondents stated that because they consume beer in bars and restaurants, they do not know if they have recycled the containers or not. From this we can see that there is a thought of recycling the containers but no action has been taken due to inconvenience and the fact that most beer is consumed in bars and restaurants (55% of the respondents, Question 3).

Although there is much resistance, it seems that from our survey, most people believe that there is a strong advantage in cooperating with Green organizations such as Greenpeace and Friends of the Earth to boost the recycling campaign (Question 9). 73% of the respondents chose the options "Somewhat Effective" or "Very Effective" when asked whether cooperation with Green organizations will be effective.

We also received some insight into what incentive schemes would be useful to San Miguel when implementing the recycling campaign (Question 10). Most of the respondents found that discount coupons (30%) and gifts from the beer company (42%) were best to give them incentive to recycle the containers.

From the results from the survey we can see that San Miguel should cooperate with Green organizations to boost the recycling campaign by stimulating awareness. Also, by putting the logo of Green organizations on the promotional items will make the people feel that this campaign will be much more effective. Also, cooperating with bars and restaurants is vital because most consumers purchase their beer there. By giving them trade discounts by recycling their bottles would be a good incentive. Lastly, San Miguel could cooperate with supermarkets and convenience stores so that when people return empty bottles, they will receive San Miguel products (beach balls, figurines etc.). Because Hong Kong people are very susceptible to collectors' items (e.g. the Hello Kitty craze from McDonald's and 7-Eleven), San Miguel can produce a series of items so people can collect them.

COMPANY ALIGNMENT

Every year, the Chairman of San Miguel makes the same statement in the annual report: “The Company is dedicated to protecting the environment where it operates by meeting and exceeding environmental standards.” San Miguel may have met the environmental standards, but it has not exceeded them by much. Although San Miguel indicates that they wish to be environmentally friendly, nothing has been done in the past to make this happen. The above statement states clearly that their ideal is not only to passively act to protect the environment (by following the environmental standards) but to go beyond that and operate by exceeding the environmental standards.

Having studied the company we understand that San Miguel has been having troubles with their business, undergoing a loss in 2003, and only returning to profitability in 2004. San Miguel has found that beer consumers are very price sensitive and continue to favor low price brands. Continued efforts are thus made in the company to try to reduce the costs. Previously, substantial reductions were achieved in discounts, distribution costs and administrative and selling expenses despite higher sales volume. We believe that redesigning the bottling will be a way to show to the shareholders that they are fulfilling their environmental objectives and are dedicated to protecting the environment and exceed the expectations of environmental standards. It will also be inline with the company strategy to lower the cost of both resources and energy in manufacturing and distribution.

For this DfE project we have chosen to focus on the bottling part of beer. Isn't this a little repetitive? The purpose of bottling beer is to offer convenience to its consumers. One measure that can be taken is to reduce the weight of the bottles. Even a slight reduction in the weight in every bottle can impact the whole process because it saves resources and energy used in manufacturing and distribution stages. Our design is to push for efforts to change the bottles to make the walls of the bottles lighter and thinner. Our development of container packaging has less environmental impact from packaging to shipping to sales promotion. We suggest that San Miguel use large lightweight bottles with an exterior ceramic coating. It weights 475grams, 21% less than the existing conventional bottles, which weighs 605grams. Furthermore, there are other benefits to replacing the conventional bottles with this new design. The height and overall form is smaller due to the thinner class of the new design, it is stronger than the conventional bottles because of the ceramics coating, and scratches are not as visible in the new design. Since it's more durable we can reuse it more too, also saving resources because we can make fewer bottles the next batch.

We found that there has been a recent trend of a decline in the use of returnable bottles. Because it is less costly for San Miguel to make new bottles than to reuse existing collected ones, it has been the practice for many years. However, because of the environmental problems we are facing, we must be responsible as corporate citizens to ensure a sustainable environment. San Miguel prides to adherence to environment standards, and because of this goal, we must take action. Our newly designed bottles will be more durable, meaning that it should last through more cycles of reusing and is also lighter for consumers to return. Our program aims to achieve

two things. First of all, we will educate the consumers and retailers about the environmental problems that we are facing in addition to the solutions of how they can help solve them with us. Secondly, we will give them additional incentives to encourage them to return the bottles to us. Through providing incentives, we hope to instill an environmental sense to them so in the future, even without incentives, they will still bring back the bottles to us.

DESIGN TEAM

Department/Activity	Roles in Integrating Environmental Performance in Existing Activities	Roles in Collaboration on DfE
Human Resources (Vivian)	Communicate to internal staff and make sure everyone is in line with the company's goals and strategies	Aligning the staff to the goals and objectives of the DfE project
Marketing (Brian)	Communicate San Miguel's image to customers, and link them with customers' needs and wants	Marketing the image of "Reduce, Reuse and Recycle" beer bottles to customers and educate them of its importance

Vivian is in charge of the Human Resources section and Brian the Marketing section. Both the Marketing and Human Resources teams send out messages to people inside and outside the company about the DfE project, its objectives and how everyone can contribute to help. The Marketing team of the DfE project will help educate and encourage the consumers on the new bottle design and that they too, could also make a difference to the environment by returning their used bottles to us for rinsing and reuse. The Human Resources team will educate internal San Miguel employees. Their aim would be to use this example of redesigning for the environment to encourage and get every employees of San Miguel to be constantly thinking of ways to redesign their particular part of the contribution to the company to be better for the environment. This is the only way to sustain the goal of striving towards the company's goal of protecting the environment.

The two teams support each other as well as the goals of the company by making sure education is done throughout the company itself and to external parties such as suppliers and consumers. In order to "exceed" the environmental standards in the corporate statement, the Human Resources team must make sure everyone in the company work towards goals set by our DfE team. Everyone must have the mindset to change how things are done toward a greener world. To support the Human Resources team, the Marketing team will bring the message a step further to the consumers. A new set of marketing strategies will be undertaken and the strong message, with the support of internal staff, will be brought to the consumers, making our environmental campaign possible. The primary goal of the marketing team is to educate the consumers and retailers about the purpose of the environmental campaign

and also give incentives to make sure they return the bottles to us. This way, we will be able to succeed in implanting the strategy of “Reduce, Reuse and Recycle”.

HUMAN RESOURCES

“People are our most important asset and are critical to the long term performance of the Company in achieving its objectives in a highly competitive marketplace. Our aim...is to ensure that all employees continue to receive appropriate training and competent support from their colleagues, with emphasis on a strong team spirit to achieve targeted results.”⁹ This is extracted from San Miguel’s annual report 2004 and a goal that San Miguel has been striving for. It is a statement made by the Chairman regarding the emphasis on their employees and training.

The importance of training for San Miguel is not only to educate the staff on the DfE program or the objectives and the changes that will occur as a result of the program. The main reason or importance of the Human Resources role is to make San Miguel’s environmental policy of protecting the environment sustainable. How? We have to make use of this first DfE project that San Miguel will accept and the first step to moving from the environmental policy of ‘meeting’ the environmental standards to ‘exceeding’ the environmental standards (The company’s statement regarding environmental policy: “The Company is *dedicated to protecting the environment* where it operates by *meeting and exceeding* environmental standards.”).

By encourage the employees of San Miguel to constantly think about ways to redesign their part of the processing or supporting role (or ways things are done in their department), and keeping these Designs for Environment projects coming, is the only way to maintain sustainability towards protecting more of the environment and exceeding the environmental standards by much more.

The objectives of the Human Resources training programs are: Firstly, to use this DfE project as an example of how a change in design can have an impact on the whole process and educate the employees on San Miguel’s policies and objectives (also the two company policies this project achieves). Secondly, to educate employees on the role they play in the big picture of the firm. They must understand that little changes matter, without their part then there would be a missing piece of the puzzle. Last and most importantly, use this project as an example to encourage more DfE project suggestions from the employees. This is because they know their daily routines and how to be efficient in them best. After training they should be able to believe that they can truly make a difference to the company and the environment. If employees are able to initiate similar projects, they too, could also help the company achieve multiple objectives for the firm.

In the first training stage, training employees of the current DfE example’s impact on the company, its objectives and what it achieves. Since this is a design for reduce and reuse, we have been able to reduce the costs along with increasing environmental friendliness, thus making it an even better project example for San Miguel’s employees to follow. San Miguel has found from previous experience that beer is a price sensitive product and thus made an objective to cut costs. Along with protecting the environment, this project will also reduce the costs of making and distributing the product. Since this part is very informative and quite standardized (every employee could receive similar training to save costs), San Miguel could use leaflets,

⁹ *San Miguel Annual Report 2004*, San Miguel Brewery Hong Kong Ltd.

newsletters, etc. to spread the message. Much emphasis at this stage should be on the actual policies that the project tries to achieve. Every employee should be aware and thinking about the company policies and objectives and working towards making them happen. Question and answer sessions should also be conducted by supervisors to make sure every employee understands and all questions are answered.

In the second training stage, educating employees on the role they play in the big picture of the firm. The main emphasis here would be to increase the employees' morale by telling them that each of them play a part in a much bigger role. Each of them is important in the firm, and such simple ideas as 'reducing the size and weight of the bottles' could turn out to contribute a great deal to the firm's profits and goals. This is now the objective of your DfE and is rather a technical innovation—how are the employees to be involved in making this change in operations and marketing for example? Also, we must make sure that we convey the message that if these simple ideas create profit for the company, they will in the end benefit from it, forming a cycle of profit-generation. For example, in Cathay Pacific Airways, the "Service Straight from the Heart" (SSFTH) works as a good model for us to improve our staff morale to encourage them to take the initiative to work towards the company's goals. The model states that when SSFTH is implemented, customer satisfaction goes up, resulting in profits and growth for the company, and in turn boosting employee satisfaction from profit-sharing and bonuses.¹⁰ When employee satisfaction increases, SSFTH will be implemented better yet again. Thus when transferring this model to San Miguel, we could educate the employees as follows:

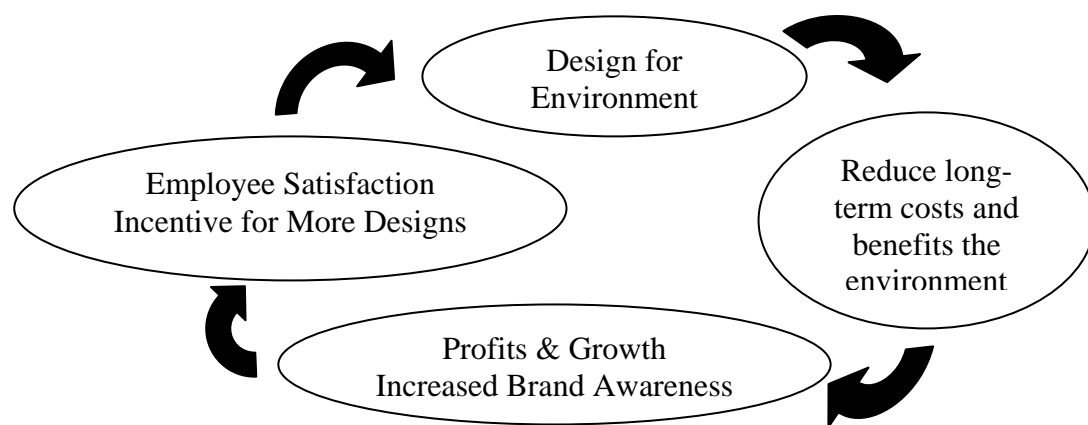


Figure 4 Employee Satisfaction Model

We should focus on the individual differences in their daily roles, thus the training should be done in small groups consisting of employees doing similar tasks. Furthermore, they should be trained by their supervisors or a managing role over a small group of employees because they would understand best each subordinate's daily routines. The supervisors would then be trained by their managers and also the Human Resources team to facilitate understanding and the focus. After the training programs, the employees should be able to understand the direct linkage between their tasks and the profit-generation of the firm as well as how they as individuals play a part in the big picture. They should understand their importance to the company as well as the company's importance to them. The relationships must be very clear to

¹⁰ *Service Straight from The Heart*, Cathay Pacific Induction CD-ROM 2004

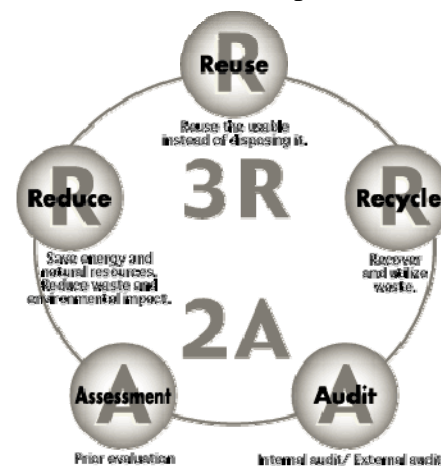
them in order for them to take part in any sort of idea generation and dedication to our new campaigns in the future as well as this specific DfE project. They should be more motivated and play a more active role in the DfE project because they make a difference.

The last stage would have the purpose of integrating what they have learned in the previously two stages to encourage participation in such projects and support employees in producing new ideas and new projects for the firm to bring San Miguel sustainability. The final stage should be an ongoing encouragement throughout all of San Miguel. Bi-weekly meetings should be held with supervisors and managers about new ideas generated of DfE projects by employees and on the implementation of them. San Miguel should offer monetary rewards to employees with new ideas to reduce environmental impact (and a bonus for achieving other company objectives) and those who offer to support and contribute greatly to these projects. This is clearly stated in the Employee Satisfaction Model previously. We must remember that constant new ideas are the key to sustainable growth in environment protection.

The first and second stage training should be done for all new employees joining the firm. This is especially important because new employees are not used to their daily routine yet and thus it would be easier for them to think of questions such as “why not?” that could potentially lead to new ideas and help San Miguel. The final stage of meetings should be reinforced and done in an ongoing basis to keep the employees focused and reminded of the DfE objectives and actively making use of the first two stages, because only the final stage will be able to generate visible, measurable results for San Miguel.

Assessment and Internal / External Audit

Apart from the 3R model that we will promote to the consumers, we will also implement a 2A policy within the organization. This consists of Assessment and Audit (Figure 5). San Miguel should conduct an environmental audit, and disclose information in environmental reports that include their environmental policies and necessary costs for environmental protection. This way the external parties such as the government, the stakeholders and consumers will know more about what San Miguel is doing to help the environment. Many beer manufacturers in Japan, such as Kirin and Sapporo, have been issuing environmental reports and their successes are visible.¹¹ By cooperating with the Environmental Protection Department of the HKSAR Government, San Miguel could conduct external audits on its environmental practices so that the government could understand more about what San Miguel is doing to help the environment and also establish a good reputation for being environmentally friendly. When cooperation with government is increased, there will be many other ways they can cooperate, such as the setting up glass recycling plants as mentioned before.



¹¹ Kirin Brewery, www.kirin.co.jp (2005)

Reference to beer bottle recycling.

This green organization is quite good, but you have made your DfE objectives quite clear. Therefore how are the employees to be involved in it?

Figure 5: 3R, 2A Model

MARKETING

Marketing Opportunities:

San Miguel has done a very good job in marketing its products in Hong Kong. The brand has reached its target consumers very well through its various promotion and advertising tactics. With the launch of our “environmentally friendly bottles”, San Miguel will be one step further in “exceeding environmental standards” and creating a greener environment for all of us. Because of this new initiative, a set of new marketing plans must be put in place to push this new design into the market and make customers aware of the implications of this new design. Customers must also be educated to reduce, reuse and recycle the bottles. Because this entire design process will require the assistance and cooperation of the consumers and distributors themselves, we must communicate this to them the best we can.

In Hong Kong, the market for environmentally friendly beer is currently very minimal. Because the beer importers and manufacturers in Hong Kong do not feel the need for the introduction to environmentally friendly drinks in general. However, the introduction of environmentally friendly bottles could be the first step toward changing the views from the mass market. In Japan, for example, Kirin Brewery produces an Environment Report every year to show their investors and customers how they are putting efforts into creating a better environment for the future generations. They stress the fact that “Corporation is a Member of Society”, making people aware that they care for the society as a corporate citizen should. From this example, we can see that developing environmentally friendly products is definitely an emerging trend that Hong Kong is starting to adopt.

Here are the marketing tactics we will be using as San Miguel:

Product:

Our product portfolio will remain the same as before, having no changes to the brands or contents of the bottles. The only thing that will have changed is the shape and size of the bottle in terms of material usage. The walls of these “Green Bottles” will be thinner and lighter, reducing materials used. The transportation costs will be lowered due to the new slimmer design, thus reducing CO₂ emissions to the environment.

Price:

Because the content of the bottles have not changed at all, we do not have any intention of changing the price of the beer at this stage. Because of the price sensitivity of our consumers, our competitive prices cannot be increased in any way. We may, however, reduce the price of our products through trade promotions to support our “Green Bottle” campaign.

Promotion:

Promotion is the most important part of our marketing strategy. Because we must educate our consumers and the general public about the “Green Bottle” initiative, we must make sure our communication campaigns direct this message to them. Also, apart from promoting our “Green Bottles”, we must also set up a “Recycling Campaign” to ensure that the bottles will be returned to us. By making sure that consumers are aware of this campaign, we must provide more incentives for them.

1. *Trade Promotions*

We will set aside an amount of our promotion budget towards trade promotions. Because we have already reduced our production costs from reducing the input materials to the bottle in the first place, we will have sufficient budget to facilitate trade promotions. Because we have decided to use the “Green Bottles”, we must communicate its benefits to our consumers. Through trade promotions, we can communicate that the “Green Bottles” are inexpensive. By selling in 6-packs and 12-packs, we may significantly reduce prices so their purchase intentions will be increased. Consumers will see that they are buying the same product but in a new packaging. The best incentive for these price sensitive consumers is to reduce the price through periods of promotion. By liaising with our distributors and bulk consumers (restaurants and bars), we will be able to give them deals in return for better shelf space and also our “Recycling Campaign”. Because our “Recycling Campaign” is a big part of our DfE, we must make sure there is enough incentive for our distributor and consumers.√

In the UK, many people set aside glass bottles for recycling and either participate in curbside collection schemes or take them to a bottle bank. The first bottle banks appeared in 1977, and there are now roughly 50,000 on some 20,000 sites around UK, usually located at civic amenity sites and supermarkets.¹² There is even a website (www.recyclenow.com) where people can locate their nearest bottle bank through the recycle bank locator. The HKSAR Government has in recent years increased the number of waste collection and recycling spots. These are located in shopping arcades, outside supermarkets and in large housing estates. However, more recycling bins should be placed in residential areas as many consumers do not take the initiative to walk to the recycling bin down the street to throw away their glass bottles. San Miguel can communicate with the government to set up collection boxes in residential buildings, pubs and restaurants, companies, schools and other organizations so that glass bottles could be easily collected. As an incentive, San Miguel should also cooperate with 7-Eleven and Circle K, large distributors of bottled beer, to set up a redemption scheme as mentioned before in “Consumer Survey” section. In Hong Kong, Vitasoy has set up a very good bottle reuse scheme since decades ago. When one returns a Vitasoy glass bottle to the store, they would receive 50¢ in return. San Miguel could use a similar scheme at the very beginning so that people are aware of this scheme and continue to return the bottles as a habit.√

2. *Advertising*

In order to fully promote our “Green Bottle” and “Recycling Campaign”, we must have enough advertising to communicate our ideas. Our advertisements must bring out the fact that the quality of our beer has not changed at all, but because of our care for the environment, we have decided to repackage the beer so it is more environmentally friendly. We should also communicate the fact that our “Recycling Initiative” will reduce waste production and the consumers/retailers will benefit from this “Recycling Initiative” through trade promotions and coupon redemption.

¹² Waste Online, www.wasteonline.org.uk (2005)

San Miguel has always communicated a young brand image to consumers in Hong Kong. The brand attributes that San Miguel had was always a young and carefree image suited for youngsters in Hong Kong. We should take this brand equity and add to it by instilling the concept of environmental friendliness. Currently many organizations such as Greenpeace and Friends of the Earth are educating children from a very young age. Although San Miguel's target is not children, we may still use our young brand image to instil the concept of environmental friendliness to the young adults. This will create a synergy to help boost our overall brand image and corporate responsibility.√

3. *Wild Day Out – San Miguel's annual Marketing Campaign*

To compliment the advertising, San Miguel's annual Marketing Campaign "Wild Day Out", a music concert involving many superstars across Hong Kong, China and Taiwan, will be a very good vehicle to introduce our new initiatives. Because this event attracts thousands of young San Miguel consumers, we can change the theme to "'Green and Wild' Day Out", communicating the emphasis San Miguel puts in a better environment for future generations. We can cooperate with non-government organizations such as Green Peace and donate a portion of our revenues to them in support of a greener world. Here we will be able to promote our new "Green Bottle" as well as our "Recycling Initiative", where everyone would be able to participate in during the event by making sure all bottles consumed during the event will be placed into recycling bins located in the venue so all bottles will be reused or recycled at the end.

Distribution:

As mentioned before, our "Recycling Campaign" requires the cooperation of our distributors. Our distributors include retailers such as supermarkets and convenience stores as well as bulk consumers such as restaurants and bars around Hong Kong. We will cooperate with the government to install more recycling bins at supermarkets and provide incentives for bars and restaurants to return the bottles to us. In order for them to take the initiative to walk the extra mile for us, we will introduce trade discounts calculated per bottle returned. For example, if a restaurant returned 500 bottles in a month, we could give them a 5% discount on their next purchase. We could also give supermarkets the option of joint advertisements, fully paid by San Miguel, so that their name would be put onto our advertisements for the "Recycling Campaign". More people will go to their stores to recycle our bottles, and thus more people will go to their stores to buy products.

APPENDIX I

Consumer Survey

Business and the Environment are interrelated parts of our Society. We hope to understand more about the consumption behavior of beer in Hong Kong in order to facilitate a better Design for the Environment. Please take some time to fill in the survey below. Thank you very much for your cooperation.

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Age: ____

Gender: Male ____ Female ____

Do you drink beer? Yes ____ No ____ (If No, "Thank you for your time.")

1. Which brands of beer do you drink?

Heineken ____ Guinness ____ San Miguel ____ Blue Ice ____ Blue Girl ____
Budweiser ____ Tsing Tao ____ Löwenbrau ____
Other (please specify) _____

2. Do you usually purchase beer in cans or bottles?

Cans ____ Bottles ____ Both ____

3. Where do you usually purchase beer?

Supermarket ____ Convenience Store ____ Bar ____ Restaurant ____
Other (please specify) _____

4. Do you recycle the beer containers?

Yes ____ (If Yes, please skip question 5) No ____

5. What is deterring you from recycle the beer containers?

Not convenient ____ Not necessary ____
Other (please specify) _____

6. If there was a more convenient way to recycle your beer containers, would you recycle it?

Yes ____ No ____

7. If you received an incentive (e.g. discount coupons) after you recycle your beer containers, would you recycle it?

Yes ____ No ____

8. Have you volunteered to be a member/helper for any Green organizations, such as Greenpeace, Friends of the Earth etc.?

Yes ___ (If Yes, please specify) _____ No ___

9. If a beer company cooperated with a Green organization to implement beer container recycling, how much more effective do you think it will be?

Very Ineffective ___

Somewhat Ineffective ___

No Difference ___

Somewhat Effective ___

Very Effective ___

10. What incentive scheme would give you most incentive to recycle beer containers?

Cash back ___

Discount coupons ___

Point redemption scheme ___

Free gifts from Beer Company ___

Free gifts from other parties ___

Other (please specify) _____

* * * * *

Thank you very much for you time. Your information is very important to us and all the information will be private and confidential. Thanks again for your help.

Dear Brian and Vivian: You easily win the prize for the most improved group. The lead section on industrial ecology is particularly impressive. There is a bit of a slip up when you don't revise the beginning of the middle section and repeat some things said previously and introduce strategy concerns that could have been placed better at the beginning. The green organization section is done very well except the focus on the DfE project itself is lacking. That focus is regained in the final marketing section. Despite, these minor hitches, a very impressive job.

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