



# **GTPP RESEARCH COMPETITION & AWARD 2014**

## **TECHNOLOGY AND SUSTAINABILITY**

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# Acknowledgements

Our heartfelt thanks to Dr. Nancy J. Needham & GTTP's Global Partners



We would like to express our sincere gratitude to GTTP and its global business partners. Our team would not have the precious opportunity to join the International Conference for Travel and Tourism teachers and students without their generous and unceasing support for this global programme.

Our research project would not have succeeded without the valuable advice and inspiring insights provided by the following parties.

## Special thanks to:

- *Ms. Chammy Lau, the Director of GTTP Hong Kong*
- *Mr. Hau Chi Keung, Director of the Risk & Environmental Management, Ocean Park Corporation*
- *Ms. Phoenix Hau, Assistant Environmental Manager, Finance & Administration, Ocean Park Corporation*
- *Ms. Holly Lai, Environmental Officer, Finance & Administration Division, Ocean Park Corporation*
- *Mr. Terry Wong, Public Affairs Officer, Sales and Marketing Division, Ocean Park Corporation*
  
- *Mr. Au Chun Keung, Principal, Cheung Chuk Shan College*
- *Mr. Patrick Lui, Cheung Chuk Shan College*
- *Ms. Kaitlin Elizabeth Trowbridge, Cheung Chuk Shan College*



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# Case Summary

World Tourism Organization defines sustainable tourism as taking full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities. International tourist arrivals worldwide are expected to increase by 3.3% a year from 2010 to 2030 to reach 1.8 billion by 2030, according to UNWTO's long term forecast Tourism Towards 2030. With an ever-increasing number of tourist arrivals, technology plays a more and more important role in improving and achieving better sustainability in the tourism industry.

As Hong Kong is the Asia's World City with a total visitor arrival exceeding 54 million in 2013, the Hong Kong Government and community are the leading roles to strike a balance between economic growth and better social and environmental quality. At the end of 2013, the Hong Kong government completed the Assessment Report on Hong Kong's Capacity to Receive Tourists. It suggested that the arrival of visitors would be over 70 million in 2017 and exceed 1 billion in 2023. Despite the fact that Hong Kong government has been utilizing more space to develop tourism facilities in the small and densely populated city, the challenge of overcrowding with a large number of visitor arrival continues to affect the local community, economy and environment. In order to solve the problem, better planning in development of destination is needed. Therefore, sustainable development plays a vital role in Hong Kong.

In 2012, according to the Theme Index of the Global Attractions Attendance Report, Hong Kong Ocean Park ranked the fourth among 20 amusement/theme parks in Asia-Pacific region. It shows that Ocean Park has a good popularity not only in Hong Kong, but also in the world. As a local amusement park with 37 years of history, it has been adopting various sustainable practices in operation and infrastructure design with an incorporation of technology to provide better guest experience and be more eco-friendly. For example, it fully utilizes the fact that most visitors use smart phones and develops different tools such as mobile application and QR code display to disseminate updated information, educate visitors about environmental conservation and increase interaction with visitors. More detailed examples can be found in the report.

# Chapter One: Introduction

A destination may be attractive due to its physical or human resources. Physical resources are based on features of natural environment of a place. Human resources can be divided into cultural attractions and man-made attractions. Tourists are attracted to visit the destination and with the large flow of tourist, the destination can earn revenue for further tourism improvement, enhancing the image of the destination. As the popularity of the destination has been growing, there will be more and more tourists coming in, it may reach or even exceed the carrying capacity of the destination.

	2013	vs. 2012
Total visitor arrivals	54 298 804	+11.7%
- Overnight arrivals	25 661 072	+8.0%
- Same-day arrivals	28 637 732	+15.3%
Average hotel occupancy rate	89%	No change
Average achieved hotel room rate	HK\$1,447	-2.8%
Average length of stay of overnight visitors	3.4 nights	-0.1 night
Overnight visitor per capita spending	HK\$8,123	+3.9%
Total Tourism Expenditure Associated to Inbound Tourism	HK\$343.1 billion	+15.7%

Source: Hong Kong Tourism Board

According to the World Tourism Organization, Tourism carrying capacity is defined as “the maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic, socio-cultural environment and an unacceptable decrease in the quality of visitors’ satisfaction. Or in other words, Carrying capacity is the maximum number of people who can use a destination without unacceptable changes in the environment and enjoyment gain by the visitors. Huge amount of people may harm the environment, the nature of the place and the local residents, causing negative impacts to the destination in social, economic and environmental aspects.

Talking about the number of visitors from around the world received by Hong Kong in 2013, the number exceeded 54million and had an increase of 11.7% over 2012. Mainland China continued to be the largest visitor source market with 40.7million arrivals accounting for 75.0% of Hong Kong total arrivals.

At the end of 2013, the Hong Kong government completed the Assessment Report on Hong Kong's Capacity to Receive Tourists. The assessment suggested that, the arrival of visitors would be over 70million in 2017. Despite the fact that Hong Kong government has been utilizing much space to develop tourism facilities in the small and densely populated Hong Kong, Hong Kong would still have a chance to get overcrowded. In order to ease the situation, better planning in development of destination is needed. Therefore, sustainable development should be adopted.

## What is sustainability?

*“Sustainable Tourism takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities.”*

*- World Tourism Organization (UNWTO)*

In a more conceptual way,

- Sustainable tourism development guidelines and management practices are applicable to all forms of tourism in all types of destinations, including mass tourism and the various niche tourism segments.
- Sustainability principles refer to the environmental, economic and socio-cultural aspects of tourism development, and a suitable balance must be established between these three dimensions to guarantee its long-term sustainability.
- Sustainable tourism development requires the informed participation of all relevant stakeholders, as well as strong political leadership to ensure wide participation and consensus building. Achieving sustainable tourism is a continuous process and it requires constant monitoring of impacts, introducing the necessary preventive and/or corrective measures whenever necessary.
- Sustainable tourism should also maintain a high level of tourist satisfaction and ensure a meaningful experience to the tourists, raising their awareness about sustainability issues and promoting sustainable tourism practices amongst them.

A sustainable tourism should:

1. Make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity.
2. Respect the socio-cultural authenticity of host communities, conserve their built and living cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance.
3. Ensure viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation.

## Factors affecting the sustainability of a destination

Sustainable tourism at a destination is dependent on the maintenance and good management of its attractive assets. In non-urban areas, the assets will primarily be geological, natural and/or cultural, frequently of a sensitive nature, liable to damage or destruction by uncontrolled or excessive tourism flows.

Any visitor destination must be concerned by two major factors:

- The number (and type) of tourists that come to the destination
- The movement and behavior of the visitors at and within the destination

Besides, there are other factors (e.g. Hong Kong):

Factors	Example
<b>Economy</b>	Expenditure on primary, secondary and tertiary education as a percentage of GDP
<b>Health and hygiene</b>	Deaths per 100,000 population due to diseases of the respiratory system
<b>Natural resources</b>	Quantity of municipal solid waste
<b>Society and social infrastructure</b>	Living space per each person
<b>Biodiversity</b>	Area of Hong Kong of high terrestrial sites
<b>Mobility</b>	Average travel distances
<b>Environmental quality</b>	Quality of carbon dioxide emitted per year
<b>Leisure and cultural vibrancy</b>	Number of recorded cultural and historical sites

The factors are also the guidelines for sustainable development. Every factor is varying from different countries. The common ones include:

- Good infrastructure, e.g. communication and schools, hospitals
- Effective land use planning avoids long-distance commuting
- Effective transport system avoids traffic congestion and maintain good air quality

As Hong Kong is a member of the global village and for the benefit of ourselves, we should develop Hong Kong into a sustainable destination in the world. The Hong Kong Government and the community are the leading roles to strike a balance between economic growth and better social and environmental quality. A sustainable city must be done by the joint effort of them:

- Find ways of economic growth
- Improve quality of life by reducing pollution and waste
- Meet our needs without damaging the prospects of future generations
- Protect the environment and preserve common resources

For example, the Council for sustainable development of Hong Kong was established in 2001 and sustainability assessment and sustainable indicators were set and aim for future development as a result. We can observe that the government had put the sustainable development of Hong Kong as one of the important factors which may affect the future development and the whole sustainability of Hong Kong.

## **Technology in tourism industry**

In recent years, there are more companies in tourism industry implies technology into their management and reservation system etc. For example, some airlines, hotels or even travel agents. They used technology for further improvement and achieve the aim for sustainable development.

For example, the Computer Reservation System (CRS) is one the technology that has been implied in the tourism industry. It is the key link between the airline computer (which controls all the selling of seats on the airline flights) and the travel agents. It can also act as a provider of information like price of air tickets and help the travel agent administer the flight with computerized itinerary printing and ticketing. The computer holds a great deal of information and needs to be kept permanently up-to-date since new bookings; cancellations and travel arrangements are constantly changing.

In some cases, the companies also used technology to sell their products to the customers. Just like a hotel selling different types of rooms and travel agents selling different kinds of travel packages online. It is beneficial for both tourism services provider and customer by using technology in selling or purchasing the tourism products. As a result, the companies are more likely to use technology for introducing their product.

In other words, in the technology soaked society, it is very common to see people using the electronic gadgets. With the improving techniques, the companies carried out lots of investments in order to gain profit from the customers. It is also become obvious in the tourism industry about the selling and purchasing products For example, the companies have put their products online and customers can buy them anywhere pay for it directly. It further reduces the time of face-to-face communication. More importantly, customers can compare different product on different websites in order to save money and get a best product.

## **How does technology influence sustainability?**

For more than 20 years, sustainable development has been advocated as a way of tackling growing global environmental and social problems. The sustainable development discourse has always had a strong technological component and the literature boasts an enormous amount of debate on which technologies should be developed and employed and how this can most efficiently be done.

The mainstream discourse in sustainable development argues for an eco-efficiency approach in which a technology push strategy boosts efficiency levels by a factor 10 and more in industrialized and developing countries. A minority argues for a socio-cultural lifestyle switch, relying on new values, quality of life. However, that the articles, books and policy debates on sustainability seldom explicitly draw in a discussion of the nature of technology, how technology influences and is influenced by society, and what this implies for sustainable development.

The mainstream interprets technology as neutral and instrumental: technology is no more than an instrument to reach a goal; it cannot be judged on its intrinsic characteristics, only on its use. The alternative view often builds on an autonomous and substantive interpretation of technology: technology is an autonomous power that fundamentally reshapes our culture.

In many countries, the environmental conservation is the major concern of sustainability. Therefore, they used many techniques to help them to achieve the aim. For example, they may use the renewable energy like wind and solar power for the electricity supply in order to minimize the pollution. Moreover, some countries have applied new investment in transportation to maintain an efficient and cheap transports system in turn saves fossil fuels. In recent years, the electric vehicles are common to find in many countries and the government has promoted it to the citizens. It is more environmental friendly and it really helps the environment of a destination.

Besides, with the improvement of space mission, the bar code is further promoted and it may help save the use of paper in different industries. It also brings benefits to the environment so as to achieve sustainable development.

# Chapter Two: Case Selection

## -Ocean Park Hong Kong

According to the International Association of Amusement Parks and Attractions (IAAPA), a theme park is ‘an amusement park that has themed attractions, be it food, costumes, entertainment, retail stores and rides. And among the 7 types of theme park, Ocean Park Hong Kong can be named as a Nature-type theme park, which attributes animals, floral displays, marine life, and horticultural gardens.



### Example in Hong Kong – Ocean Park

Ocean Park is one of the theme parks in Hong Kong. And it is the only local-brand theme park. It was a Paris farm originally. Ocean Park was officially opened in January 1977 by the then Governor of Hong Kong, Sir Murray MacLehose. It has 37 years of history. Opening for more than 30 years, over 100 million guests have visited Ocean Park and over 5 million guests visit Ocean Park each year.

In 2005, Ocean Park adopted the Master Redevelopment Plan to build the Park into the world’s best marine-based theme park, doubling the amount of animal and ride attractions, from 35 to over 80, and firmly establishing itself as a world-class, must-see landmark that will further strengthen Hong Kong as a premier tourist destination. In 2006, Ocean Park was named one of the “10 Most Popular Amusement Parks in the World” in Forbes.com. And in 2007, Forbes Traveler ranked Ocean Park as one of the “50 Most Visited Tourist Attractions in the World”.

Moreover, in 2012, Ocean Park Hong Kong secured the prestigious 2012 Applause Award, the most significant recognition within the global attraction industry, as well as three Brass Ring Awards from the International Association of Amusement Parks and Attractions.



In 2012, according to the Theme Index of the Global Attractions Attendance Report, Hong Kong Ocean Park ranked the fourth among 20 amusement/theme parks in Asia-Pacific region. It shows that Ocean Park has a good popularity not only in Hong Kong, but also in the world. Among all the tourist attractions in Hong Kong, Ocean Park is at the third position, which is even higher than Hong Kong Disneyland.

	<b>PARK, location</b>	<b>change</b>	<b>2012</b>	<b>2011</b>
1	TOKYO DISNEYLAND Tokyo, Japan	8.5%	14,847,000	13,683,000
2	TOKYO DISNEY SEA Tokyo, Japan	8.5%	12,656,000	11,664,000
3	UNIVERSAL STUDIOS JAPAN Osaka, Japan	14.1%	9,700,000	8,500,000
4	OCEAN PARK Hong Kong SAR	6.9%	7,436,000	6,955,000
5	EVERLAND Gyeonggi-Do, South Korea	4.3%	6,853,000	6,570,000
6	HONG KONG DISNEYLAND Hong Kong SAR	13.6%	6,700,000	5,900,000
7	LOTTE WORLD Seoul, South Korea	10.4%	6,383,000	5,780,000
8	NAGASHIMA SPA LAND Kuwana, Japan	0.5%	5,850,000	5,820,000
9	OCT EAST Shenzhen, China	7.9%	4,196,000	3,890,000
10	YOKOHAMA HAKKEIJIMA SEA PARADISE Yokohama, Japan	3.1%	4,050,000	3,930,000

Apart from offering entertainment for the visitors, Ocean Park is also dedicated to conserving the animals. It first gained the accreditation from the Association of Zoos and Aquariums in 2002. And in 2013, Ocean Park gained the accreditation for a third successive five-year term, making it as the only animal facility outside the Americas to earn this important industry recognition and validation of superior animal care.

However, with its long history of development, what makes the Ocean Park succeed to sustain a balance in sustainable development? Are there any difficulties in adopting sustainability? How can the Park utilize technologies in adopting sustainability? We are interested to know and therefore we have chosen Ocean Park Hong Kong to be the example in Hong Kong.

## Information Collection - Web research

According to the Ocean Park's website, Ocean Park's commitment to sustainable management is defined as its ability to direct the course of a company, community, organization or country in ways that restore and enhance all forms of capital such as human, natural, manufactured and financial to generate stakeholder's value and contribute to the well-being of current and future generations.

Ocean Park achieves sustainability through several practical terms:

- Using fewer resources in a more efficient way
- Conserving energy
- Reusing/ Recycling waste
- Consideration of clean, renewable, energy technologies
- Reducing the impact on the environment

Life Cycle Costing- considering both the capital and operational costs when evaluating solutions

Moreover, in order to facilitate better planning in achieving sustainability, Ocean Park has set up the Ocean Park's Risks & Environmental Management Office in 2001. It aims to provide professional services to the Park on all matters relating to the environment, risk management as well as health and safety. Besides enhancing, coordinating and increasing awareness about Ocean Park's existing sustainability initiatives, they also act as experts, facilitators and advocates in moving new sustainability opportunities forward within the Park and in the Park's relations with the public.

Due to its ongoing development, Ocean Park has recognized the direct and indirect impact of its development brought to the environment, encouraging them to shoulder the responsibility in protecting the environment. Ocean Park is committed to a program of continuous improvement to minimize the environmental impact and carbon emission by upgrading relevant system and viable installations, educating staff and suppliers and investing in design of new projects and products. Also, a carbon reduction plan is developed which aims to reduce the carbon emission by 2021/2022.

## Information Collection - Site visit

In order to further facilitate our case study, we visited the Ocean Park on 22 April 2014. It was a nice trip that we found there were a lot of facilities and devices that are in line with the principle of sustainability and technology.

The elevator will be out of service so as to save energy. It helps conserve energy.



It

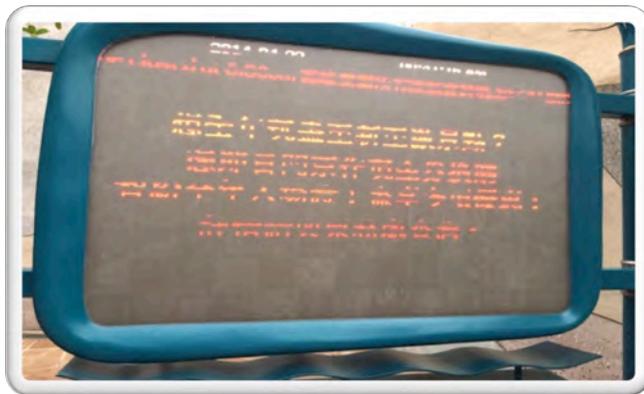


Ocean Park provides rubbish bins for visitors to distinguish and group the rubbish into the correct rubbish bin. It facilitates the work of recycling of plastic bottles and paper.

The board shows the map of the park, it locates the position of every rides and facilities. It does not only improve convenience to the visitor, but it also reduces the reliance on paper map in providing the information to visitors.



It is an electronic notice board. It shows the schedule, venue of parades. It also helps the park to inform the visitors in a quicker and environmental friendly way. Technology has been applied to reduce the use of other resources (paper) in telling visitors some information.



The conservation kiosk offers every visitor an opportunity to know more about conservation and thus to raise people's awareness on protecting our environment in an educational way.



This electronic board shows the information about conservation in Asia and users can interact with it by touching it. Technology has been applied to facilitate the interaction between visitors and the electronic device. Also, with the use of technology, it greatly reduces the use of paper resources in promoting the importance of conservation to the visitor.



Ocean Park has tried to apply technology in the facilities. Instead of placing a donation box, the park makes a good use of octopus system for the visitors to donate money. It is more convenient and environmental friendly way to collect the money by not using so much manpower.



**如何使用 QR 碼 ?**  
 步驟一：安裝應用程式  
 步驟二：開啟應用程式將要掃描的 QR 碼放在畫面中以讀取 QR 碼  
 步驟三：擷取資料

**How to use QR code ?**  
 1. Install a QR Code reader app  
 2. Run the app. Your screen will switch to a camera. When the QR code comes into focus. Try to fill the frame as much as possible with the code to speed up the reading process.  
 3. Access the content.

**如何使用 QR 碼 ?**  
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 步驟三：擷取資料

Ocean Park tries to enhance visitors' learning experience by using QR code that can let visitors get more information about the exhibits on their mobile devices.



**黃海馬**  
**Yellow Seahorse**  
**黄海马**  
*Hippocampus kuda*

**世上只有爸爸好**  
 這是真的！海馬家族裏懷孕的是爸爸！雄性海馬腹部長有育兒囊，像子宮般保護、提供養份和氧氣予胎兒。當胎兒成熟，海馬爸爸仗著尾巴的力量收縮肚子，產下寶寶。

**Seahorse fathers also make good mothers**  
 It's strange but true – males get pregnant and give birth in the seahorse family. A male seahorse protects and nourishes his developing young in a womblike pouch. As the embryos grow, fluid in the pouch bathes them in nutrients and oxygen. When the young reach full-term, the male pumps his tail and contracts his belly, delivering his babies into the waiting arms of the sea.

**世上只有爸爸好**  
 這是真的！海馬家族里怀孕的是爸爸！雄性海马肚子上有一个育儿囊，像子宫般保护、提供养份和氧气给胎兒。当胎兒成熟，海马爸爸仗著尾巴的力量收縮肚子，把宝宝产出。

This is the “Talking Tree”, but in fact, it is a rubbish bin. It collects cans from the visitors for recycling. It also reminds the visitors to classify cans and other rubbish. It raises people’s awareness to look after the environment.

Not like the normal rubbish bins, the “Talking Tree” has a special outlook and it have two places for visitor to classify their rubbish. It also acts as a decoration in the park.



They are the vehicles used to transport staff and materials within or out of the park.

They are operated by electricity. Electricity is generated by solar panel installed on the top of the vehicle. It is an environmental friendly design which can reduce carbon emission and pollutants and energy cost by eliminating the use of fossil fuel.



The above pictures showed that solar-driven vehicles were widely used in Ocean Park. It relies on the solar panel installed on top of the vehicles to provide energy to drive. It cuts down the use of fossil fuels. It does not harm the environment.



The building behind us is “Amazing Asian Animals”. Why does it link to sustainable? It is because the roof of the building is made up of special material, which can direct the sunlight into the building. Natural sunlight has replaced the installation of lights in providing sufficient light for both animals and visitors. It reduces the energy consumed and the design is environmental friendly.

Restaurants in Ocean Park helps promote sustainability by persuading their customers to choose seafood wisely, for example, asking customers not to eat shark fins and other endangered animals so as to protect them and to raise their awareness in conserving the oceans.



The bakery in Ocean Park also promotes sustainability. These forks are made of special material. They can be reused as therefore to reduce the waste of plastic forks. They are environmental friendly.

The building behind us is the Ocean Express Station. It is kind of a train that can shuttle guests between the park's two main lands in 4 minutes. It is operated by electricity and it can shuttle 5000 visitors per hour. It eases the carrying capacity pressure of the cable car. It is environmental friendly, as it does not produce any pollutants while it is operating.



## Information Collection - Interview

We are glad to have a short interview with Mr. Frankie Hau, the Risk & Environmental Management Director, on 22 April 2014 at Ocean Park. Here are the interview questions we set:

1. How can technologies meet the concepts of sustainable development in Ocean Park?
2. What are the difficulties and problems in applying technologies into the park facilities?
3. What are the difficulties and problems in promoting sustainable development in Ocean Park?
4. In what ways, does the clean, renewable energy technologies help construct a sustainable amusement park such as Ocean Park?
5. How can the company management strike a balance between economic, social and environmental aspects in sustainable development?
6. There will be two new hotels as well as Tai Shue Wan Waterpark project going on in Ocean Park's development in the coming years. Are there any designs featuring the concepts of sustainable development?
7. What are the measures for the Environmental and Carbon Management Steering Committee (ECMSC) in coping with the environmental problem?

Here are the results from the interview:

### **1. How can technologies meet the concepts of sustainable development in Ocean Park?**

Modern technologies actually facilitate sustainable development. A lot of new, upgraded equipment has been shown to be more efficient in both cost and energy. Such as:

- Solar panel  
Installed at electrical carts and saving up to 40% of energy and prolonging battery life by about 30%.
- Real-time computer control for water & air circulation system  
Supply “just enough” power to meet demand. Seasonal variation has also been applied to the environmental for animals.
- Insulation to cooling system  
Effectively reduces energy loss by heat gain from surrounding.
- Oil-free chiller  
Minimizing friction generated during operation and maximizing efficiency.
- Water saving device  
Reducing freshwater usage, Ocean Park is installing the saving devices by phases.

### **2. What are the difficulties and problems in applying technologies into the park facilities?**

- Adaptation  
Getting used to the new and abandoning the old
- Time consuming  
Most changes cannot be made in one-go
- Availability of components  
Ocean Park has, after all, over 37 years of history and therefore not every parts and components has a new model for installation.
- Priority  
Animals are our most valuable assets and their living quality such as the water temperature, shall remain one of the top priorities.

### **3. What are the difficulties and problems in promoting sustainable development in Ocean Park?**

Ocean Park is promoting sustainable development in many different aspects, through different approaches, such as:

- Green lifestyle interactive TV game in Polar Adventure
- Sustainable seafood initiative in restaurants and bakery
- Organic T-shirts in retail shops
- Low carbon menu in Tuxedos Restaurant.

However, there are always challenges in introducing new environmental programmes due to weak awareness of the public, for example, in introducing the collection of food waste in kitchens as it was considered additional work, and staff not willing to bring along their own food containers when consuming lunch in our canteen. However, over time and persistent enforcement with inspections and such, the challenge was lessened as the practice has been integrated into the common routine now. To this end, Ocean Park believes the overall culture development in the community plays a very significant role in influencing everyone in the city.

### **4. In what ways, does the clean, renewable energy technologies help construct a sustainable amusement park such as Ocean Park?**

Ocean Park has long been a passionate supporter in promoting conservation and environmental protection. We aim to innovate memorable exhibits and activities that inspire people's interest in nature, conserving resources and caring about carbon footprints. Through implementing the clean, renewable energy technologies (like using Town Gas to replace LPG); we dovetail our mission and commitment. After all, sustainable development serves well not only for Ocean Park, but also for everyone.

### **5. How can the company management strike a balance between economic, social, environmental aspects in sustainable development?**

Ocean Park believes the sustainable development can indeed achieve excellence in all three aspects, economic, social and environmental. Practically put, saving energy can of course save cost, hence the economic advantage. Then, with less energy used, less carbon is emitted. We are, therefore, doing well in both environmental and social wise.

**6. There will be two new hotels as well as Tai Shue Wan Waterpark project going on in Ocean Park's development in the coming years. Are there any designs featuring the concepts of sustainable development?**

Since statutory process for the hotel development has yet been completed, the designs and concepts are not ready for discussion. However, the Park is determined to include environmental-friendly and sustainability elements in both the architecture design and construction process.

**7. What are the measures for the Environmental and Carbon Management Steering Committee (ECMSC) in coping with the environmental problem?**

The ECMSC is the highest executive decision making body to drive and oversee the achievement of environmental management and carbon reduction programmes. Two sub-committees, Environmental Culture Sub-committee – was set up to look after mainly the guest facility and education; the Environmental Operations Sub-committee was formed to look after the back of house facility and staff education. Those Sub-committees would collectively manage the resources and report progresses under their functions. Measurable objectives and targets have been set for carbon reduction and water conservation.

Annual carbon audit – to review the carbon reduction progress

- Regular staff trainings/workshops  
Orientation training for new staff, regular lunch workshop and toolbox talks on location
- Specific taskforce and workgroup with work front staff  
For carbon reduction and water conservation
- Roundtable/seminar to share experience and insight with stakeholders  
For carbon reduction

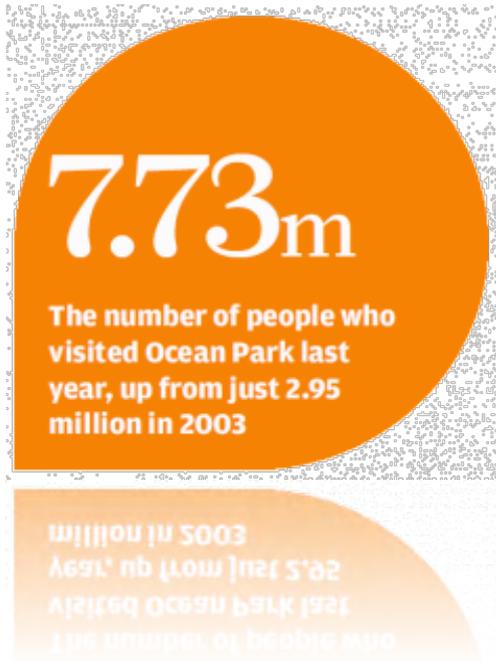


*It was our greatest honor to have an opportunity to interview Mr. Frankie Hau, Director of the Risk & Environmental Management Ocean Park.*

# SWOT Analysis of Ocean Park Hong Kong

## Strengths

### 1. Reputation in the industry



Ocean Park Hong Kong has a good reputation and status in the industry all over the world. In 2006, Ocean Park Forbes.com named Ocean Park one of the “10 Most Popular Amusement Parks in the World”. In 2007, Forbes Traveler ranked Ocean Park as one of the "50 Most Visited Tourist Attractions in the world". And in 2012, Ocean Park Hong Kong brought to Hong Kong the Applause Award (the most significant recognition within the global attraction industry); it is the world’s highest accolade for a theme park as the crowning achievement of Ocean Park’s multi-year redevelopment.

On the other hand, Ocean Park also won in the categories of “Digital Marketing”, “Best Overall Production (Budget of US\$50,001 – US\$100,000)” and “Visual Display (Over 1 million in attendance)” in 2012’s IAAPA Brass Ring Awards (International Association of Amusement Parks and Attractions).

### 2. People and Systems

Ocean Park Hong Kong not only takes their hardware to world-class level, but it also takes their software to the highest standard through staff expansion and extensive training. In 2012, Ocean Park provided a total of over 38,000 training hours to their staff on topics ranging from executive management to language and safety. It also committed to being an employer of choice by offering its staff more flexibility in maintaining work-life balance. Ocean Park has introduced paid leave for paternity and wedding to remain contemporary in its employee benefits and show its support for members of the Ocean Park Company.

### 3. Community Care

Ocean Park has always emphasized on community responsibility. Therefore, for local residents, Ocean Park offers free admission on their birthday; free admission for seniors aged 65 years or over; free admission for all holders of the registration card for people with disabilities and half price for one care provider; as well as \$20 admission for individuals and members of families receiving assistance from the Comprehensive Social Security Assistance (CSSA) Scheme. Ocean Park also supported the International Day of Persons with Disabilities (IDPD) for the 20th consecutive year by inviting over 4,000 Registration Card holders and their families and friends to enjoy a day at the Park. During the 2012/13 fiscal year, over 550,000 Hong Kong residents enjoyed complimentary or generously discounted admission to Ocean Park, resulting in a benefit equivalent to HK\$150 million to the community and a 5% increase compared to 2011/12. Ocean Park has shown its caring to the community.

### 4. Education for local students

Over the past years, Ocean Park has continuously offer courses to local students through Ocean Park Academy, Hong Kong (OPAHK). Funded and supported by the Jockey Club Ocean Park Educational Programme and the Hong Kong Jockey Club Charities Trust, 12,959 students from low-income families were able to participate in its educational courses. Ocean Park also offers workplace visits for local students so they can learn about a wide variety of career paths. Ocean Park dedicates to educate the future generation so as to present environmental messages to its students and to conserve our future environment.



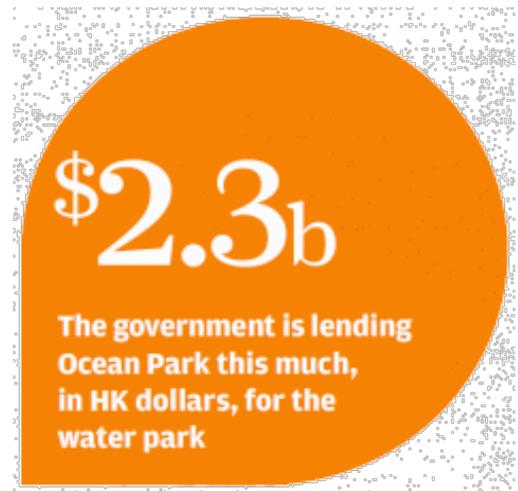
# Opportunities

## 1. Better accessibility

Nowadays, there is a proper transportation linking between the Park and the city, mainly bus routes. These bus routes link to the central business area, which is Central and Admiralty. Some of them link to the Kowloon. However, during peak hours, traffic congestion is very serious in the southern district, causing inconvenience to the guest traveling by buses. In the coming years, the problem will be eased. The transportation network will be improved as the opening of the South Island Line in 2015. At that time, tourists can go to anywhere in the city easily by MTR and there will be an increasing number of tourists coming directly from airport and cruise ships terminal as the commuting time will be shorter.

## 2. Future development

Ocean Park has adopted a development plan for future. For example, the Waterpark, once the watermark is completed, it will enable the community to relive their favorite water play memories in an innovative facility designed and equipped to the highest international standards and set against the backdrop of the beautiful South China Sea. The new water park will further transform the Southern District, bringing with it employment opportunities and economic benefits during its development and beyond. On the other hand, as the hotel project will complete construction in 2017, by the time it starts operating the visitors' average staying time will increase. The Park can benefit from the hotel, as guests will escalate their spending in the Park and thus generate more income.



<http://www.scmp.com/article/1517061/ocean-park-looks-future-state-art-water-park>

In order to explore how to reach out to more visitors and to share research into aquarium animals, the Ocean Park has extended its cooperation with the mainland's biggest marine park operator for another three years. There would also be a platform to exchange knowledge in sales and marketing. Ocean Park said the agreement differed from the last cooperation in terms of a deeper exchange of sales and marketing knowledge this time.



Ocean Park is planning to design a four-star, 495-room Ocean Hotel. Construction will start by the middle of 2014 at the earliest, with the hotel slated to open in 2017. Ocean Park will spend HK\$2.5 billion on the hotel project and another HK\$1.6 billion on land. Ocean Park's second hotel is expected to be completed by the end of 2018 or by early 2019.



<http://www.scmfp.com/property/hong-kong-china/article/1515927/ocean-park-appoints-lai-sun-build-new-ocean-hotel-resort>

## Weaknesses

### 1. Animal Caring

In the past few years, the incidents of death of animals occurred more frequently than before. There were 695 animals in total were dead from 1 July 2012 to 30 June 2013. It may be caused by the rising turnover rate of husbandry staff, too frequent performances and lack of supporting facilities. On average, 400-800 animals died each year in the past five years, with 10-20% of the animals dying due to accidents.

### 2. Suspension of amusement rides

There have been several accidents causing amusement rides in the park to be suspended in previous years. The Eagle ride and the Ocean Park Tower were suspended due to control signal interruption and control device failure. Although there was no report of injury, it alarmed the park authority to pay attention to its facilities maintenance. As Ocean Park is a 37-year amusement park, most facilities and rides should be renewed or replaced since they may be worn out. Ocean Park should ensure the safety of all guests and make sure that it can provide the best quality of entertainment and a safety and an enjoyable experience for the guests.

### 3. Problem of Overcrowding

Ocean Park is one of the famous attractions in Hong Kong, which attracts many tourists. However, in recent years, there was a few times that the Ocean Park came across with the problem of overcrowding during the Chinese New Year. Normally, the maximum number of guest that the Ocean Park can receive is 36,000. But during the Chinese New Year, the number reached to more than 48,000, causing the problem of overcrowding. Tourists need to wait for a ride for at least 30 minutes in average. Having to wait for such a long time, tourists may easily feel dissatisfactory. Therefore, Ocean Park needs to ensure that its tourists can share their fun without waiting too long.



## **Threats**

### **1. Tense competition in Southeast Asia**

There are already some theme parks in the Southeast Asia competing with Ocean Park such as Hong Kong Disneyland, Chimelong Paradise, Universal Studios Singapore and Dream World. Not including the Lotte World in Korea and the Shanghai Disneyland in China in the future, which are in other parts of Asia, Ocean Park has to face a tense competition between these theme parks. As there are too many theme parks in Southeast Asia, tourists will be easily satisfied with the present facilities and rides. Ocean Park needs new attractions and development to seek a breakthrough in order to grab the tourists. In the near future, the percentage rise in entries to the Park will eventually become constant, which may hinder the future development of the Park.

### **2. Unfavorable economic environment**

Inflation has always been a serious problem in Hong Kong, which threatens the daily lives of low-income and middle-income groups. According to the Census and Statistics Department, the inflation rate in Hong Kong was recorded at 3.70 percent in May 2014. The high inflation rate has reduced people incentive to spend their money on leisure activities and entertainment. Visiting a theme park is kind of a high-spending leisure activity. Therefore, people may reluctant to spend such money to visit an amusement park while they would prefer spending money on their daily necessity. As a result, Ocean Park may not be their choice to spend money on.

### **3. Over-dependence on mainland visitors**

Ocean Park receives visitors from local, foreign countries and the mainland. However, mainland visitors have a dominant proportion among the distribution of visitors. It causes Ocean Park rely on the high-spending mainland visitors to generate revenue and as a result, over-dependence on mainland visitors occur. In the coming years, there will be a closer contact of China and other countries in Southeast Asia. As there are several theme parks in Southeast Asia, mainlanders may be diverted to these amusement parks as the number of mainland visitors choosing other countries over Hong Kong has been rising. It not only reduces the revenue of Ocean Park in the future, but it also affects businesses targeting mainland visitors to boost their tourist industry. It may adversely affect the Hong Kong's tourism industry.

## Chapter Summary

Ocean Park Hong Kong has tried to maintain sustainability by adopting various measures. It also tries to apply technologies into their park facilities to improve the efficiency and meet the concept of environmental sustainability. However, they may not be willing to change, as they need to consider the cost effectiveness.

Firstly, they would not adopt new source of renewable energy easily. They need to consider about the cost of building the structure, for example, the wind turbines. It is very expensive to build and the locational characteristics have restricted the development of some kinds of renewable energy. Therefore they are reluctant to change to use newly renewable energy while they would prefer using energy resources that are well proved by the community and the world. They have to consider whether it is cost effective or not.

Secondly, they have to consider the core business. In fact, Ocean Park is a commercial organization, which aims for a better revenue. They would consider everything in an economical perspective rather than environmental perspective, as they need to achieve their profit margin. Therefore, it is not possible for them to put too much capital on promoting sustainability. Promoting sustainability and developing technologies require large sum of capital that may reduce the incentive for Ocean Park Corporation to carry out measures in sustainable development. Being a commercial corporation, Ocean Park needs to consider their economic benefits before the environment.

Despite the above obstacles, Ocean Park tries its best to achieve environmental sustainability. They would choose clean, renewable energy technologies to construct a sustainable park. For example, they would use town gas, which is a clean energy. They would also purchase electric car that is operated by solar power. They would consider all possible and reliable clean energy in achieving sustainability. Ocean Park targets to reduce carbon emission by 10 percent 10 years later. Ocean Park has shown its great effort in including environmental friendly and sustainability element in its development. While meeting its profit margin, Ocean Park is determined to promote a better environment for the visitors and for the future generations.

# Chapter Three: Situation in Hong Kong

## **Benefits in promoting sustainability through technology in Hong Kong**

### **Tourism service provider perspective**

#### **Improve cost effectiveness**

Firstly, various operational tasks such as staff scheduling, cost calculation can be done with the help of technology. Secondly, technology helps to reduce the bureaucracy and paperwork. Thirdly, tourism service provider (Ocean Park) can consolidate a better integration of departments and functions of organizations towards better services and reduction of operation costs. Fourthly, technology can also help the tourism service provider (Ocean Park) develop a less labour-intensive and mobile-based booking system. By using fewer resources in operation and works are done with the help of technology, it can achieve environmental sustainability.

#### **Enhance forecasting**

Technology helps tourism service providers e.g. Ocean Park obtain accurate and much larger volume customer data and richer marketing research data from all transactions and enquire made by consumers through the Internet. It also helps manage customer data effectively by storing them in a digital form in a database or a server. As customer data are stored in the database, tourism service provider can develop a better understanding of consumer needs thus reducing the gap between consumer expectation and perceived experience and thus provide a more personalized service.

#### **Consolidate fragmented tourist product**

Technology has transformed the traditional multilateral tourist distribution channel to unilateral channel via the Internet. It also offers one stop shopping for the customers online. Moreover, tourism service provider can develop a better cooperation with airlines via the Computer Reservation System.

## **Customer perspective**

### **Increase the ease of purchase**

People not only in Hong Kong but also in the world can buy tourism products anytime and anywhere. They can pay for the tourism products directly as one-stop shopping is available through Internet or mobile devices. Customers can enjoy automation of standard procedures through the Internet and the use of mobile devices or the convenience of self-service kiosks that reduce time.

### **Provide more product information**

Customers can enjoy greater choices for suitable tourism products through a number of travel-related websites. Technology enhances the travel experience through consolidation of tourism products such as destination attractions, accommodation and transportation. Customers can gain access to massive travel websites easily, which offer consumers more information. Customers can also enjoy greater discounts for last-minute sales, targeted offers and special promotion through the Internet and mass media.

### **Speed up purchasing decision**

Technology makes one-stop shopping possible with the direct dealing with service provider's reservation department. Customers can gain easy access of information on the Internet empowers consumers to get information on products and services of interest.

## Summary

Technology brings benefits to both tourism service provider and customers. It helps to reduce and cut down the operational cost of tourism service provider. It also helps improve the efficiency and productivity of tourism service provider as works can be done automatically. Technology is also essential and good to the Hong Kong people as people living in Hong Kong lead a fast-pace and busy daily life. Seldom do they have enough time to go to a travel agency outlet for the information. Therefore, technology in tourism industry can satisfy with the needs for both tourism service provider and customers. Technology can then achieve sustainability in tourism industry in long term.

## **Difficulties in promoting sustainability through technology in Hong Kong**

### **Lack of capital**

Lack of capital is the major and one of the difficulties among the entrepreneurs in promoting sustainability through technology. Developing and introducing a new technology require high cost of manpower and capital. For all the companies, they would all consider about the economic benefits first rather than to promote sustainable development. Therefore, they will be more reluctant to invest on developing a new technology, as they are not willing to put so much money on a technology. Organizations would consider about the cost effectiveness. Lack of capital is a problem that hinders the sustainable development through technology.

### **Immature development of technology**

Comparing to other developed countries like Japan, the USA, Hong Kong's development in technology is lack behind these places. In nowadays, most of the newly invention are invented by Japan or the USA, seldom does Hong Kong invented a new technology. Hong Kong does not have a mature technology development comparing to Japan and the USA, as a result, the newly invention cannot be transferred to Hong Kong or the scientists in Hong Kong need a long time to know more about the new technology. Therefore, it is difficult to use new technology to achieve sustainability.

### **Fear of uncertainty**

As developing and applying technologies require a large sum of money, also, for those new technologies, there is a lack of industry-wide standards in the past in relation to the quality, safety and reliability of techniques and tools, there may have risks of using them, thereby making it difficult for companies to invest on technologies. After taking consideration on investment and potential risks, companies refuse to invest in technologies and thus hinder the sustainable development.

## **Locational disadvantages**

For some renewable energy technologies, they may not be workable in Hong Kong due to its locational disadvantages. Renewable technologies such as hydroelectric power, tidal power, geothermal energy, nuclear energy, they are impossible to be implemented in Hong Kong. It is because Hong Kong does not have a river and coast which can generate enough power for energy. With safety concern and lack-behind technology development, nuclear energy cannot be workable in Hong Kong. Therefore, in the perspective of energy consumption, the above renewable energy technologies are not suitable for Hong Kong due to the locational restriction of Hong Kong.

# Chapter Four: Comparison with other theme park

## Yokohama Hakkeijima Sea Paradise



Yokohama Hakkeijima Sea Paradise is an amusement park consisting of an aquarium, shopping mall, hotel, marina and amusement rides. It is located in Kanazawa-ku, Yokohama, Japan. It opened on May 8, 1993, which has 21 years of history. There is Japan's first surf coaster that swings out over the ocean.

Operating an amusement park requires a large consumption of energy. But for the Sea Paradise, it has its own way to achieve the concepts of sustainability by using technology. So, how can the amusement park save energy through technology?



In April 2013, the Yokohama Hakkeijima, the company operating the Sea Paradise, cooperated with the Tokyo University of Marine Science and Technology. They launched two new systems to save energy and reduce disaster risk.

Yokohama Hakkeijima is a member of Yokohama City's Yokohama Green Valley project. The project aims at promoting the reduction of greenhouse gas emissions and revitalizing the local economy. The company and the Tokyo University have succeeded in reducing air-conditioning power consumption by 20 percent through the introduction of a heat pump in a part of the facility of the aquarium. The heat pump works by taking advantage of the unique tendency of ocean water to stay at a rather stable temperature, between 10 degrees and 17 degrees Celsius, year-round. The commercial installation of air-conditioning equipment that uses seawater as a heat source is a rare occurrence worldwide.

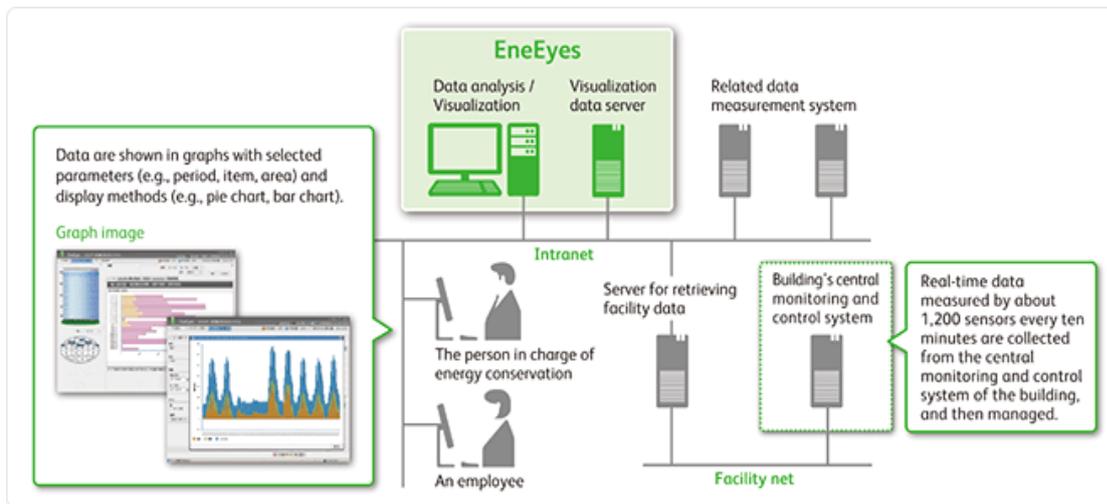


©Yokohama City

The company and the university also created a system for visualizing power consumption in the office building and the aquarium facility. According to Fuji Xerox, a company which specializes in technology, the method that Sea paradise uses can be named as “EneEyes”. It is a self-analysis system to visualize energy consumption. By utilizing the measured data, organizations can see the amount of energy consumed by devices connected to outlets and that by the lighting of each floor. The Fuji Xerox also developed a tool for collecting information on the running time of each device, so that EneEyes can take in data on each device's electricity consumption as estimated from the running time. This has thus enabled the visualization of detailed electricity and energy consumption of each floor, the identification of problems and probable causes, and the creation of energy-saving measures.

In addition, the effect of energy-saving measures can be checked by "visualizing" the actual effects of the measures, the effects estimated through simulation, and the result of comparison with a target value. Moreover, EneEyes also collects such data as the operation status of devices and the amount of paper used from related systems, and then stores the data for utilization with its energy consumption data.

It is a system which can monitor the energy consumption of every device in the building and contribute to a 10 percent reduction in power consumption.



© Fuji Xerox

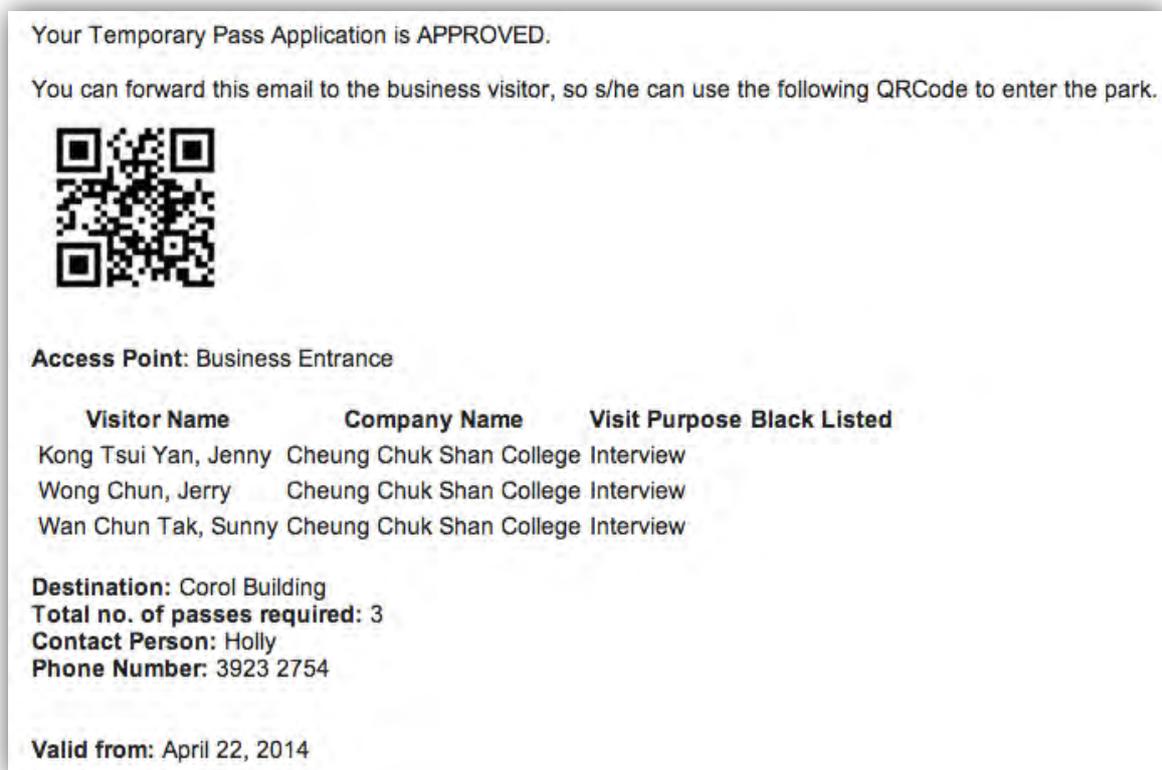
The two new systems, which are the Seawater heat pump and the Visualizing of power consumption, have made their way to reduce the consumption of energy while achieving a higher efficiency of energy. With the reduction in energy consumption, the operation cost on energy will be greatly reduced too. Therefore, the two new systems meet the idea of sustainable development, as they are environmentally sustainable and economically sustainable.

## Ocean Park vs Yokohama Hakkeijimi Sea Paradise

Both Ocean Park and the Yokohama Sea Paradise have their ways to achieve environmental sustainability through technology.

For Ocean Park, it saves energy by installing solar panels at electrical cars which can saves up to 40% of energy. It also install oil-free chillers which to utilize the chillers to a maximum efficiency. Moreover, the insulation to cooling system is successful to reduce energy loss by heat gain from surrounding effectively.

Also, Ocean Park has also developed convenient way for their visitors to enter the park without any identification on paper such as tickets.



The photo above shows that the business visitors can enter the park using QR Code. It is a more environmental friendly and convenient way for both the guests and the park authority as less paper is used and with the application of technology, it can increase the time needed for checking the identity and confirmation of guests' information.

On the other hand, seawater heat pump and the Visualizing of power consumption in Sea Paradise can help save energy by 20 percent. The park generates energy by pumping the seawater and visualizing the energy consumption that can control and monitor the usage of energy and to conserve energy.

However, for the Ocean Park, it may not be possible for it to develop in seawater heat pumping as this method costs a large input of capital. They may not have sufficient capital to invest on such a big project. Moreover, as seawater heat pumping to generate energy is rare in the world, it requires higher technological development to cope with the set-up, on-going maintenance. Ocean Park may not have such a high technical and technological support for that.

For the Yokohama Sea Paradise, it relies on the two systems to reduce energy consumption so as to achieve environmental sustainability. In fact, that is not enough. It needs to explore more ways to reduce energy consumption. Yokohama Sea Paradise lacks a variety of measures to strive for sustainability.

# Chapter Five: Suggestion and Conclusion

## Suggestions on how to promote sustainability through technology

### Management

Ocean Park has directed much effort into education and research about animal conservation. Besides being an amusement park, Ocean Park Hong Kong is also committed to merging entertainment and education, while inspiring lifelong learning and conservation advocacy. This is done by operating observatories, laboratories, an education department, and the Ocean Park Conservation Foundation, Hong Kong (OPCFHK), a fund established in 1993 which advocates, facilitates and participates in the conservation of wildlife and habitats. In 2011/2012, the Foundation funded 42 conservation projects, covering 27 species in 10 Asian countries for a total of HK\$5 million.

### Operation

Most of the amusement parks like Ocean Park and Disneyland sell their tickets in a printed-form. Although they have set up online purchase system, visitors still need to print out the confirmation of ticket or get the printed ticket at the entrance of the park, which require the use of paper.

The Ocean Park has set up an online purchase system. However, visitors are required to print the admission ticket at home or pick up the ticket at counter or even receive the ticket by mail. Such methods only reduce the time cost but do not to reduce the use of paper.

**Buy Products**

1 Choose Products 2 Order Confirmation 3 Payment Information 4 Payment 5 Completion

**Order summary**

**Items in Your Cart** Cart subtotal: HK\$ 320.00

Product	Price	Quantity
Daytime Adult - 27 June 2014	HK\$ 320.00	1

**Delivery**

Delivery Method: PRINT @ HOME (selected), PICK UP AT COUNTER, Info, HK\$ 0.00

**Total Order Amount** HK\$ 320.00

Back Continue

**Please note**

**Print @ Home:**  
To print the admission ticket immediately upon successful payment.

**Pick up at counter:**  
To print a voucher immediately upon successful payment and redeem the admission ticket at Ocean Park Ticketing Office.

**Sent by Courier:**  
To receive the admission ticket by Hong Kong Post's courier service. The admission ticket will be delivered to the specified address in Hong Kong in 5 days and outside Hong Kong in 7 days upon successful payment.

Besides, the Hong Kong Disneyland has a fast pass system that Ocean Park can decide to apply in the park areas. The fast pass system includes some machines which give the fast pass tickets to the visitors. For example, when visitors don't want to queue up for a long period of time, they can take a fast pass and arrive at the area again in the given period. At that time visitors can play the games more easily by using the fast pass tickets. This system can alleviate the overcrowding problem of some areas in the park that there won't have too many visitors queue up at the same area in the same time.

Ocean Park has also adopted technology for visitors to use in the park. Ocean Park's mobile app offers park maps, the latest updates on the Park's events and other useful information like the show times and wait times for various attractions and shows. Users can also use the app to scan QR codes inside the Park to view exclusive content like animals' fun facts, the starting time of the shows in Ocean Park like Ocean Theatre and Whiskers' Theatre.

With the innovation of mobile devices, If Ocean Park can improve such problems by giving visitors with a QR Code, visitors only need to bring their mobile devices and scan their QR Codes in order to get into the park. This method can help use less printed tickets, instead, it will be very convenient for visitors just using their mobile devices for entering the park. Environmental sustainability can be achieved by using less paper as e-tickets have replaced printed tickets.

In the same case, maps of the park can also be shown in digital form. Theme parks provide visitors with printed map, causing a number of paper wastes. As there are more and more people having electronic gadgets, it will be less costly and more environmental friendly to offer maps to visitors in a digital form shown on the digital screen. Through reduction in use of paper, environmental sustainability can be achieved.

However, the most important thing that helps promote sustainability through technology is the human mindset. There are many owners who are not willing to change in using technology to develop sustainability. They may prefer following the traditional way of operation. Short-termism is a very common in owners and managers as do not see any immediate return on their investment and, therefore, are reluctant to invest in technology. If owners and managers are taught about the long-term benefits of applying technologies in their businesses, they will be more eager to change their mind.

## Visitors

Environmental conservation is one of the important objectives of Ocean Park. As there are millions of people visiting the park every year, visitors are the major factor to help Ocean Park achieving the goal. People working in Ocean Park need to have a clear understanding of animal's care and environmental protection and teach the tourists about knowledge so as to promote their aim. Also, the Ocean Park can organize some workshop for visitors in order to care or concern their nature. After visiting the Ocean Park, visitors can learn more about what they have missed in daily life instead of just having fun. Furthermore, to promote the idea of conservation to public, the official website of Ocean Park now features a "Conservation" session which introduces the importance of conservation and some current conservation issues related to daily life. It also offers funny facts about some wildlife species, as well as environmental threats and conservation.

Ocean Park runs a series of programmes called "Get Closer to the Animals" which enable visitors to have close encounters with its resident animals. Its wildlife encounter programmes run the gamut from hands-on experiences like swimming with dolphins at the Dolphin Encounter, to learning to be a panda keeper at the Honorary Panda Keeper Programme. Visitors can also join tours like the Amazing Animals Ed-Venture, Polar Ed-venture and Rainforest Ed-venture, which take groups behind the scenes at these facilities. With the opening of the Polar Adventure, people can now join programmes like the Penguin Encounter, Seal Encounter and Honorary Polar Animal Keeper to meet with polar animals up close.



## **Role of technology in promoting sustainability in tourism industry**

Technological breakthrough has made advancement in connectivity between people and places. Its high processing power has made people rely on technology. It is no doubt that technology has changed our living habit and lifestyle. Technology in tourism industry not only enhances the competitiveness of a destination and improves the businesses, but it also improves tourists' experience in travelling to the destination.

With the better connectivity and popularity of using Internet, people realized that Internet and technology such as mobile devices could bring them a lot of benefits such as convenience. They can just only use their mobile gadgets and access to the Internet to book their airline tickets, hotel rooms and attraction tickets...etc. at anytime and anywhere. Especially in nowadays, tourism activity is being shaped by price comparison and combination of technology. Mobile applications and social networks have provided a wide range of tourism products. Tourists can choose among them on the Internet. How convenient it is! In the past, people needed to go to tourist service provider's outlets to obtain the information they want, it is time-consuming. With the innovation of technology, unlike the past, tourist can access to travel information in just a few buttons. The changing tourism mode is becoming more obvious and constant.

In the future, more and more people will get travel information by their mobile applications and social networks, saving their time and reduce the resources such as leaflets and paper that produced by the former tourism mode.

Technology will be the major element of the future tourism mode. Works will be done by computer systems automatically and products will be purchased online. Technology will construct a new era of travel. It provides opportunities for tourism service providers and sellers. By moving away from focusing solely on the transaction, companies in the tourism industry will be able to build a long-term, higher value and more profitable relationships with customers, which will ultimately achieve the idea of sustainability in tourism industry.

## **How does the organization utilize technology to support sustainability?**

There is a close relationship between airlines and travel agents on providing information and selling the tourism products in tourism industry. They can utilize the electronic gadgets like computers to support sustainability. The Global Distribution System (GDS) or Computer Reservation System (CRS) are the good examples of technology for both of the companies like Galileo and Abacus. In the process, the airline companies like Cathay Pacific, JAL and Singapore Airline can supply information like flight availability, price and special offers of different kinds of air ticket through the two systems so the systems can group the information and let the customers to check the related information.

Afterwards, they provide the customer information such as requests, reservation and modification on the arrangement to the travel agents or intermediaries like EGL tours and Wing On travel. As a result, they have to create their unique products for the customer in order to gain profit and develop a good reputation. Therefore, it is beneficial to the agents that the customers can purchase the travel products they had released on the systems. It will be more convenient for service providers to sell their products online.

## **Importance of technology in promoting sustainability of tourism of a destination**

Tourism industry, like many other economic activities, has produced detrimental impact on environment and society and culture by different means. If tourism activity keeps on growing, it will lead to much more serious consequences without any solution. Balancing economic growth and protection of environment is a challenge faced by every people in the tourism industry. Sustainable development is the only way out. Sustainable tourism development may be effective in destination management through the application of technology.

Technology plays an important role for the development of a destination. It would have been better for destinations to apply technology in the early stages of the Destination Life Cycle, for example, during the Development or Consolidation stages where difficulties due to improper tourism planning and over-development were realized. This provided greater justification for the use in the earlier phases as tourism's negative impacts become more advanced in the later stages of a destination's tourism development.

Moreover, in the early stages for development such as Exploration and Involvement, destinations may have problems in adopting and applying technology for sustainable development of tourism due to lack of funding and capital. Their priority would be on marketing, promotion and getting the destination known in the travel market. Therefore, technology is important for sustainable development in the later stages in destination life cycle, as destinations may need the support of technology to seek a breakthrough in tourism development or to improve the destination planning so as to achieve sustainable development in destination.

# Teachers' Note

## Questions To Ask When Reading This Case Study

1. What is the definition of sustainability?
2. What is the concept of “Carrying capacity”?
3. Why is sustainable development important to tourism development in different destinations e.g. Hong Kong?
4. What are the factors affecting the sustainability of a destination?
5. What are the difficulties and challenges in promoting sustainable development?
6. What are the stakeholders involved in sustainable development? Which one is the most influential in promoting sustainable development?
7. What are the roles of technology in sustainable development?
8. What core elements are needed in order to develop sustainability in a tourist attraction such as an amusement park?
9. What are the possible sustainable practices that can be adopted in the aspects of strategy, operation and infrastructure?
10. What are the differences between sustainable practices in different destinations and sectors e.g. transportation, accommodation, travel agency?

## **Learning Activities To Apply This Case Study to Your Own Country or Community**

### ➤ **Brainstorming:**

Students are advised to get into small group of 3 or 4 and generate the definition of “Sustainability”. Think of why sustainable development becomes a trend in their country/community and how technology can help in achieving the goal.

### ➤ **Jigsaw co-operative learning:**

Jigsaw is a grouping strategy in which the members of the class are organized into "jigsaw" groups. The students are then reorganized into "expert" groups containing one member from each jigsaw group. The members of the expert group work together to learn the material or solve the problem, then return to their "jigsaw" groups to share their learning. In this way, the work of the expert groups is quickly disseminated throughout the class, with each person taking responsibility for sharing a piece of the puzzle.

- Each “expert” group is given a tourism-related institution (namely, national or local tourism board, travel agent, hotel operator, airline and attraction) and thinks about the possible sustainable practices of each role. Write down all ideas as point-form notes and share them with other "jigsaw" group members during discussion. Categorize the ideas into different aspects in strategy, infrastructure and operation or using the 4“R” principles, which are recycling, reusing, replacing and reducing.

### ➤ **Group project:**

Students form smaller groups, each group chooses a company in the tourism or hospitality sector and look for the essential information regarding the sustainable development with the use of technology. Visit the site of the company and explore other possible sustainable practices and share it with other groups. Discuss in class the common points from the findings of all the groups. Make suggestions on improvement.

# Hong Kong Team Members



Presentation Rehearsal at the Hong Kong Polytechnic University  
(From left to right: Sunny Wan, Mrs. Jenny Lo, Professor Qiu, Ms. Chammy Lau & Jerry Wong)



Hong Kong GTTP Winners at Cheung Chuk Shan College  
(From left to right: Sunny Wan, Janet Leung- 1st place in Travel Writing Competition, Jerry Wong, Suki Tam- Awardee of Photo Competition & Mrs. Jenny Lo)

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