

# Design and Applied Technology CASE STUDY

Transforming an industry from  
Original Equipment Manufacturing (OEM)  
to Original Design Manufacturing (ODM)





# CASE STUDY

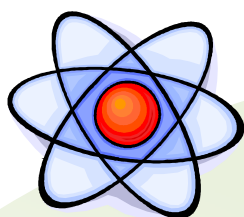
## Design and Applied Technology

Students should be made aware of the relevance of the technology they are studying to the real world. Case studies on technology and design enable students to put their learning into an authentic context.

**Authentic Context:** Students could explore entrepreneurship and enterprise through a case study on the transformation of enterprises in Hong Kong.

### Topics Covered:

Compulsory Part	Strand 3 : Value and Impact
Elective Part	Module 3 : Design Implementation and Material Processing



Transforming an industry from  
Original Equipment Manufacture (OEM)  
to Original Design Manufacture (ODM)



**Author**

Mr Li Yu-wai

Head of Department (Design and Technology)

Tang Shiu Kin Victoria Government Secondary School

**Project Coordinators**

Mr Li Yat-chuen

Senior Training Consultant

Institute of Professional Education And Knowledge, VTC

Mr Tsang Siu-wah, Ephraim

Training Consultant

Institute of Professional Education And Knowledge, VTC

The copyright of the materials in this Case Study belongs to the Education Bureau of the Government of the Hong Kong Special Administrative Region.

Duplication of materials in this Case Study may be used freely for non-profit making educational purposes only. In all cases, proper acknowledgements should be made. Otherwise, all rights are reserved, and no part of these materials may be reproduced, stored in a retrieval system or transmitted in any form or by any means without the prior permission of the Education Bureau of the Government of the Hong Kong Special Administrative Region.

© Copyright 2010

Note by the Institute of Professional Education And Knowledge, VTC:

Every effort has been made to trace the copyright for the photographs and images in this Case Study as needed. We apologize for any accidental infringement and shall be pleased to come to a suitable arrangement with the rightful owner if such accidental infringement occurs.



## Introduction

Mainland China has been renowned worldwide as a World Factory in recent years. Most say that it is contributed to the Hong Kong Enterprises who work diligently and laboriously almost 24 hours per day behind the scene.



Since the 80's, most Hong Kong factories had moved into Delta Pearl River (DPR) region of Mainland China because of lower cost of land, transportation and materials. As cost is reduced, the scale of Hong Kong manufacturers have gained a rapid expansion in term of factory floor area, production capacity, labors and facilities. However, after the successful application of Mainland China to World Trade Organization (WTO) membership, the immense domestic market of mainland China will be opened to international markets. This will certainly benefit those Hong Kong enterprises that had been rooted in DPR for over decades and planned to penetrate the local market there. However, many recent research findings stated that if Hong Kong enterprises keep on their role at the lower end of production chain that focus on the labor intensive, energy consuming mode of production at the low-end of China's domestic market, the competitiveness of Hong Kong enterprises will diminish gradually in the coming future.

Now you are working in a consultancy firm, you have just assigned a task to study the following areas:

- (1) Identify key successful factors for an Original Equipment Manufacturing (OEM) enterprise to develop into an Original Design Manufacturing (ODM) business model and
- (2) Identify the barriers that an OEM enterprise must need to overcome before successfully developing into the ODM business nature.



## The Story

The diagram below is the banner from a local manufacturer webpage.

**We** are one of the Original Design Manufacturers specialized in innovative plastic and electronic gifts and premiums. Besides making own designed products, custom designs are also welcome! Please feel free to contact us. We are well prepared to assist customers to develop their new items!

**We** are also a professional and experienced gifts, premium as well as stuffed toys manufacturer in OEM business for more than 15 years of licensed and promotional products where we have served for many multi-international companies such as McDonald, Kellogg's and Steinbeck.

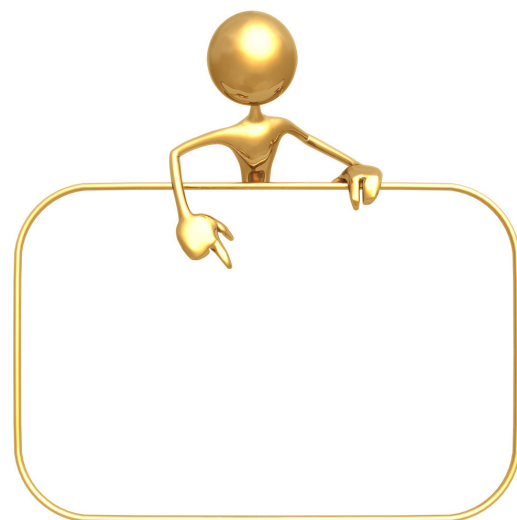
**We** can make and develop whatever designs as per customers' request. Our facilities are up to international safety standard and our factory is located in Dongguan, China with more than 350 workers. We have 20 people in Shenzhen office for handling, sampling, sourcing and we also have a showroom in Hong Kong. Our open items are in great variety.

Figure 1 Advertisement of an OEM/ODM company

## Activity 1

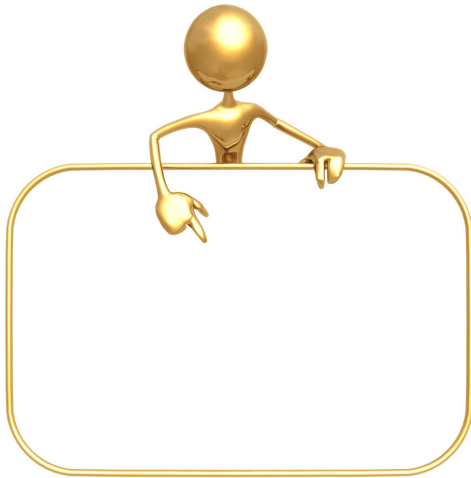
According to the content in this advertisement to answer the following questions.

**(1) Can you get some ideas of what OEM and ODM are?**





(2) What are the major differences of OEM and ODM?



## What is OEM?

**OEM** is short form for *Original Equipment Manufacturing*. One company uses a component of another company within its product, or sells the product of another company under its own brand. OEM refers to the company that originally manufactured the product.

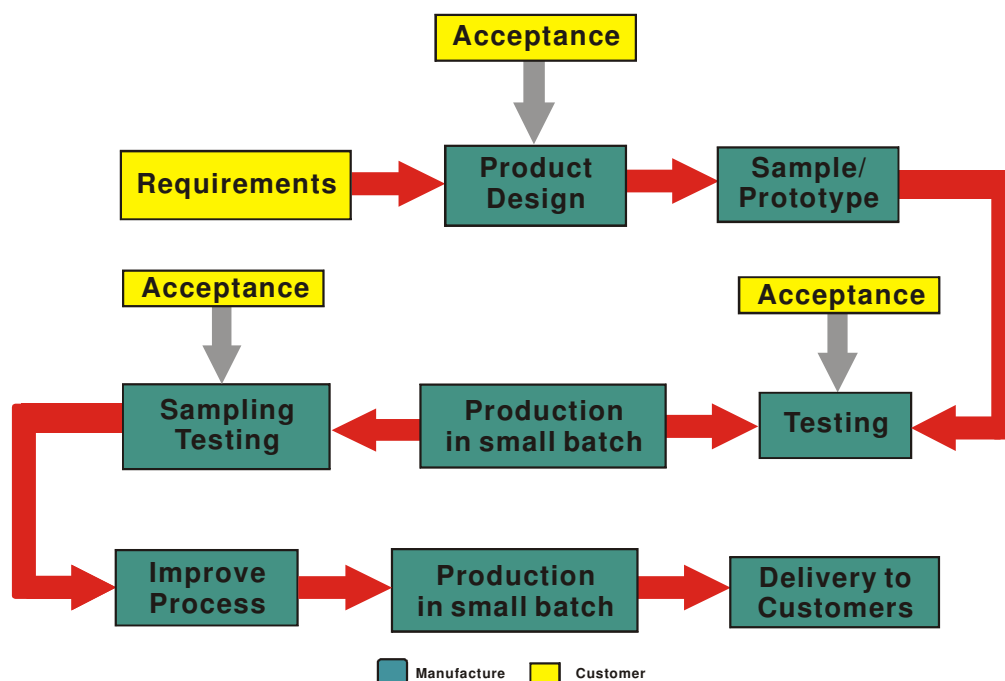


Figure 2 Workflow of OEM Business Model





## What is ODM?

An **O**riginal **D**esign **M**anufacturer (**ODM**) is a company which manufactures a product which ultimately will be branded by another firm for sale. Such companies allow the ODMs to produce the products without the need to engage in the management and the running of a factory. ODMs have shown a remarkable increase in size in recent years. Many of them have the capacity to handle production for multiple clients.



**ODM** is quite popular in international trade, where a local **ODM** is used to produce goods for a foreign company. This may be the cases where local ownership laws restrict or prohibit direct ownership of the factory by foreigners, but allow a local factory to produce products for a foreign company brand. The products will be produced for either local domestic market or export to the original foreign countries.

Hong Kong manufacturers, especially in Delta Pearl River, have achieved very good results in establishing OEM operations in past decades. However, competition from manufacturers of other Asian countries, such as Vietnam and Indonesia, has been rising. To sharpen our edge and stay ahead of other competitors, many Hong Kong manufacturers are in the high time to think of shifting an OEM operation to ODM and even the brand name production.

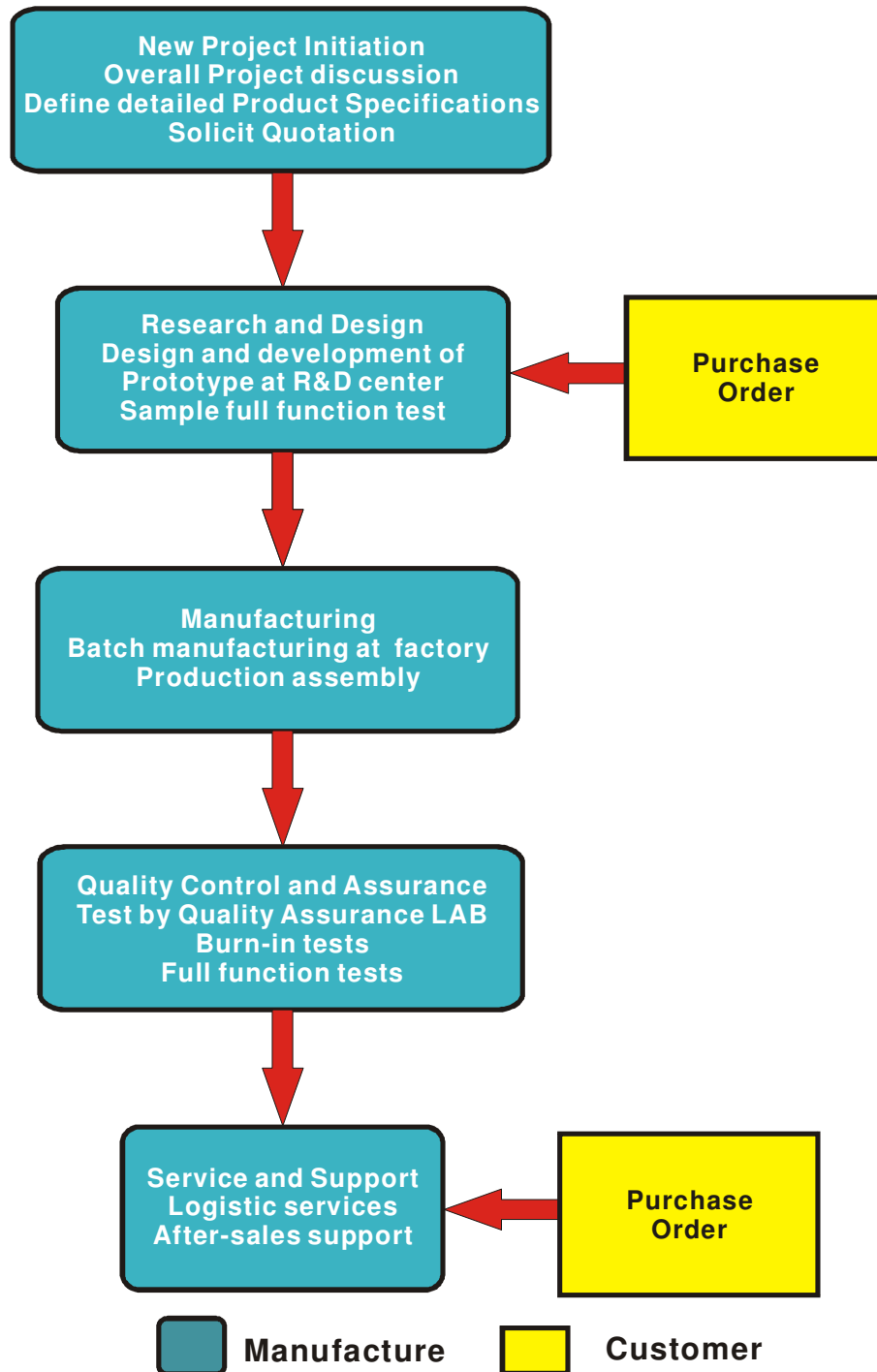


Figure 3 Workflow ODM Model





## Example of popular OEM product



**Figure 4 OEM product of mobile phone batteries**

Nowadays, most students may have their own mobile phones. The popular brand names are NOKIA, Samsung and Sony Ericsson. However, do you know that the batteries used by each cell phones are usually not made by the mobile phone companies themselves? The manufacturing of batteries are so specialized that they need specific technology and production facilities, which involves a huge sum of capital investment. The mobile phone companies will only focus on their own product designs and market. They will not invest in production of batteries, as it will not directly affect their sales and not their specialty. Therefore, mobile phone companies will provide product specifications and outsource battery that is appropriate to their mobile phones from a dedicated or a pool of battery manufacturers. The mobile phone companies will require the battery manufacturer to print their trademarks onto the batteries and make them becomes part of their products for sales. The battery here is an OEM product. The factory produces the battery conforming to the client requirements is doing an OEM business.

In practices, the battery manufacturer can also be an ODM business. They can develop a new item and solicit the mobile phone companies to adopt their new battery products.



The battery manufacturer can be an Own Brand Manufacture if they sell their batteries directly to the market with their own trademark.



**Figure 5 Common OEM products of Memory Cards**

Beside mobile phone battery, memory cards are also OEM items commonly available in the market. The manufacturer produces all ranges of memory cards according to different user requirements, such as the memory capacity, reliability and packaging design. The memory cards will be printed with the brand names of different clients for sales. Once the products are shipped out, the role of the OEM will be completed.



## Activity 2

The diagram below is the **statistic** results made by the Hong Kong Productivity Council in 2007 about the nature of business in Hong Kong manufacturer.

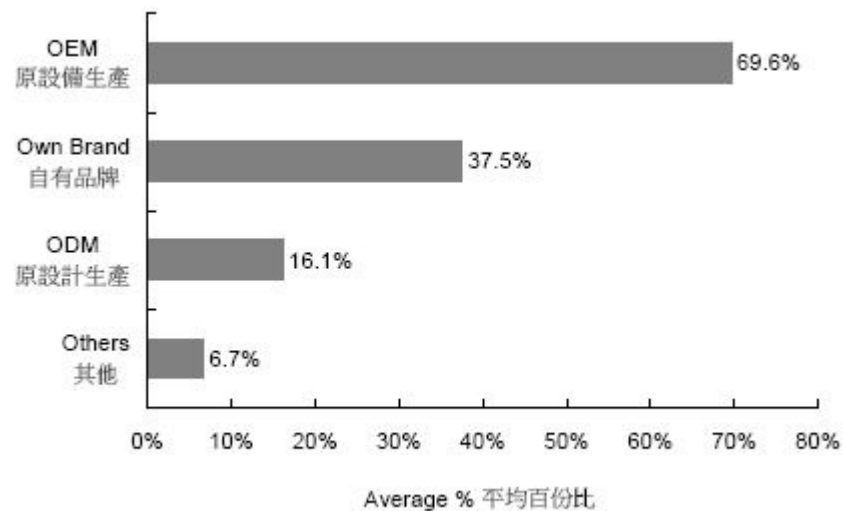


Figure 6 Distribution of Hong Kong Manufactures Business Models

*(1) Can you give any daily examples of OEM and ODM products?*



---

---

---

---

---

---

---



***(2) What is “Own Brand” manufacturer? Can you suggest one example for illustration?***

---

---

---

---

---

---

---

---



***(3) What conclusions can you make from the data in the diagram?***

---

---

---

---

---

---

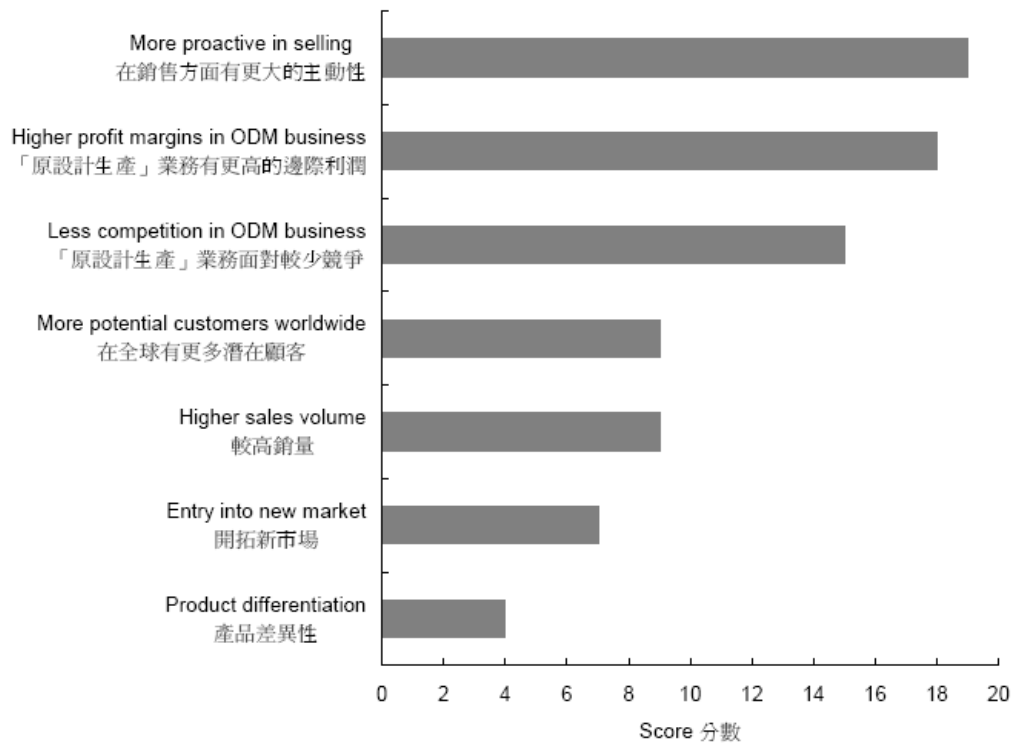
---

---



## Activity 3

The diagram below is a survey result about the reasons for transforming an OEM to ODM business.



**Figure 5 Reasons of adopting ODM Business Model**

1. Why ODM can be more proactive in selling?

---

---

---

---

---

---

---



2. Why ODM can have higher profit margins?

---

---

---

---

---

---

3. Why ODM will have less competition compared with OEM?

---

---

---

---

---

---

4. Why ODM can have more potential customers worldwide?

---

---

---

---

---

---

5. Why ODM can have higher sale volume than OEM?

---

---

---

---

---

---



6. Why ODM can entry into new market?

---

---

---

---

---

---







## Factors to be considered from OEM to ODM



Product positioning, promotion, marketing channel and strategy are the most important factors for the transformation of an OEM to ODM. However, to most industrial entrepreneurs, all these factors are usually not their strengths and scope of business. Therefore, they are really in need of external advices and consultancy when they start to think of developing their ODM business.

Undoubtedly, OEM companies usually have leading production and engineering capabilities. However, when considering transformation of OEM to ODM, they have to enhance their marketing and product strategies. Developing these marketing and product strategies can be a very complicated matter to most OEM manufacturers, as they usually do not have experience and sense of fashionable trends.

In the past, they only focus on technical and engineering aspects of how to produce a product according to the clients' specifications. Their major concern is to keep the cost to minimum whilst the quality of products can be met. The product can either sell or not in the foreign or local market is totally not their concern. However, if the company is changed to an ODM, they will need to take care of the following operation:

1. Business Planning (e.g. marketing strategy, product portfolio, technology roadmap, design trends, 'make or buy' decisions and Human Resources planning);
2. Sales Planning (e.g. market identification, which products? when to market? Sales targets, product features, product planning, quality



- and design);
3. Product Planning (e.g. product features, pricing, decide to go to ODM or OEM);
  4. Design and prepare Product Launch Program

The future development of ODM is told to be so promising and deterministic but why many companies are still hesitating in developing into this business model? There are some barriers hindering the OEM companies at this moment. For most OEM manufacturers, “*Don’t know the market needs*” was the major barrier for OEM to become ODM. In addition, “*Cannot afford high design investment costs*” and “*High market risk*” also make the transformation hindered. OEM producers are used to make contact with only a few major overseas customers. They do not have marketing and sales network to sell their own products or concepts if they have transformed to ODM.

For the preparation of final presentation, students are expected to conduct a SWOT (Strength, Weakness, Opportunity and Treat) analysis for both the OEM and ODM.



## Activity 4 SWOT analysis (OEM)

### Task:

Conduct a primary study for the Strength, Weakness, Opportunity and Threat analysis of OEM business model.

### Strength of OEM

---

---

---

---

---

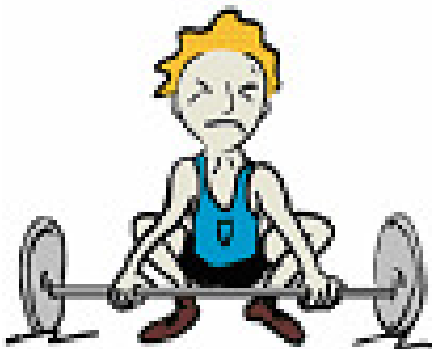
---

---

---



### Weakness of OEM



---

---

---

---

---

---

---

---



## Opportunity of OEM

---

---

---

---

---

---

---

---



## Threat of OEM



---

---

---

---

---

---

---

---



## Activity 5 SWOT analysis (ODM)

### Task:

conduct a primary study for the Strength, Weakness, Opportunity and Threat analysis of ODM business model.

### Strength of ODM

---

---

---

---

---

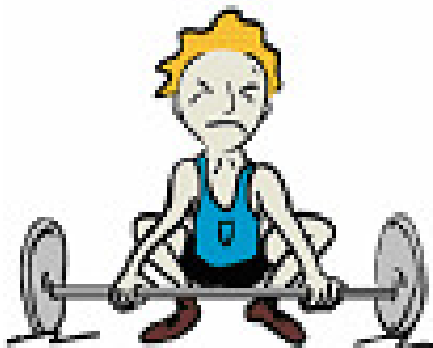
---

---

---



### Weakness of ODM



---

---

---

---

---

---

---

---



## Opportunity of ODM

---

---

---

---

---

---

---

---

---



## Threat of ODM



---

---

---

---

---

---

---

---



## Activity 6 Group Discussion and Presentation

### Task:

Discuss and prepare a group presentation about

- (1) Key success factors for OEM to become ODM; and
- (2) Barriers for OEM to be overcome to become ODM.



### Guidelines:

#### Introduction

*State the background of Hong Kong industry in this decade and the business model of most Hong Kong manufacturers.*

#### What are the threats of OEM? And Why?

*What happens to the existing OEM enterprises? List their challenges they are facing with.*

#### What are the advantages of ODM?

*List the advantages of ODM and give one or more successful examples for elaboration.*

#### How to become an ODM enterprise?

*List the factors to be considered when transforming into an ODM industry.*





We encourage collaborative learning throughout this case study; therefore peer assessment and evaluation on their learning were suggested. It is recommended that you take a minute to evaluate and reflect on your own learning after each lesson. A simple checklist rubric is provided. You will also take responsibility to assess the performance of other groups during the final presentation with the scored rubrics.



### Self / Peer assessment (checklist)

This assessment rubric can be used to keep your learning progress and schedule. Put “Yes” or “No” after each lesson. Teacher can easily check whether you can meet the lesson objectives.

<b>Student Name:</b> _____		<b>Team:</b> _____	
<b>Focus of Assessment: Teamwork</b>		<b>Date:</b> ____/____/____	
<b>Criteria</b>	<b>Self</b>	<b>Peer</b>	<b>Teacher</b>
1. I understand the lesson objectives.	Yes / No	Yes / No	Yes / No
2. I work with team members cooperatively.	Yes / No	Yes / No	Yes / No
3. I give my views responsibly.	Yes / No	Yes / No	Yes / No
4. I respect and listen to other members' ideas.	Yes / No	Yes / No	Yes / No
5. I can draw conclusion after this lesson.	Yes / No	Yes / No	Yes / No
6. I am satisfied with my learning today.	Yes / No	Yes / No	Yes / No



## Assessment rubrics (Presentation)

Students can use these rubrics for peer assessment of the final presentation.

Teacher needs to explain and discuss these criteria with the students.

Peer Assessment for Final presentation																	
Team:												Date:		___/___/___			
Assessors:												Class:					
Focus	No	Scores					Assessment Criteria					Scores					
Knowledge	1	1	2	3	4	5	← Understanding of the topic →					6	7	8	9	10	N/A
	2	1	2	3	4	5	← Content is consistent with the topic →					6	7	8	9	10	N/A
	3	1	2	3	4	5	← Content is supported with evidence →					6	7	8	9	10	N/A
	4	1	2	3	4	5	← Content is at appropriate level →					6	7	8	9	10	N/A
	5	1	2	3	4	5	← Show key concept in content →					6	7	8	9	10	N/A
Attitude	6	1	2	3	4	5	← Show effort in group discussion →					6	7	8	9	10	N/A
	7	1	2	3	4	5	← Show effort in information search →					6	7	8	9	10	N/A
	8	1	2	3	4	5	← Show effort in preparing presentation →					6	7	8	9	10	N/A
	9	1	2	3	4	5	← Show competency in IT skills →					6	7	8	9	10	N/A
	10	1	2	3	4	5	← Show organization skills →					6	7	8	9	10	N/A
Presentation	11	1	2	3	4	5	← Present their views and idea clearly →					6	7	8	9	10	N/A
	12	1	2	3	4	5	← Logical and consistent flow of ideas →					6	7	8	9	10	N/A
	13	1	2	3	4	5	← Have interaction with audiences →					6	7	8	9	10	N/A
	14	1	2	3	4	5	← Show appropriate use of visual aids →					6	7	8	9	10	N/A
	15	1	2	3	4	5	← Have eye contact with audiences →					6	7	8	9	10	N/A
Total Scores																	

\* Performance descriptors: 1 is incomplete; 5 is fair; 7 is good; 8 is very good; 9 is outstanding



## References

1. Hong Kong Productivity Council  
<http://www.hkpc.org/html/eng/common/index.jsp>
2. Wikipedia, the free encyclopedia  
[http://en.wikipedia.org/wiki/Original\\_equipment\\_manufacturer](http://en.wikipedia.org/wiki/Original_equipment_manufacturer)
3. Trade development Council  
<http://www.tdctrade.com/>
4. Opportunity photo  
<http://www.forearthonline.net/earthlove/opportunity.html>
5. Threat photo  
<http://thetrianglezone.com/ClassSafe.htm>
6. Strength Photo  
[http://dir.coolclips.com/Sports/Physical\\_Fitness\\_and\\_Exercise/Bodybuilding\\_and\\_Weightlifting/bodybuilding\\_and\\_weightlifting2.html](http://dir.coolclips.com/Sports/Physical_Fitness_and_Exercise/Bodybuilding_and_Weightlifting/bodybuilding_and_weightlifting2.html)

An abstract graphic of a tunnel-like structure composed of numerous colorful rectangular blocks in shades of orange, purple, blue, pink, yellow, and green. The blocks are arranged in a curved, perspective view, creating a sense of depth and movement towards the right side of the page.

**Technology Education Section  
Curriculum Development Institute  
Education Bureau  
The Government of the HKSAR**

**Developed by  
Institute of Professional Education And Knowledge (PEAK)  
Vocational Training Council**

