## Workshop Outline and Learning Methodologies

| Session | Methodologies | Chapters covered | Student Notes |
|---|---|---|---|
| **Workshop 1** | | | |
| 1. Introduction | • Presentation<br>• Group discussion | | |
| 2. Ethics in business | • Case study<br>• Group Discussion | Ch. 1 & 15 | Pg. 1 - 5 |
| 3. Executive management | • Case study<br>• Formal presentations | Ch. 2 | Pg. 6 - 17 |
| 4. Management reporting | • Case study<br>• Formal presentations | Ch. 4, 5 & 6 | Pg. 18 - 29, 37 |
| **Workshop 2** | | | |
| 5. Reboot | • Presentation<br>• Group discussion | | |
| 6. Treasury operations | • Case study<br>• Formal presentations | Ch. 8, 9, 10, & 17 | Pg. 30, 31, 34 - 46 |
| 7. Corporate finance | • Case study<br>• Formal presentations | Ch. 12, 15, 16, 17 & 18 | Pg. 32, 33, 47 - 55 |
| 8. Conclusion | • Presentation<br>• Group discussion | | |

# Discussion points

# Pre-workshop exercise 1

**Note.** *This ethical scenario relates to GMHK's parent company, China Golden Monkey Mobile Limited only. The only impact it will have on GMHK directly is through loss of share price and brand reputational damage to the broader Golden Monkey Mobile brand.*

## Part (a)

**Key considerations from each person's perspective**

**LP reference:** Part (a) refers to Chapter 1, Ethics in business

**David Chan**, CFO of CGMM (and Hong Kong CPA)

- David risks damage to his reputation in the company, in the accounting profession and in the telecommunications industry for allowing this scheme to occur "under his watch"
- He risks further extensive damage to his reputation if the four-day delay in reporting the scheme is discovered by the wider CGMM community
- David may lose his position for his four-day delay in reporting the scheme and for discussing it with his family
- David may find it difficult to find another CFO position
- David will most likely incur a personal financial loss on his shares (if any) in CGMM after the incident is reported
- The incident may affect the payment of his bonus and personal shares in this financial year
- David will need to consider HKEx *Rules governing the Listing of Securities (Listing Rules)* in relation to disclosure of price sensitive information (i.e. the graft scheme and the delay in reporting it).

  The relevant chapter of the Listing Rules is found at http://www.hkex.com.hk/eng/listing/listreq_pro/ListReq.htm > Post listing requirements > Continuing Obligation and Fees > Select Chapter 13 of the Main Board Listing Rules on Continuing Obligations.

  The HKEx also publishes an excellent guidance document on this issue entitled "Guide on Disclosure of Price Sensitive Information" available from the web link above and directly from http://www.hkex.com.hk/eng/rulesreg/listrules/listguid/documents/full-e.pdf
- There is an unlikely, and worst-case scenario, that CGMM will cease operation which would ruin David's professional and personal reputation, as well as severely dent the personal wealth of major shareholders, the Chinese government and other stakeholders
- Shareholders could commence legal proceedings against CGMM for which David would have to hold some responsibility

**Michael Yip**, Chairman of the Board and CEO of CGMM (and Hong Kong CPA)

- Michael risks damage to his reputation in the company and in the telecommunications industry for allowing this scheme to occur

- He risks further damage to his reputation if the one-day's delay in reporting the scheme is discovered
- It is possible (but unlikely) that Michael will have to resign his position as CEO and Chairman of the Board
- Michael will most likely incur a personal financial loss on his shares in CGMM after the incident is reported
- The incident may affect the payment of his bonus and personal shares in this financial year
- Michael will need to consider the HKEx listing rules in relation to the graft scheme and the delay in reporting it - found at http://www.hkex.com.hk/eng/rulesreg/regulatory.htm
- There is an unlikely, and worst-case scenario, that CGMM will cease operation which would ruin Michael's professional and personal reputation, as well as severely dent the personal wealth of major shareholders, the Chinese government and other stakeholders.
- Shareholders could commence legal proceedings against CGMM

**Holly Lee**, fund manager of ABC Funds Management

- The reasons for Holly taking part in the scheme up to now are unknown
- Holly has permanently damaged a promising career and future
- She is having second thoughts about accepting the bribe as this clearly places her into the realm of criminal activity
- Holly is facing losing her job at ABC Funds Management, losing her career, harming her personal and professional reputation, and damaging her friends and family
- Holly could be sentenced to gaol for her part in the scheme and this is more likely if she accepts the money

**Patrick Field**, enforcement officer at the Stock Exchange of Hong Kong Limited

- Patrick has two concerns – the shares he holds in CGMM, and the position he holds as enforcement officer at the HKEx. These two concerns are now in conflict since receiving notification of the scheme
- Patrick will lose money in his shares in CGMM once the graft scheme is stopped and the information becomes public. This is likely to be only a short-term loss; the scheme is not large enough to cause permanent damage to the share price.
- Patrick must act in strict adherence with the policies and procedures of the HKEx or he will lose his job/damage his career
- Patrick must make his decision with reference to the relevant HKEx listing rules found at http://www.hkex.com.hk/eng/rulesreg/regulatory.htm
- Personally, Patrick wants to protect his position and career advancement opportunities
- Professionally, Patrick needs to maintain the regulatory standards and reputation of the HKEx at all times

## Part (b)

**Ethical issues identified in the scenario**

**LP Reference:** Part (b) refers to Chapter 1, Ethics in business, Section 2 – the HKICPA Code of Ethics

**Key learning points/issues:** Part (b) examines the Code of Ethics in the context of the ethical case study. Students must identify the ethical issues and apply these issues directly to the Code of Ethics. All **five key principles of the Code** (integrity, objectivity, professional competence and due care, confidentiality and professional behaviour) are contravened to some extent in this scenario. Students must **identify these principles** and state **how they have been threatened** from the perspective of their allocated person and from the CPA perspective.

A fundamental principle of the Code of Ethics is **integrity**. There are several instances of non-compliance, or potential non-compliance, with this principle:

- The Code states that professional accountants should "**not be associated with information where they believe that information contains a materially false or misleading statement, or has been furnished recklessly**". Both **David and Michael** need to act quickly, correctly (and legally and ethically) to meet this principle. By waiting four days to inform Michael of the scheme, David has acted in contravention of the integrity principle.
- **Michael** has waited one day which is not ideal but places him in a stronger situation than David.
- **Holly** has contravened all elements of the Code. She has been neither straight-forward, honest, truthful nor fair dealing.
- **Patrick** must follow correct legal and HKEx procedures against the scheme conspirators and CGMM as soon as he is informed in order to act with integrity. There is no other course of action available to him.

A fundamental principle of the Code of Ethics is **objectivity**. There are several instances of non-compliance, or potential non-compliance, with this principle:

- **David and Michael** cannot allow bias, conflict of interests or undue influence to impact their professional judgement. The delay in David telling Michael of the scheme – four days – and the one day delay by Michael of informing the HKEx suggests that they have both allowed a conflict of interest (i.e. they would lose personally through a drop in share price and reputation) to initially influence their behaviour.
- **Holly** has clearly acted with self-interest, and has allowed Steven to exert undue influence over her behaviour. She has committed fraud and broken the law. None of her actions have been objective from the moment she agreed to implement the scheme.
- **Patrick** cannot let his personal ownership of CGMM shares influence his behaviour.

A fundamental principle of the Code of Ethics is **professional competence and due care**. There are several instances of non-compliance, or potential non-compliance, with this principle:

- **David and Michael**, as HK CPAs, have not exercised adequate professional competence because they did not identify any indication of the scheme prior to March 2011. This is particularly relevant to David because as CFO of the company it is his responsibility to monitor financial irregularities. He has also demonstrated a lack of knowledge of the HKEx listing rules. David missed the initial investment in October, and then the additional investment in January. David has clearly contravened this principle and should be questioned by the HKEx, other relevant authorities, and the HK Institute of Certified Public Accountants.

A fundamental principle of the Code of Ethics is **confidentiality**. There are several instances of non-compliance, or potential non-compliance, with this principle:

- **David** has contravened the principle by discussing the issue with his wife and father-in-law. He even allowed one full business day for his family members to act upon the information received (it is not stated that they did). This action is clearly unethical.
- It is not known whether **Michael** discussed the issue with anyone before he informed the HKEx, however he should not have delayed reporting the illegal activity.
- **Holly** has used confidential company information to act illegally with Steven. She has clearly contravened the principle.
- **Patrick** has not had a chance to act yet, but he must act immediately and without informing any external party.

A fundamental principle of the Code of Ethics is **professional behaviour**. There are several instances of non-compliance, or potential non-compliance, with this principle:

- **David** has so far acted within the law and has finally reported the contravention. He also needs to consider the HKEx listing rules. He has brought his profession and CGMM into disrepute by a) not identifying the contravention earlier, b) not informing Michael immediately and c) discussing the issue with his family.
- **Michael** has acted within the law and has reported the contravention with one day's delay. He also needs to consider the HKEx listing rules. This delay is minimal and should not damage his or CGMM's reputation to any large extent.
- **Holly** has contravened all elements of professional behaviour according to the Code and within her own profession of funds management. She has broken the law and should be punished appropriately.
- **Patrick** now has the chance to demonstrate correct professional behaviour.

Under the Code of Ethics the **chief threat** facing all parties is **self-interest**. David is set to lose his reputation when the graft scheme goes public. He may lose some personal investment monies, reputation in the company, the telecommunications industry, and the accounting profession. In the worse case, he may lose his position or even be questioned by the HKEx or other regulators about his delay in reporting the scheme. The only reasons David waited four days to report the scheme were obviously due to self-interest. Michael may lose out financially and in his reputation and in the worse-case scenario, he may lose his position. Holly has acted only in self-interest throughout. Even her second thoughts about accepting the bribe money may be because she recognises the legal danger in taking this last step – which is still (correctly) acting in self-interest. Patrick must overcome the threat of losing money on his CGMM investment in order to act correctly legally and ethically.

Under the Code of Ethics a threat being faced by David is **self-review**. David is now being forced to re-evaluate his previous judgement in regards to acting (or in this case, his non-action) upon finding out about the graft scheme.

Under **Part C** of the Code of Ethics relating to **Professional Accountants in Business (PAIB)** David has an "absolute duty to comply with the fundamental principles contained in Part A of the Code". The Code states that "professional accountants are encouraged, therefore, to establish an ethics-based culture in their employing organisations that emphasises the importance that senior management places on ethical behaviour". It is clear that Steven either a) directly contravened a strong ethics-based culture, or that b) **the ethics-based culture created by David and Michael in CGMM was inadequate**.

## Part (c)

**Using the AAA Model, highlight the best solution or course of action**

**LP Reference:** Part (c) refers to Chapter 1, Ethics in business, Section 5 – the American Accounting Association Model and Part 2, Section 2 – the HKICPA Code of Ethics

**Key learning points/issues:** In Part (c) students learn how to apply the AAA Model to an ethical scenario. They must show they have worked through the seven steps, applied the Code of Ethics throughout these steps, and come to a supported and ethical decision. This decision should be from the perspective of their allocated person and as a CPA.

# Discussion points

## Pre-workshop exercise 2

### Part (a)

Carry out a comprehensive **market analysis** of GMHK using **Porter's five forces model,** together with the **sixth force** - complementarity. Identify at least six points for each of six forces. Conclude whether the power of each force is high, medium or low.

The sample answer makes conclusions based on the author's perception of priority to the organisation. It is understood that there may be many more items than those included in the sample answer and that the ranking of the power of each force may differ significantly.

**All answers are acceptable as long as candidates are able to effectively argue the case for the item's inclusion and the ranking of each force if requested.**

**LP Reference:** Chapter 2, Section 7.

**Key learning points**: Students will conduct a full market analysis through the completion of a Porter's five forces model exercise on GMHK.

| Threat of new entrants | Threat from substitute products |
|---|---|
| **Scale economies**: The existing mobile phone market is at the end of its cycle and the four main players have relatively equal share.<br>It would be expensive for a new entrant to try and take a substantial component of the existing market and take on these strong brands.<br><br>**Product differentiation**: All four players are strong, existing brands. The market has already gone through a significant downsizing and all smaller players have been bought out by the large four players.<br><br>**Capital requirements**: Medium to high. Monkey Mobile brand produces their own handsets. For a competitior to do so would be very expensive. Status of other competitors in this area is unknown.<br><br>**Knowledge requirements**: All four players have access to R&D of their parent companies. A small player could not enter the market with these requirements, however another large global mobile brand could do so.<br><br>**Switching costs**: Low for customer when outside of contract. Customers are now able to switch their number when they switch supplier. Customer is "king" with little brand loyalty.<br><br>**Access to distribution channels**: Difficult for a small player to access due to deals with | Substitutes to traditional mobile phones:<br>• Fixed-line phones<br>• Computers and internet – laptops, handheld<br>  – Instant messaging<br>  – Twitter©<br>  – Skype© and other free online phones<br>  – IPhone©/Blackberry©<br>  – Facebook© and other social networking sites<br>  – Blogs<br>  • Emails<br>• Non-usage of mobile phones<br>• Traditional post<br><br>**Important note**: Most mobile phone providers offer IPhone/Blackberry's and other innovative handsets as part of their product suite and on the 3G network so these are both substitutes and suppliers. These substitutes often need mobile networks and technologies to operate.<br><br>**Conclusion**: Threat from substitute products is **medium to low**<br><br>Initially, easy to conclude that the threat of |

| | |
|---|---|
| manufacturers, licences for networks, relationship with regulators and government. Easier if the new entrant was another global multinational mobile phone company.<br>**Cost advantages of existing producers**: Monkey Magic has had close relationship to regulator and this is still closer than foreign-owned companies. Access to existing R&D is high.<br>**Conclusion**: Threat of new entrants is **low**<br>This is low in a captured market already dominated by four players all with links to major global telecommunication providers. Only likely new entrant would be another large global multinational who would probably not find market attractive due to existing 170% penetration. | substitutes is high due to ever-emerging, innovative and often free substitutes through internet technologies. However, on closer examination, all mobile phone providers now provide the easiest access to all computer and internet substitutes. |
| **Bargaining power of customers** | **Bargaining power of suppliers** |
| Customers will switch for better value-add products and for cost.<br>Little to no brand loyalty (Monkey Magic may have some as they are the only locally-owned supplier).<br>Considerations include:<br>• Each customer buys a small amount<br>• There are many customers so each individual customer holds little power<br>• All customers now need mobile technology, especially for business, so they are reliant on their mobile provider<br>• Switching costs are relatively low for each buyer<br>• Voice products are standard and network services the same. Differentiation sits with value-add products<br>• Customers force low prices from the players, especially retail customers<br>• Customer can get the same product for the same price from many suppliers<br>• Customers are extremely price aware and price sensitive<br>**Conclusion**: Bargaining power of customers is **high** | Suppliers are manifold and include:<br>• Telecommunication regulator<br>• Handset manufacturers<br>• Application manufacturers<br>• Online payment facilities<br>Without a network licence, suppliers cannot find a market for their product so suppliers are also heavily reliant on mobile phone companies and their network licences.<br>Handset and new technologies – such as the iPhone© – are must-haves for customers so all industry competitors must therefore sell them, meaning suppliers can set price and conditions.<br>If mobile companies have not developed applications themselves, then application creators hold a lot of power.<br>All suppliers are extremely important to the business especially in maintaining manufacturing costs and economies of scale.<br>Switching costs between handsets and applications within the same mobile company are relatively low.<br>**Conclusion**: Bargaining power of suppliers is **high**<br>The high bargaining power of suppliers is offset by the reality that they need access to the mobile networks and licences for their product (e.g. their |

| | |
|---|---|
| Customers are able to switch providers easily and at little cost (once any contract is completed) and have little brand loyalty. They will follow low cost and new innovative value-add. | handsets and apps) to reach the customer. |
| **Rivalry among current competitors** | **Additional 6th force - complementors** |
| Factors determining intensity of current competitors:<br>• Market rivalry is intense as competitors are competing for a greater market share in a stagnant voice market<br>• Switching cost is low so competition is fierce<br>• Capacity for each handset/application/ value-add needs to be high as individual unit price is low<br>• Uncertainty of each competitor's next move is low as new innovations in internet technologies and R&D are relatively unknown<br>**Conclusion**: Rivalry among current competitors is **high**<br>Competition is extremely fierce. All four players hold fairly even market shares. In this case, fierce competition is leaving market demand for mobile phones relatively unchanged as the market is at 170% penetration. Therefore costs must be cut in voice business to sustain competition. The market is expanding for value-add services and the intense competition is a stimulant to this expansion. | There are a number of complementary businesses which supply products to GMHK and other players. Some of these are also classified in the supplier forces. Complementors include:<br>• Network providers<br>• Telecommunications infrastructure suppliers<br>• Handset manufacturers<br>• Regulators<br>• Application creators<br>• Internet innovators<br>• High-speed internet providers<br>• Online payment facilities |

Note. A good student should be able to make a clear list of each force and **highlight both positives and negatives**. They should then be able to use these points to back up their assessment of the power of each force. As an extension activity, they should then be able to make an assessment of the overall profitability of the industry based on this analysis.

## Part (b)

In this section students are required to complete an **Ansoff product-market matrix** of GMHK. In this matrix identify at least three points under each category (option). Use the **conclusions from the Porter's five forces model** you have prepared in part (a) to assist.

The sample solution provides many more than three items for each category. It is understood that there may be many more items than those included in the sample solution.

**All answers are acceptable as long as candidates are able to argue effectively the case for the item's inclusion if requested.**

**LP Reference:** Chapter 2, Section 11.2

**Key learning points**: Students will conduct a strategic choice analysis through the completion of an Ansoff product-market matrix.

(a) **Current products and current markets: Market penetration**

(i) Increase market share of existing value-add products in current HK market

(ii) No real product differentiation in an already crowded market so point (i) may be difficult

(iii) Low risk strategy but potentially a very low gain as all competitors have the same value-add services on the market

(iv) Increase market share of existing voice business in HK market

(v) Adding to voice business occurred from 2009 – 2010 through increased focus on business customers. No growth in retail customers.

(vi) Only small growth in business voice business and this is expected to be ongoing due to current 170% market penetration

(vii) Again, low risk strategy but almost certain to be low gain

(viii) No known government subsidiaries

(ix) Transfer of network from 2G to 3G is ongoing and not expected to provide greater market penetration

(x) Current market has reached saturation point

(xi) No capital investment needed

(xii) No R&D cost

(xiii) Would need to largely differentiate on price to achieve increased market which may impact profit if costs are kept high. Price is already a tight determiner in the market

(xiv) Driving out existing competitors, who are all subsidiaries of large mobile providers, is very difficult. All small competitors already driven out of market

(b) **Present products and new markets: Market development**

(i) No new geographical market available – GMHK only to operate in Hong Kong as a subsidiary of its parent company

(ii) Market as a handset wholesaler is possible from mainland China acquisitions (potentially operating as two OEMs). Potential to move costly manufacturing of handsets for Monkey Magic over entire group of companies and selling to other subsidiaries as an initial step

(iii) Using existing handset products and current acquisition, but capital investment is required for the next acquisition to make larger-scale handset production possible

(iv) No R&D costs incurred by GMHK, but potentially some R&D by parent company

(v) Need to examine economies of scale and viability – is it viable for GMHK to produce handsets to on-sell to other subsidiaries if specialist handset suppliers are already producing handsets at the lowest possible cost?

(vi) There is risk with the handset manufacturing strategy as it requires capital investment and a whole new strategic outlook for the company

(vii) This could also be classified as a Diversification strategy and certainly carries the higher risk usually associated with that strategy

(viii) Possibility of new distribution channels for voice and value-add business – currently sold online and through retail outlets

(c) **New products and present markets: Product development**

(i) Leverage off the existing parent company R&D capability to push out the three new value-add products (Mobile Gaming, Mobile TV, Mobile Filipino)

(ii) No capital investment in R&D for GMHK so low risk from the capital investment perspective

(iii) Appears that the existing Hong Kong market is ready for new products due to continuous product innovation in value-add services globally

(iv) Likelihood that competitors will also be launching similar products so important to be first to market (already Mobile Gaming on market)

(v) Try to offer product differentiation on new products (e.g. partnerships with online gambling providers)

(vi) New product development in HK market carries low risk as consumers have shown they want new value-add services both in HK and globally

(vii) Company is able to exploit existing sales, market and retail outlets to push out new product

(d) **New products and new market: Diversification**

(i) No new geographic market – Hong Kong only so no diversification of new value-add products into new markets

(ii) Existing domestic market, retail market and now the business market becoming saturated and new value-add products will be launched in present markets only

(iii) Strategy of expanding handset production from Monkey Magic only to other subsidiaries of the parent group could be classified as a Diversification strategy in this category. **See points b(ii) – b(vii)** for exploration of this strategy

(e) **Withdrawal**

(i) GMHK is the only Chinese-owned mobile phone supplier and there would be a large government backlash against any withdrawal from Hong Kong market

(ii) Difficulties with withdrawal from Hong Kong market as GMHK is a wholly owned subsidiary servicing one market only – withdrawal from market would mean closure of business

(iii) Withdrawal from all handset manufacture as opposed to expansion including divestment of existing OEM – see divestment below

(iv) No withdrawal of existing products in existing markets as voice business and value-add business are both integral to GMHK revenues and to the products supplied by a mobile phone provider generally

(f) **Divestment, demerger and privatisation**

(i) Divestment and demerger only apply to GMHK

(ii) Withdrawal from all handset manufacture as opposed to expansion including divestment of existing OEM – exit barriers include high inventory, staff redundancies, difficulty of selling to other handset manufacturers

# Part B Executive Management

Penny Wong, CFO, has gathered you all together for a GMHK organisational business strategy planning session.

GMHK needs to decide on a cohesive and unified corporate strategy for the medium-term to present to the Board of the parent company.

Penny has asked you to evaluate **four proposed strategies** using recognised models, evaluate the options and consequences of implementing each option, and ultimately conclude on the best strategy recommendation for the management of GMHK to take to the Board.

Penny asks you to divide into four groups. Each group is to consider **one** of the following strategies:

- Cost leadership (one of Porter's generic strategies)
- Differentiation (one of Porter's generic strategies)
- Focus (one of Porter's generic strategies)
- Growth by acquisition

***Required***

**(a) In your group, prepare a list of positives and negatives for the assigned strategy. Use the conclusions from the Porter's five forces market analysis and the Ansoff product-market matrix you prepared prior to the Workshop to assist.**

**(b) Prepare a presentation to the Workshop group on the results of your group's assigned strategy. Select a group representative.**

**(c) The Workshop group should then discuss all the presentations and conclude which strategy should be pursued by GMHK and presented to the Board. Draw upon the JS&W (*Exploring Corporate Strategy*) checklist to assess the four options and decide on the appropriate choice.**

# Discussion points

# Strategic Position and Analysis

For the business strategy workshop each group was asked to consider **one** of the following strategies:

- Cost leadership (one of Porter's generic strategies)
- Differentiation (one of Porter's generic strategies)
- Focus (one of Porter's generic strategies)
- Growth by acquisition

**It is understood that there may be many more items than those included in the suggested solution. All answers are acceptable as long as candidates are able to effectively argue the case for the item's inclusion if requested.**

## Part (a)

**LP references**

Part (a) refers to the work prepared in the pre-workshop exercises. LP references are Chapter 2, Section 9.2 and Section 11.2. Students should also refer to Chapter 2, Section 12 which presents Porter's generic strategies. Students also need to refer to case study material.

**Key learning points**

Students must learn to critically assess their option and provide a clear set of positives and negatives for implementing a particular strategy. Students need to be able to use completed market analysis (Porter's five forces model), strategy comparison tools (Ansoff product-market matrix), and knowledge of Porter's generic strategies to assess the suitability of a business strategy.

### Solution: Positives and negatives for the assigned strategy

### Cost leadership

To produce the products at the **lowest cost** in the industry

| Positives | Negatives |
|---|---|
| Has set up own handset manufacturer, Tiger Handsets, to achieve economies of scale | Many mobile phone companies do not operate any of their own manufacture, and handsets is an example of this. Handset suppliers are plentiful and competitive so mobile phone companies have generally not found great cost savings by taking manufacture in-house. This suggests there is actually no substantial cost saving of implementing this strategy |
| Tiger Handsets is based in mainland China and produces solely for Monkey Magic phones. Therefore lower cost of handsets would be expected than for competitors who buy from suppliers | Transfer costs from manufacturer to retail are too high at 125% |
| GMHK inventory management is complex and costs high so cost control is an issue needing attention from management | Handset inventory is too high and inventory management needs addressing |
| Already uses cheaper Chinese labour | Working capital management is poor |

| Positives | Negatives |
|---|---|
| compared to foreign competitors | |
| Able to exploit R&D from China Golden Monkey Mobiles by producing the latest value-add services | Costs are already very tight across the industry and cost leadership may not produce the required revenue increase |
| Cost control is essential in the industry particularly in voice business where the market is not expected to grow | However, cost leadership is not as essential as ensuring costs are at the same level as competitors' who are already working in a tightly cost controlled market |
| No known issues on staff or equipment productivity are highlighted in case study | |

## Differentiation

Exploitation of a product or service that the industry as a whole believes to be **unique**.

| Positives | Negatives |
|---|---|
| Launch one breakthrough product in existing market – *Mobile Filipino*. No other provider is offering this yet and it will therefore capture the large Filipino market in Hong Kong. Best new value-add product for differentiation strategy | Ensure need for product is fully tested in the market prior to further development and launch |
| Launch improved product (though not radically different from The competition) but it is superior to the others. This product is the value-add *Mobile Gaming* and needs to be launched in partnership with major online sites to make it the premium service. This is a secondary value-add product for differentiation strategy but actually has the potential to produce largest revenue | *Mobile Gaming* is being offered by other competition but not in the premium service. GMHK needs to get timing correct (and quickly) to ensure market is captured |
| *Mobile TV* is the third product which all other providers have launched. GMHK needs to launch this to keep up with other providers only not as a differentiation strategy | Competition has already all launched *Mobile TV* |
| Uses R&D of parent company so low product development cost | Ensure quality and responsible product with no faults while also ensuring speed to market |
| Uses existing retail outlets and online sales to sell all three products | Still only being used in HK market which is saturated, however value-add services are growing |
| Targeting existing mobile users and new users | The two strongest value-add products need to be enough for customers to switch mobile phone providers in order to be successful |
| Uses existing departments – sales, marketing etc | |
| Can be easily integrated into the existing business | |
| Use the strong Monkey Magic brand to differentiate from competition | |

## Focus

Concentrate attention on one or more particular segments or **niches** of the market only. Two types – cost focus and differentiation focus.

| Positives | Negatives |
|---|---|
| Cost focus – cost leadership for the handset market segment is most likely due to current manufacturing capability | Cost focus – needs to address working capital and inventory management before handset cost leadership can occur |
| | Cost focus – handset cost leadership is in the voice business sector which has already reached market saturation |
| | Cost focus – margins are too tight on handsets in industry to provide true cost leadership in this segment |
| Differentiation focus – could focus on new value-add products and provide differentiation there e.g. production of a luxury suite of value-add mobile phone applications | Differentiation focus – competitors also launching new and similar value-add products globally |
| Differentiation focus – has access to no/low cost R&D to develop the value-add segment | Differentiation focus – innovation is constant and very difficult and expensive to be first to market with new value-add products, particularly as they are often at a low per unit price |
| Differentiation focus – potential to leverage this R&D to develop new value-add products e.g. luxury suite of mobile phones | Differentiation focus – no such thing as “luxury” suite of applications at this stage that is not already incorporated into other applications – however the development of this is possible |
| | Differentiation focus – mobile phones are a broad product and narrowing down to a niche product will mean economies of scale are sacrificed and too much of the market is lost |

## Growth by acquisition

Grow the company by acquisition of **similar providers** and/or enter into **new product lines**.

| Positives | Negatives |
|---|---|
| GMHK is the largest mobile provider in Hong Kong and has the backing of the parent company to make further acquisitions | There are no more small to medium mobile phone providers to acquire in the Hong Kong telecommunications space. Remaining three are large global corporates which are not likely acquisition targets |
| GMHK is thinking about acquiring second handset OEM to expand the manufacture of handsets to sell to other subsidiaries | Need to examine economies of scale and viability – is it viable for GMHK to produce handsets to on-sell to other subsidiaries if specialist handset suppliers are already producing handsets at the lowest possible cost? |

| Positives | Negatives |
|---|---|
| Has monies available to fund acquisition | Will need to resource new manufacturing administration and finance functions, as well as development of new strategies for selling to the other subsidiaries |
| | Entirely dependent on parent company approval |
| | Largest risk is with the handset manufacturing strategy as it requires capital investment and a whole new strategic outlook for the company |

## Part (b)

In part (b) students are required to prepare a presentation to the Workshop group (of no more than 10 minutes) on the positives and negatives of their group's assigned strategy.

**LP reference**

There is no specific LP reference.

**Key learning points**

In this section students are working critically to develop a confident, persuasive and coherent business presentation that delivers key points within the required timeframe.

## Part (c) Strategic Choice

After listening to all presentations regroup and decide on the best strategy to recommend to the Board of China Golden Monkey Mobiles.

**LP reference:** Chapter 2, Section 14.1 and 14.2

**Key learning points**

Students should apply the **JS&W** (Exploring Corporate Strategy) **checklist** for assessing the four strategic options presented and to decide on the appropriate choice. Students will need to demonstrate **how** they reached their proposed strategy and effectively argue for the implementation of their strategy.

**Note**: The suggested answers below are the opinions of the author only and are only provided as guidance. The students may be able to present persuasive arguments for or against the implementation of any of at least three of the four strategies (it seems clear that focus is not a suitable strategy).

## Cost leadership

| | |
|---|---|
| **Suitability** | Working capital management and high inventories have to be addressed to fit in with strategic aims<br>Any manufacturing has to be responsible, offer value, be innovative and produce quality<br>Manufacturing to reduce costs may be taking away resources from innovative and new product development to increase revenues<br>Operating environment is very tight on cost control<br>Most mobile phone companies are not manufacturers |
| **Acceptability** | Shareholders do not expect a mobile phone company to be a handset and parts manufacturer<br>Cost leadership is an expectation of all stakeholders at all times<br>Customers expect low cost products and shareholders expect return on investment<br>No ethical or social responsibility issues with manufacturing offsite |
| **Feasibility** | Finance department needs to address working capital management and inventory issues<br>Corporate is looking at acquiring a second handset production facility but this is for a growth by acquisition strategy<br>Likely that producing handsets for Monkey Magic may be tying up company funds and resources for little cost saving |
| **Conclusion** | **No**.<br>While GMHK has work to do on reducing costs to maintain profitability, cost leadership is not an appropriate number one business strategy |

## Differentiation

| | |
|---|---|
| **Suitability** | Strategy fits in with mission statement and all company values, particularly innovation and entrepreneurship<br>New products can be launched in the existing organisational environment |
| **Acceptability** | Yes, shareholders and all stakeholders would expect new, innovative value-add products to enhance the growing value-add product revenue line |
| **Feasibility** | Strategy can be launched using parent company R&D<br>Strategy can be launched using existing organisational resources<br>Time will need to be allocated to launch development, product tweaking and sales and marketing |
| **Conclusion** | **Yes**. This is the strongest strategy option<br>GMHK can launch product differentiation with limited R&D cost using existing resources. It has a new product in *Mobile Filipino* and an improved product with *Mobile Gaming*. It is already placed as market leader with the strong Monkey Magic brand<br>This is a relatively low risk, high return strategy |

## Focus

| | |
|---|---|
| **Suitability** | Corporate vision is to innovate in the mobile market responsible. Focus on niche areas of costing does not fit in with either company vision or operational circumstances |
| **Acceptability** | Shareholders would be frightened by a focus away from the broader mobile market and into niche products<br><br>Stakeholders such as suppliers are not geared towards niche production at this stage |
| **Feasibility** | Company can access R&D to develop niche products<br><br>Company needs to fix cost issues with handsets manufacturer regardless of the implementation of any focus on cost strategy |
| **Conclusion** | **No**<br><br>There are too many difficulties faced with adopting either a focus on cost or a focus on differentiation strategy. Mobile phones are a broad product globally and any niche product development and marketing should occur within the broad product base. |

## Growth by acquisition

| | |
|---|---|
| **Suitability** | It does not fit in with corporate mission or values – in fact, it sits outside the core product offering<br><br>The first acquisition does fit in with the current operational environment of the other manufacturing site, however there is no set-up established for on-sell to other subsidiaries |
| **Acceptability** | All stakeholders would find these very risky and potentially dangerous |
| **Feasibility** | New resources would need to be bought into the company to fulfil this strategy (in particular, specialist wholesale knowledge) |
| **Conclusion** | **Maybe**<br><br>This is by far the most risky and expensive strategy, but could provide the highest long-term return if GMHK becomes the handset wholesaler to the entire China Mobiles group. From there, it could look at becoming an even wider wholesaler. This would be an entirely new product stream and could be very profitable - but would it work in an already crowded handset market with far more experienced operators? |

The group representatives are to present their final Board recommendation to the Workshop group, focusing on the reasons for the decision in comparison to the other strategies presented.

**Key learning points**

As with part (b), in this section students are working critically to develop a confident, persuasive and coherent business presentation that delivers key points within the required timeframe. The group itself develops the presentation but the skill of actual presentation falls to the allocated members. Workshop facilitators should note that there are several presentations throughout the workshop so each student will have the opportunity to give a presentation.

# Discussion points

## Pre-workshop exercise 3

This pre-workshop exercise should not present any difficulties for students. The calculations should be fairly straightforward. However, the exercise encourages students to start thinking about the **limitations** of **absorption costing systems** and **cost-based transfer pricing systems**. These issues will be explored in more depth in the workshop exercises.

**LP reference**

Students should be familiar with absorption costing from their earlier studies, but Chapter 4 Sections 3.2 – 3.5 covers pricing systems based on **absorption costing**. Chapter 6, and particularly Sections 5, 7 and 9 covers relevant aspects of **transfer pricing**.

**Key learning points**

Students should be able to calculate expected unit costs for each of the three types of model using absorption costing and absorption rates given in the pre-workshop exercise handout. These calculations should not present any difficulty and should not take much time to complete.

Students are then required to think about the limitations of the costing system they have used and the transfer prices that are produced. These limitations will be considered in more detail in the workshop exercises, but the main learning points at this stage are:

**The manufacturing division makes its profits from the mark-up on manufacturing cost in the transfer price**.

The only way that its profits can vary are:

– when actual costs are higher or lower than expected cost: reported profits can be improved by trying to **reduce costs**

– when the manufacturing division is working at **full capacity**, so as to avoid charges for under-absorbed overheads. However actual production each month depends on the volume of demand from the retail outlets, and this is outside the control of the management of Tiger Handsets.

For the managers of the **retail outlets**, the price they must pay for handsets depends on this '**arbitrary**' costing system. They rely on the manufacturing division keeping expected costs as low as possible, but even so some model types are likely to be over-priced and some under-priced in terms of the comparative prices of handsets on the market from rival handset producers.

These basic points will be taken forward into the workshop exercise.

## Part (a)

**Current absorption costing method**

| | Model A | Model B | Model C |
|---|---|---|---|
| | **HK$** | **HK$** | **HK$** |
| Manufacturing cost per unit | 126.00 | 84.00 | 203.00 |
| Full cost per unit (other overheads = 100% of manufacturing cost) | 252.00 | 168.00 | 406.00 |
| Transfer price per unit (225% of manufacturing cost) | 283.50 | 189.00 | 456.75 |
| **Gross profit per unit** | **157.50** | **105.00** | **253.75** |
| Gross profit % | 55.6% | 55.6% | 55.6% |
| **Net profit per unit** | **31.50** | **21.00** | **50.75** |
| Net profit % | 11.1% | 11.1% | 11.1% |

There are problems with the costing system used, performance reporting for the manufacturing division and the transfer pricing system.

**The use of traditional absorption costing**

- The **apportionment** of manufacturing overhead costs between products is based on **direct production costs**. It would appear that many costs are related to the **number of batches** produced and the number of units produced, rather than direct costs. It is also possible that a **different basis** for absorbing general production overheads (such as a machine time rate) might be more appropriate than a rate based on direct costs.
- Overhead costs are very high relative to direct costs.
- Absorption costing systems can be quite arbitrary in the way they divide overhead costs between products. Some products might be given a relatively large overhead cost and some a much lower overhead charge.
- When overhead costs are high relative to direct costs, this **arbitrary** sharing of overhead costs raises questions about the usefulness of the costing system. It is not clear that these fully absorbed costs have any real meaning, for the purpose of cost control or pricing products.
- In addition, administration costs and distribution costs are not apportioned between products, although the mark-up in the transfer price is large enough to ensure that the transfer price covers these costs.

**The use of this system for performance reporting in the manufacturing division**

**A system of performance reporting** should make management **accountable** for the aspects of operations for which they are responsible. Ideally, the system should **motivate** the managers to improve the performance of their division, especially when rewards (such as annual bonus payments) are linked to achieving performance targets.

**Reporting profitability for products** should also help management to identify which products are more profitable than others, so that decisions can be taken about **re-allocating resources** from products that are relatively unprofitable to the more profitable products.

In both respects, the current performance reporting system fails in these objectives.

- The expected gross profit and net profit per unit are higher for units with a higher unit cost, but the profit margin (as a percentage of the transfer price) is the same for all units. This is because the sales price (transfer price) is a fixed percentage of manufacturing cost.
- The only way in which the manufacturing division can improve its performance is to keep costs as low as possible. If costs can be kept below expected/standard costs, the favourable cost variances will improve profitability.
- However, expected costs appear to be based on budgeted costs and production volumes within Tiger Handsets. There does not appear to be any use of target costing, and attempting to reduce costs to a more competitive level.
- Profitability also depends on working at full capacity, to avoid under-absorption of overheads. However, the demand for handsets from the retail outlets is outside the control of the manufacturing division; therefore the manufacturing division cannot control profitability by trying to ensure that the factory works at full capacity. Production volumes are outside its control.

## Part (b)

**Weaknesses in the transfer pricing system**

The transfer pricing system offers **no incentive to the manufacturing division**. If actual costs are equal to expected costs, the manufacturing profit centre will be indifferent about the transfer prices that it charges, provided that it can manufacture at full capacity each month.

The method used to apportion manufacturing overheads affects the relative costs of the products. This affects the transfer prices, since transfer prices are based on cost. It also affects the selling prices for handsets by the retail outlets, because the retail outlets are required to earn a minimum profit margin on cost.

The retail outlets are required to ‘buy’ handsets from the manufacturing division, and have no influence over the prices that they pay.

The handsets that retail outlets might be able to sell most easily because of the attractiveness of the model design may be products that have a high cost and high transfer price. If so, it may be difficult for retail outlets to sell those products that might have the most profitable commercial potential.

The transfer prices take no account of consumer demand factors, but are based on cost plus when the costing system is inadequate.

# Conclusion

The costing, performance reporting and transfer pricing systems are all **inadequate**, and do not contribute to effective management decision-making within the company.

## Part C Management Reporting

Penny Wong is concerned about the **continual disputes** between the manager of Tiger Handsets and the managers of the retail outlets, about the cost of the handsets and the monthly demand for production quantities. She thinks that **changes are needed** to the systems of costing within the manufacturing division, performance reporting and transfer pricing. Any such changes will have to be approved by the board of GMHK.

One suggestion that she has already mentioned to the board is a change in the costing system, from the current absorption costing system to a system of activity-based costing (ABC). Transfer prices would continue to be calculated as a mark-up on cost, but she thinks that ABC will lead to more reliable reporting of costs and profits.

The board has therefore asked her to arrange a presentation on a change to activity-based costing, together with a recommendation about whether such a change should take place.

She has asked you to carry out research into ABC and put forward conclusions and recommendations based on your findings. Because of the limited amount of time available, she has asked you to restrict your analysis to the costs and profitability of three models of handset produced by Tiger Handsets.

She has asked you to calculate what the transfer prices and full costs would be for each of the three models if a system of activity-based costing were to be used. The following information is relevant. (Some of this information was provided in the pre-workshop handout. However, you should also refer to the information provided in the pre-workshop exercise for Management Reporting.)

- Models are manufactured in batches. The batch size for Model A is 4,000 units, for Model B 3,000 units and for Model C 2,000 units. The manufacturing division produces 60 batches of different handset models in a typical month.
- Your investigation suggests that for most manufacturing overheads (HK$ 5.6 million each month) there is no obvious cost driver other than direct costs of production. These overhead costs should be allocated to product costs at a rate of 140% of direct costs.
- However, for manufacturing overhead costs totalling HK$ 2.4 million each month, the number of batches produced is a suitable cost driver, and for inspection costs (included in manufacturing overheads) the most suitable cost driver is the number of units inspected, since all units are inspected individually. Inspection costs total HK$ 2 million each month.
- Total number of handsets produced by Tiger Handsets each month: 80,000 units.
- Administration and distribution costs, which are HK$ 14 million each month and make up one half of the total costs of the manufacturing division, are absorbed at a rate of 100% of the manufacturing cost to obtain the full cost of production. However they are not used in the calculation of transfer prices.

***Required***

**(a)** **Calculate the manufacturing cost per unit, the transfer price and the full cost per unit of each model based on the information provided, using an ABC approach to measuring manufacturing cost. The transfer price should be calculated as 225% of the manufacturing cost.**

**(b)** **Compare the gross profit per unit, net profit per unit and profitability ratios that would be reported by Tiger Handsets for each of the three models using:**

**(i)** **the current absorption costing system, and**

**(ii)** **a system of activity-based costing.**

**Explain how the management of Tiger Handsets might seek to maximise the profitability of the division, if there is a change from a cost plus transfer pricing system based on the current absorption costing system to a cost plus transfer pricing system based on ABC.**

**(c)** **Consider the transfer pricing arrangements from the position of the retail outlets that 'buy' their handsets from Tiger Handsets. Explain the likely effect on sales of the handset models if the system of ABC were to be introduced, and suggest with reasons whether this would be of any benefit to the managers of the retail outlets, whose bonus payments depend partly on sales of handsets.**

**Recommend whether a system of activity-based costing should be introduced for costing and performance reporting within the manufacturing division and for the transfer pricing of handsets.**

# Discussion points

**Case 1** of the Management Reporting workshop follows on from the pre-workshop exercise, in which students were asked to calculate unit costs, transfer prices and profitability for three models of mobile phone handset.

Case 1 also asks them to consider the possible consequences of switching to a cost plus system of transfer prices in which unit costs are calculated using activity-based costing.

Part (a) of the requirements involves some computational work, but if students understand ABC, the calculations should not take much time, and students should be able to spend most of the time discussing the issues raised by the other requirements for the exercise in parts (b) and (c).

## Part (a)

### LP references

The LP reference is Chapter 4, Sections 2.4 and 2.11 for activity-based costing and Chapter 6 Sections 7 and 10 for cost-based transfer pricing. Students may also wish to refer to Chapter 4 Sections 3.2 - 3.4 on cost plus pricing.

### Key learning points

For part (a), students must demonstrate their understanding of the basic methodology of activity-based costing. The results produced from these computations will be used for analysis in the other parts of the exercise.

**(a) Activity-based costing method: transfer prices and profitability**

*Workings*

Batch-related costs: Cost per batch 2,400,000/60 batches = $40,000

Inspection costs per handset: 2,000,000/80 000 = $25

| | Model A | Model B | Model C |
|---|---|---|---|
| Number of units produced and transferred | 8,000 | 15,000 | 2,000 |
| Number of batches each month | 2 | 5 | 1 |
| | HK$ | HK$ | HK$ |
| **Direct cost** | 288,000 | 360,000 | 116,000 |
| **Manufacturing overheads:** | | | |
| - Batch-related costs (@40,000) | 80,000 | 200,000 | 40,000 |
| - Inspection-related costs (@25) | 200,000 | 375,000 | 50,000 |
| - Other overheads (140% of direct costs) | 403,200 | 504,000 | 162,400 |
| **Total manufacturing costs** | **971,200** | **1,439,000** | **368,400** |
| **Administration and distribution costs** | 971,200 | 1,439,000 | 368,400 |
| **Total costs** | 1,942,400 | 2,878,000 | 736,800 |
| | **HK$** | **HK$** | **HK$** |
| Manufacturing cost per unit | 121.40 | 95.93 | 184.20 |
| Full cost per unit | 242.80 | 191.87 | 368.40 |
| Transfer price per unit (225% of manufacturing cost) | 273.15 | 215.84 | 414.45 |
| Gross profit per unit | 151.75 | 119.91 | 230.25 |
| **Gross profit %** | **55.6%** | **55.6%** | **55.6%** |
| Net profit per unit | 30.35 | 23.97 | 46.05 |
| **Net profit %** | **11.1%** | **11.1%** | **11.1%** |

## Part (b)

### LP references

Part (b) requires students to compare the costs, prices and profitability that they calculated in their pre-workshop exercise with the comparable figure using ABC, and to comment on what the comparison shows about costing systems, profit centre accounting and transfer pricing.
LP references are Chapter 4, Sections 2.4 and 2.11 for activity-based costing and Chapter 6 Sections 7 and 10 for cost-based transfer pricing. Students may also wish to refer to Chapter 5 Section 3.1 to remind themselves about profitability ratios.

### Key learning points

Students need to identify that within a system of transfer pricing based on **expected cost plus** (standard cost plus), **profitability ratios** are the same for every product, provided that actual costs equal expected cost. A manufacturing division that 'sells' its output to the retail divisions has little control over its profitability, except by trying to operate at full capacity and by keeping actual costs as low as possible (controlling expenditure). There is no incentive for the manufacturing division manager to consider whether it would be better for the company to produce some types of handsets rather than others.

The different costing methods produce different unit costs and different transfer prices. Higher unit profits are obtained by Tiger Handsets for the units that cost more to produce. However, profitability as a percentage of the selling price is the same for all products, if actual costs are the same as expected costs.

The manufacturing division sells its handsets for expected cost plus, which means that its profit margins will be a fixed percentage amount unless its actual costs are higher or lower than the expected cost. The only way in which the manager of the manufacturing division can influence the profit earned by the division is to try to control costs and operate at full capacity. Making handsets with high direct costs would also increase profitability, since profits are based on cost, but the demand for handsets is outside the control of the division.

It therefore does not matter to the management of Tiger Handsets which models of handset they make, provided the division operates at full capacity and earns a profit on its monthly costs.

Changing from the current absorption costing system to ABC would not affect the situation. ABC allocates overhead costs in a different way, but total overhead costs do not change. If transfer prices are based on cost plus, the effect will be to alter the profitability of the different handset models, but leave total divisional profit unchanged.

Changing to ABC may help the management of Tiger Handsets to understand its overhead costs better, by recognising the cost drivers for those costs. This may help management to control costs better or reduce costs. However from the point of view of the manufacturing division (Tiger Handsets), a transfer pricing system based on ABC and cost plus pricing would not make any significant difference.

It might also be useful to mention that a system of transfer pricing based on actual cost plus would be unacceptable, because the manufacturing division would be able to increase its profits by incurring excessive costs, and making a profit on the over-spending.

## Part (c)

**LP reference**

Chapter 6, Sections 5, 6, 7 and 10 on transfer pricing.

**Key learning points**

Part (c) continues the analysis in Part (b), but looks at the situation from the point of view of the divisions that 'buy' transferred goods from the manufacturing profit centre. Students need to recognise that when transfer prices are decided using cost plus, a change in the method of calculating unit costs will result in a shift of costs from some products to others, and changes in transfer prices. Some prices will go up and some will come down. This will have implications for the ability of the retail outlets to sell the products, especially when they are required to earn a minimum profit percentage on their sales. Some models will be easier to sell to customers when their cost and price come down. Models whose cost and price go up will be more difficult to sell.

Students will probably identify the need to price models in the retail outlets at a **market price** (or competitive price, in comparison with the models of other handset producers). A cost plus transfer pricing system will not motivate the retail outlets to do this. The requirement for retail outlets to earn a minimum percentage profit on the transfer price should be criticised for its lack of commercial realism.

With ABC, **the transfer price of Model B would be higher** than it is now, which means that if the retail outlets try to sell this model at a mark-up on cost, it will probably be more difficult to sell. The cost and transfer price of Models A and C would be lower.

This may explain why the managers of the retail outlets have some difficulty in selling these models, but have not complained about the transfer price for Model B.

The effect of a change in the system of costing for handsets will be that some models will be transferred at a higher price and some will be transferred at a lower price, and this is likely to affect the ability of the retail outlets to sell them.

The retail outlets are required to price phones so as to earn at least 20% on the transfer cost. The prices they might charge may be higher or lower than prices of handsets made by rival producers, but it will be difficult for the retail outlets to compete effectively. This requirement to sell handsets at a minimum profit margin on cost seems to lack **commercial sense**, because it ignores customer demand and the availability of similar handsets in the market that are made by rival producers.

It is not clear how the change in the transfer prices will affect the demand for models that are given away as part of a subscription agreement with customers. Models that are given away do not earn any profit. However, retail outlets must bear the cost of 'give-away' handsets and they will presumably want to give away models that cost them less to buy in from Tiger Handsets. However, the demand for different models may be driven by customer demand rather than cost. Customer demand will be influenced by price (for customers buying handsets), and perceived quality, design features and value (for customers receiving a new handset when they renew their mobile phone subscription, as well as for customers buying handsets).

The managers of the retail outlets may be less concerned about the transfer cost of handsets that they give away than for handsets that they try to sell. This is because mobile phone subscriptions are likely to be high relative to the cost of the handsets, and it is worth giving away a valuable handset in order to win new subscriptions. The main problem could well be restricted to the sale of handsets, where price will be a key factor. If retail outlet managers are paid a bonus for the number of handsets they sell, or the profitability of handset sales, they will complain about handsets that are priced too high for the market because of their high cost.

# Part C Management Reporting

Penny Wong has decided that a switch to activity-based costing will not resolve the difficulties with the transfer pricing and performance measurement systems within GMHK, and she would like the board to consider making **more radical changes**.

She thinks that changes are needed to make GMHK more commercially aware and competitive. This could mean taking measures to reduce costs and also giving the managers of the profit centres more control over the factors that determine their divisional performance.

She has already discussed some ideas with Matthew Xu, the CEO, who believes that the telecommunications industry is quite unique in its costing structure, and that any systems of performance reporting should recognise the characteristics of the industry.

Penny Wong has asked you to prepare a presentation to the Board which explains the problems with the current system and suggests recommendations for changes in the future that might provide incentives to management to improve the competitive performance of the company's divisions and the company as a whole.

The following information should be considered:

- There are two production departments in Tiger Handsets. One department produces components for mobile handsets and the other department assembles the components into completed handsets. There is a large and active global market for both components and finished handsets.
- There is very little control over administration and distribution costs in Tiger Handsets. The distribution manager has complained that far too many orders from the retail outlets are for just one or two models of handset with each order, and in many cases the order size is very small. Although there are just eight retail outlets in GMHK, they place a total of about 280 orders with Tiger Handsets each month. Some retail outlets place about 60 orders each month, although others place only one or two larger orders each week, for a range of different handset models.
- Your investigation suggests that about HK$ 5.6 million of the total costs of HK$ 14 million are related to the processing of orders from retail outlets, and that the number of orders processed would probably be a suitable cost driver for these costs, regardless of order size.
- Matthew Xu has expressed his opinion that there is limited value in costing within the mobile phone industry. He believes that most costs are fixed, and gross profit margins on mobile phone services are close to 100%. Performance reporting, he argues, should therefore be based on the revenues from different types of mobile phone service, and a key financial issue is to ensure that new investments in capital expenditure on the network will generate sufficient revenue to justify the investment. He believes that the focus on costing systems is misguided and wrong.

***Required***

**(a) Explain the reasons why the current system of costing, performance measurement and transfer pricing is unsatisfactory for (1) the manufacturing division (Tiger Handsets) and (2) the retail outlets.**

**Explain the main restrictions of the current systems of performance reporting and transfer pricing, and recommend, with reasons, a more suitable system of transfer pricing within GMHK.**

**(b) Suggest how order processing costs in Tiger Handsets should be monitored and controlled.**

**(c) Respond to the more general views of Matthew Xu, and suggest how the performance of the mobile phone services provided by GMHK should be measured and reported.**

# Discussion points

In this exercise, students are asked to consider **three different issues**. In **Part (a)**, students should recognise that a **market-based system** of transfer pricing is preferable to a cost-plus system, because it should encourage managers to make better decisions about what to produce and what to sell. Part (a) should also encourage students to think about dividing Tiger Handsets into **two profit centres**, because there are market prices for components as well as for assembled handsets. The issue of whether Tiger Handsets should be allowed to sell some of its output to external mobile phone operators may also be discussed.

**Part (b)** focuses on **distribution costs**, and the implications for costs and profit of placing orders in different sizes. Order costing has been put forward as a potential benefit of an activity-based costing approach to analysing overhead costs.

**Part (c)** deals with an **entirely different issue**, and considers the nature of the main part of the company's business – the provision of mobile phone services. These services earn most of the company's revenues. Telecommunications is largely a fixed cost business, so an issue to consider is **how to measure performance** within a business **where variable costs are fairly insignificant**. Students may come up with widely different suggestions.

## Part (a)

**LP reference**

This exercise continues with the theme of transfer pricing and performance reporting systems. The LP reference is Chapter 5 Section 6.

**Key learning points**

Students should recognise that a transfer pricing system needs to **set prices at levels that are comparable with market prices** of similar models in the market. A market-based system of transfer pricing will give retail outlet managers an incentive to consider which models will appeal to customers more and sell more easily. It should therefore help the company to be more competitive.

Students may also recognise that a system of cost-based transfer pricing, even a system based on ABC, would be unsatisfactory because it does not give sufficient consideration to the administration and distribution costs in the manufacturing division.

The current system of performance reporting is unlikely to provide motivation to profit centre managers to improve divisional performance. They are accountable for the profits made by their division, but they have limited authority and decision-making powers to do much to control profit.

The **management of the manufacturing division** would make the following arguments:

- We have no control over what we produce. We are given orders by the eight retail outlets and we have to produce what they ask for.
- We can try to control costs, but most of our expenditures are fixed costs. Achieving a profit depends on our ability to work at or close to capacity every month.
- We have no control over pricing. We are told what the transfer prices should be.
- Even if we could control prices, there is not much we can do to improve profitability because we are operating at close to capacity.

The **management of the retail outlets** would make the following arguments:

- We have no control over the prices we pay for handsets, and limited control over how we price them for re-sale.

- We can try to sell handsets that have a competitive price, but it is not worth the time and effort trying to sell handsets that customers find expensive.
- We should be looking for ultra-low cost models to sell to a growing sector of the market, but the manufacturing division is not particularly interested in reducing costs.
- We should also be looking for sophisticated models to sell to customers using our 3G services, but these are often priced at a very high price, that can be discouraging to customers – unless they are given away as part of a subscription agreement.
- We should concentrate on selling mobile phone services, which is where the revenues and profits are made. There is very little incentive to concentrate on selling handsets that we make ourselves.

A transfer pricing system should be based on **market prices**, where market prices exist. There are market prices for comparable handsets, made by rival producers, and these should be used as a **benchmark** to decide transfer prices between Tiger Handsets and the retail outlets. This should encourage retail outlet managers to think about which handsets are likely to appeal to customers (for subscription agreements for mobile phone services as well as sales of handsets). This should make the company more competitive and it may provide a better incentive for the retail outlet managers, especially if their bonuses are based partly on handset sales.

Transfer prices from Tiger Handsets to the retail outlets should be at prices **comparable** to those at which other handset producers sell their products to mobile phone operators. It should be possible to obtain this information from the market. Retail outlet managers should be allowed to decide the prices at which they will price their handsets, although there should be consistency of pricing the various models by the company's eight retail outlets.

A possible problem is that if model designs are changing rapidly, the administrative task of monitoring market prices and deciding market-based transfer prices may be difficult.

Even so, transfer prices that are based on market prices should be possible.

It may be worth considering dividing Tiger Handsets into **two profit centres**, a component manufacturing division and a handset assembly division. Transfers between these divisions could also be at market price. However, the manufacturing division is currently restricted in what it can do by the requirement that it must transfer all its output to the retail outlets. The board of GMHK may wish to re-consider this policy, especially in view of the fact that it may be considering the acquisition of another handset producer.

## Part (b)

**LP reference**

A useful LP reference for this exercise is Chapter 4 Section 8.

**Key learning points**

Students need to recognise that costs and profits within the company may be affected by order sizes, and that measures need to be taken to monitor these costs and encourage more efficient ordering by the retail outlets. **Distribution overhead costs** are driven by the number of orders, so this is another example of the possible application of activity-based costing.

There is another reason why both the current system of cost-based transfer pricing and the ABC alternative are unsatisfactory. There is **no attempt** within the current system of costing and transfer pricing to consider the administration and distribution costs, and the costs of processing orders from retail outlets to Tiger Handsets. Administration and distribution costs make up 50% of the costs of Tiger Handsets, and these costs should be allocated between retail outlets in a more suitable way.

It should be possible to use an activity-based costing system, or a customer costing system, to work out the **cost of orders** and the **cost of supplying** each retail outlet ('customer') with deliveries each month.

A charge could be made for deliveries, separate from the normal transfer price for handsets. Retail outlets that order more frequently and in smaller quantities will be charged more than retail outlets that order less frequently.

If order costs total HK$ 5,600,000 each month and there are currently 280 orders each month, the order-related overhead costs are HK$ 20,000 for each order. A retail outlet making 50 orders each month would be charged HK$ 1,000,000 and one making just 5 orders each month would be charged HK$ 100,000. Charging in this way should encourage retail outlets to review the frequency and size of their orders.

Charging for deliveries would encourage retail outlets to place larger orders (and so make fewer orders). As a result, expenditure on distribution within Tiger Handsets should be reduced.

## Part (c)

**LP reference**

There is no specific LP reference for this exercise, but students may find Chapter 4 Section 6.2 of some value in producing their answer.

**Key learning points**

Students need to think about performance reporting in an industry where **fixed costs are very high**, and the company provides a range of different services using the same network. The performance of each service should be measured, but within a profit centre system, it is probably also appropriate to monitor the profitability of the retail outlets, through which the company sells its services.

A range of different answers is possible.

Matthew Xu is correct in stating that a very high proportion of costs in the mobile phone industry (the provision of mobile phone services) are **fixed**. Different services also share the same network; therefore it may be difficult to measure the 'profitability' of services and more appropriate to measure the revenues from each service (and revenue growth and the proportion of total revenue earned by each service).

Most or all of the company's services are sold through the **eight retail outlets**. It would therefore be appropriate to measure the performance of each outlet **in terms of profitability**. There will be some costs that are directly attributable to each retail outlet; therefore profitability can be measured in terms of **revenues less directly attributable costs**. Directly attributable costs will include handset costs, staff costs in each retail outlet and other administration costs.

Many of the costs of the company will relate to the costs of installing and maintaining the network and interconnection charges. These costs cannot be apportioned between retail outlets in a meaningful way. However the directly attributable profits of each retail centre should contribute towards the costs of operating the network, and it may therefore be appropriate to allocate a **network charge** to each retail centre.

It will also be important to monitor the sales of different services by each retail outlet, so that the performance of the retail outlets in selling each service can be monitored.

**Manufacturing costs** could be controlled by allowing transfer prices to be based on **market prices** for comparable rival products. There is probably enough information available about the market to identify costs at which handset producers are selling their products to mobile phone operators. However, charges to the retail outlets should include a charge for ordering and delivery, as well as a cost for the handsets themselves. This is needed to provide an incentive to the management of the retail outlets to limit the number of orders they make and to consolidate small orders into larger and less frequent orders.

# Discussion points

## Pre-workshop exercise 4

**LP reference**

Chapter 8, Sections 3 and 5

**Key learning points**

The pre-workshop exercise will lead on to the second workshop exercise. At this stage, students need to be aware of the **cash cycle** and the implications for investment and cash flow of inefficient working capital management.

Students should also demonstrate an awareness that ratios based on limited amounts of information should be treated with caution, but should be prepared to comment on the **deterioration** in the **accounts receivable and inventory turnover periods**, the large amount of **accounts payable** and the apparently low **liquidity ratios**. The investment in working capital is being financed by accounts payable, and the possible reasons for this could be discussed.

End-of-year figures in the statement of financial position are used here to calculate average turnover periods for the year. This assumes that the end-of-year figures are typical for the year as a whole. End-of-year figures are used because this is the only way, with the figures available, to compare working capital turnover ratios and changes in those ratios between 2009 and 2010.

**Assumptions:**

Inventory turnover period = [Inventory at end of year/Costs of producing handsets] × 365 days

Accounts receivable settlement period = [Accounts receivable at end of year/Operating revenue] × 365 days

Accounts payable payment period = [Accounts payable at end of year/(Costs of leased lines, interconnection and other operating costs)] × 365 days

| | | **2010** | | **2009** |
|---|---|---|---|---|
| | | days | | days |
| Inventory turnover period | (74/336) × 365 | 80.4 | (56/285) × 365 | 71.7 |
| Accounts receivable settlement period | (94/ 4,569) × 365 | 7.5 | (69/ 4,127) × 365 | 6.1 |
| Accounts payable payment period | [760/(30 + 245 + 1,562)] × 365 | (151.0) | [695/(26 + 230 + 1,322)] × 365 | (160.8) |
| Cash cycle | | (63.1) | | (83.0) |

The average **cash cycle is negative**, which means that the company consumes its inventory and receives payments from its customers before it pays its own suppliers. Financing from suppliers (accounts payable) exceeds the investment in inventory and accounts receivable.

However, in 2010 although the accounts payable payment period was lower than in 2009, the inventory turnover period increased and the accounts receivable settlement period also increased. This suggests that there may have been some **deterioration** during 2010 in the **efficiency of inventory and receivables management**.

| | | **2010** | | **2009** |
|---|---|---|---|---|
| Current ratio | (655/1,891) | 0.35 | (558/ 1,702) | 0.33 |
| Quick ratio | (655 – 74)/ 1,891 | 0.31 | (558 – 56)/ 1,702 | 0.29 |

The liquidity ratios have been fairly **constant** between 2009 and 2010. The ratios **seem low**, suggesting a lack of sufficient liquidity. However, low liquidity ratios may be normal in the mobile phone industry. Comparisons should be made with the liquidity ratios of similar listed companies.

It is particularly important to check whether the amount of credit taken from suppliers is typical of the industry. The low liquidity ratios are largely due to the relatively high value of current liabilities.

Another point to note at this stage is that the accounts receivable settlement period has been calculated using the total sales revenue for the year, even though most sales are **cash sales rather than credit sales**. More useful information would be obtained if the annual sales figures for credit sales were available (Note: Information on credit sales will be included in the following workshop exercise.)

It is also important to note in conclusion that working capital ratios are useful as **general guides** and for **monitoring changes over time**. The accuracy of the ratios depends on the nature of the data used, and the extent to which the figures 'above the line' in the ratio calculation are comparable with the ratios 'below the line'. However, large changes in ratios are often indicative of a significant improvement or deterioration in efficiency and the reason for the change should be investigated.

# Discussion points

## Pre-workshop exercise 5

**LP references**

Chapter 12 Sections 4 and 13, and Chapter 17 Section 4.

**Key Learning Points**

The Pre-workshop exercise requires students to make a valuation for a target company, using the **PE valuation method**. To do this, they need to make estimates of a suitable figure for annual **earnings** and a suitable **PE multiple**, allowing for the fact that Lucky Lion is a non-listed company. Students should be expected to make differing valuations, depending on the estimates they used, and a comparison of valuations should be used to make the point that business valuation is not a scientific exercise, but something that depends on **judgement**.

The exercise also requires students to think about **payback** on investments. In this example, the returns from the acquisition of a target company will not pay back within the required seven-year period. However students should also recognise that an **investment in a company is unlike a capital investment in plant or equipment**, because an investment in a company retains value over a long period of time. The acquired company could be re-sold. In comparison, plant and equipment lose value and will not generate returns for longer than their useful operational life. This is why payback can be a much more important consideration for plant and equipment.

The exercise also requires students to think about other **factors** that might affect the price that a company would be willing to pay for an acquisition. **Expected growth** in the business, **strategic value** and **risk and uncertainty** are all important issues to consider.

**(a) PE valuation**

To make a valuation based on a PE ratio it is necessary to decide:

- a suitable annual earnings figure and
- a suitable PE ratio to apply.

In this example, it might be considered appropriate to use the expected total earnings of Lucky Lion in the current year (HK$ 32 million).

However, choosing a PE ratio for an unlisted company is a matter of judgement. The PE ratios for similar listed companies range between 18.6 and 25.0 (and the **average PE ratio** for the three companies is 21.7).

A lower PE ratio would be appropriate for an unlisted company, possibly 17 or 18.

If a PE ratio of 17 is applied, the valuation of Lucky Lion's equity would be ($32 \times 17$) = HK$ 544 million.

It is important to recognise that PE valuations depend on assumptions about annual earnings and a suitable PE ratio. These assumptions rely on judgement and cannot be regarded as 'accurate'. However, this method of valuation is possibly useful in making an estimate of what might seem a reasonable price that the owners of the target company might expect to receive.

**(b) Payback period**

If we can assume that Lucky Lion will have no changes in working capital, and capital expenditure equal to its annual depreciation and amortisation charges, its free cash flow in the current year would be HK$ 33 million (= earnings of 32, with net interest charges added back).

Without any growth in annual free cash flow, the payback period would be about **16 years** (544 million/33 million) if an offer price of HK$ 544 million were to be accepted. This **would not meet** the requirement for new capital investments to pay back within seven years.

For this investment to pay back within seven years on a non-discounted basis, the annual growth in free cash flow would need to be very high (about 30% per year for seven years, see workings).

If the company applies its payback policy to this investment, the company should not make the acquisition because the price expected by the owners of the target company would be too high.

However, it can be argued that it is inappropriate to apply a payback requirement to an acquisition of another company. See the answer to part (c).

**Workings**:

If free cash flow is HK$33 million in the first year, total free cash flows on a non-discounted basis over seven years at an annual growth rate of 30% would be (in HK$ millions):

| Year | |
|---|---|
| 1 | 33.0 |
| 2 | 42.9 |
| 3 | 55.8 |
| 4 | 72.5 |
| 5 | 94.3 |
| 6 | 122.5 |
| 7 | 159.3 |
| | 580.3 |

This is close to the PE valuation of HK$544 millions, and indicates that annual growth in cash flows would need to be about 30% to achieve payback on a non-discounted basis within seven (7) years.

**(c) Recommendations**

The board of GMHK should consider several different factors before deciding whether to make an offer for the equity of Lucky Lion and the price that might be offered.

It is **inappropriate** to apply a **payback** requirement to an investment in an acquisition. An investment in another company is unlike a capital investment in plant or equipment, because an investment in a company retains value over a long period of time. The acquired company could be re-sold. In comparison, plant and equipment lose value and will not generate returns for longer than their useful operational life. This is why payback can be a more important consideration for plant and equipment.

The board should consider the **strategic value** of the acquisition to the group. If an acquisition is considered essential for **long-term growth**, GMHK should be prepared to pay a **premium** to make the acquisition.

The future growth in the **industry** should also be considered. A high rate of growth would be needed to achieve payback within seven (7) years. However, with a high rate of growth, payback would occur more quickly than with a low rate of growth.

With any major capital investment, the board should consider the risk involved. It should consider the risk in the acquisition strategy, and whether this is acceptable. It should also consider risk and uncertainty in the estimates of cash flows and growth, and perhaps prepare a range of valuations based on different assumptions.

# Part D Treasury Operations

Penny Wong is satisfied that there may be inefficiencies in the management of inventory and accounts receivable, and she has asked you to prepare a presentation for the senior management of the finance department of GMHK on these issues.

She is more worried, however, about the concerns of the head of the company's treasury department about the company's cash flow and the size of dividend payments to the parent company. She thinks that a presentation should be made to the board of GMHK, to bring the attention of the directors to this matter.

You should divide into four groups to discuss each of the following four requirements. You should refer to the information in the pre-workshop exercise as well as the additional information provided below.

### Case A (Inventory Management)

The analysis of working capital management shows that inventory levels are too high, and that most of the inventory consists of **unsold handsets** amounting to HK$ 16 million. These are held in the retail outlets and also in the manufacturing subsidiary.

***Required***

**You should prepare a presentation for the senior management of the finance department of GMHK which deals with the following issues:**

**(a) The consequences for GMHK of holding excessive inventory levels**

**(b) Measures that might be taken to reduce inventory levels below their current level, and to maintain them at lower levels in the future**

**(c) The financial benefits that GMHK might expect to obtain from reductions in inventory. The financing cost is currently 3% p.a.**

### Case B (Receivables Management)

A sales campaign to sell services to corporate customers in specially-negotiated deals began in 2008 and continued into 2009. Customers were offered credit of up to 30 days. The sales campaign was given less prominence from the end of 2009, although the company continues to negotiate these deals. Your team found out that the total value of **credit sales** in 2009 was HK$ 900 million, and in 2010 was HK$ 905 million. The small increase in this type of sale was attributed to the reduction in the sales effort during 2010.

You are aware that Penny Wong thinks that accounts receivable are not a significant problem, because credit sales are a small percentage of total sales and the cost of putting more resources into receivables management might not be justified by the benefits from improvements in efficiency and performance.

***Required***

**You should prepare a presentation for the senior management of the finance department of GMHK which deals with the following issues:**

**(a) A comparison between accounts receivable at the end of 2009 and accounts receivable at the end of 2010.**

**(b) Reasons why accounts receivable might be too high.**

**(c) Measures that might be taken to reduce accounts receivable to a more efficient and acceptable level.**

**(d) An estimate of the possible savings that might be obtained from more efficient receivables management.**

**You may wish to refer to information in the pre-workshop exercise for the purpose of this presentation.**

**Case C (Cash Forecast)**

You are required to prepare a presentation to the board of GMHK about the expected cash position of the company in the first half of 2011. Your presentation should be based on the following data gathered by the head of the treasury department.

At the beginning of 2011, the head of the treasury department looked at the cash flow position of the company for the first six months of the year. He was surprised to discover that the company would **not** be as **cash-rich** as he had expected.

He made the following estimates for the six-month period. Budgeted revenue for the period was HK$ 2,400 million and budgeted operating costs excluding depreciation and amortisation were HK$ 1,500 million.

The parent company had notified Golden Monkey Mobile that it would require the payment of a dividend of HK$ 480 million in March. A tax payment of HK$ 280 million would also have to be made in the period.

The company was committed to developing its 3G network, and capital expenditure during the six month period would be at least HK$ 410 million.

After extensive discussions with major suppliers, the company had agreed to pay invoices much more quickly than in the past and the board has set a target of reducing accounts payable by 25% from its level at 31 December 2010. This target would be achieved by 30 June 2011.

The board had also approved a major advertising campaign which had not been provided for in the budget, to run during April 2011. The expected total cost of the campaign was HK$ 40 million. In addition, the company was required to pay HK$ 15 million to settle a legal dispute and pay a related fine to the authorities for causing environmental damage. This also had not been included in the budget.

The head of treasury is aware that the company has a large amount of cash on deposit with its banks, but most of this is on a 12-month deposit that will not mature until later in the year. It may be possible to withdraw this cash before the maturity date for the deposit, but this would involve loss of interest for the full 12-month period and the payment of an arrangement fee to the bank.

***Required***

**Prepare a presentation for the board of GMHK on the cash flow position of GMHK in the first half of 2011.**

**(a)** **You should use the information provided and make any other assumptions that you consider appropriate to prepare a cash flow forecast as at 1 January 2011 for the period to 30 June 2011.**

**(b)** **You should comment on the situation indicated by your forecast and its implications for GMHK, and recommend what the company might do to deal with any problems your analysis has revealed.**

**Case D (Dividend Policy)**

Following the presentation in Part C, the board of Golden Monkey Mobile are concerned about the **weak cash flow position** of the company, and they are of the opinion that the parent company is demanding dividend payments that the company cannot properly afford, given its commitment to grow the business. It believes that dividend payments should be limited to what the company can afford. At the moment the parent company has a policy of requiring Golden Monkey Mobile to pay an annual dividend that increases each year by the same percentage amount as the company's growth in revenue.

The CEO (Matthew Xu) and CFO (Penny Wong) of Golden Monkey Mobile have arranged a meeting with the CEO (Michael Yip) and CFO (David Chan) of the parent company, to discuss a proposal that the parent company should in future change its dividend policy.

***Required***

**(a) From the information in the case study materials, and making any assumptions you consider appropriate, estimate the amount of dividend payments by GMHK to the parent company in 2010.**

**(b) Suggest the arguments that could be made by Matthew Xu and Penny Wong of Golden Monkey Mobile, in favour of variable dividend payments based on what the company can afford.**

**(c) Suggest the arguments that could be made by Michael Yip and David Chan, from the parent company in favour of a fixed or growing dividend payment from Golden Monkey Mobile each year.**

**Your group will be required to present the respective arguments of the board of GMHK (Part (b)) and the parent company (Part (c).) When these arguments have been presented, you should discuss which arguments are stronger and beneficial for the group as a whole.**

# Discussion points

This exercise requires students to look at a number of different aspects of treasury management: **inventory management, accounts receivable management, cash flow forecasting, cash management and dividend policy**. The answers provided by students will indicate their understanding of these different issues.

There are four different exercises or Cases. For the first two, the exercises call for presentations to the senior management of the finance department, since the scale of the problem is probably not sufficient to justify a presentation to a higher level (the board of GMHK).

All four exercises combine a small amount of computational work with a discussion of the financial, management and strategic issues.

## Case A

### LP references

Inventory ratios and inventory management are covered by LP references Chapter 8 Section 5 and Section 6.

### Key learning points

Students need to recognise that there are **costs associated with high levels of inventory**. Finance costs are an important aspect of costs for many companies, although perhaps the cost is relatively small in the case of GMHK. In this Case Study, there are also costs associated with obsolete inventory.  Students may also mention other costs, such as the costs of operating warehouses or storerooms for inventory. The exercise also requires students to suggest how inventory levels might be reduced: **the sale of 'old' inventory at discount prices should be a key suggestion**.

Although there is no 'correct' answer to any of the Cases, students should be expected to produce estimates of the possible benefits of improvements in inventory management.

A presentation to the senior management of the finance department might cover the following points.

(a) Mobile phone handsets have a **limited life cycle** and become 'obsolete' fairly quickly. If the average turnover period for inventory is long, there will be a high risk of holding obsolete inventory. Obsolete inventory, if unsold, will eventually have to be written off as a charge against income.

There is also a **finance cost** in holding excessive amounts of inventory.

(b) **Measures** to reduce inventory levels:

(1) Encourage retail outlets to **sell old models** of handset at a large discount, to attract buyers, or to include older models of handset in subscription renewal offers (although customers may demand more recent handset designs).

(2) Investigate the possibility of **just-in-time** manufacturing systems. If handsets are produced to order, instead of in large batches, it would be possible to reduce inventories held by Tiger Handsets. However, it may not be possible to produce handsets in smaller batches without incurring higher batch-related overhead costs, and smaller orders may result in higher order-related distribution costs.

(3) It may be possible to encourage customers to order handsets in **advance of delivery** to the retail outlets, so that they can be passed on to customers as soon as they are delivered to the retail outlets.

(4) **Better inventory control.** Management should monitor the demand for handset models and the estimated life cycle of models, to avoid production of handset models that will soon become obsolete.

### Recommendation

Retail outlets should have **regular sales of older handset models at a large discount** to market value (and probably at a discount to cost).

Measures should be taken if possible to reduce inventory levels. Tiger Handsets and the retail outlets should try to avoid duplicating their holdings of inventory, when handsets could be held in a single location for all the retail outlets.

### Possible financial benefits

The financial benefit from selling older models at a discount is that selling the handsets will earn some revenue, whereas writing off the inventory as obsolete would cost the same but have no benefit. If, say, 75% of the HK$ 16 million inventory that is currently written off could be sold at 50% of cost, the benefit to GMHK would be (16 million × 75% × 50%) HK$ 6 million.

Reducing inventory levels would offer some opportunities for savings, but the amount of potential savings is difficult to quantify without investigating the measures that could be taken, other than selling off older models at a discount. The value of inventory at the end of 2010 was HK$ 74 million, representing about 80.4 days of manufacturing (= the inventory turnover period in 2010: your calculation may be different). If this could be reduced by, say, 20%, the reduction in inventory would be HK$ 14.8 million. A reduction in current assets would provide an improvement in the cash position of GMHK, and this will provide a benefit in terms of interest cost saving or interest income. At 3% interest, say, this would be worth HK$ 444,000 each year.

## Case B

### LP reference

The receivables turnover ratio and receivables management are covered by LP references Chapter 8 Section 5 and Section 7.

### Key learning points

This exercise requires students to identify the **reasons why accounts receivable might be high**, the possible consequences of a high level of receivables and measures that might be taken to improve the efficiency of receivables management. The answers will probably follow ‘text book’ guidance.

The data for Case B introduces some important **new material**, which is the value of **credit sales** in 2009 and 2010. This information can be used to re-calculate the average time for settlement.

Students may also comment on the small growth in credit sales in 2010 compared with 2009, and may suggest that strict credit terms may be a reason for the low rate of growth. Opinions on this point may differ.

A presentation to the senior management of the finance department might cover the following points.

(a) The accounts receivable settlement period can be calculated using total credit sales in each year.

2010: (94/905) × 365 = 38 days

2009: (69/900) × 365 = 28 days.

These figures show that there has been an increase in the length of credit taken by customers, and the average settlement period is now longer than the maximum credit allowed (30 days) under the terms of the agreements with customers.

Although the total amounts may seem small in comparison with the size of the company's total turnover, increases in the average settlement period, in excess of agreed credit periods, are an indication of **poor credit management**.

(b) Accounts receivable are generally too high when collection procedures become less efficient, and customers are not 'chased' for payment of overdue amounts. (In some cases, inefficiency may be caused by delays in sending out invoices.)

(c) In the mobile phone business, many customers pay regularly each month and on the agreed day. For most customers, there should be no amounts receivable. The receivables in the statement of financial position may therefore relate to **business customers** who are given credit. GMHK may give credit terms to business customers to encourage sales growth in the business sector market for mobile phone services.

It could be argued that 30 days' credit might not be sufficient to attract customers into negotiating deals, and this could explain the low growth in credit sales in 2010. A longer credit period might help to stimulate credit sales.

(d) The consequences of an increase in the amount of receivables and the length of the payment period is that the company may eventually have to write off some amounts as uncollectible, as a charge against income.

(e) **Measures to improve** the accounts receivable settlement period should include:

- Better credit checking procedures
- Strict policies on agreeing credit terms with customers
- Monitoring overdue payments, through aged receivables analysis
- Procedures for chasing overdue payments (reminder letters, telephone calls)
- Making the credit control manager accountable for poor performance
- Offering a discount for early settlement.

(f) The potential benefits from better receivables management can be estimated.

- Better receivables management should improve the success rate in collecting amounts receivable. A reduction in amounts written off from, say 1.5% to 1% would provide savings of HK$ 4.525 million ($905 × 0.5%) a year on annual credit sales of HK$ 905 million.

- Using 2010 figures as a basis for calculation, a reduction in the settlement period from 38 days to 30 days would reduce amounts receivable to (30/365 × 905 million) = HK$ 74.4 million from the end of 2010 level of HK$ 94 million. This would be a reduction of HK$ 19.6 million, which would improve the company's cash flows. Using an interest rate of 3%, the potential benefit of such a reduction in the settlement period would be about HK$ 588,000 ($19.6 million x 3%) per year.

- A separate matter that management may wish to consider is the length of the credit offered. Longer credit terms might result in higher annual sales revenue. There would be some cost in terms of a higher investment in receivables and possibly a bigger write-off each year for uncollectible amounts. Even so, if receivables management is efficient, the higher gross profit from additional sales might exceed the extra costs of the additional write-offs and the additional investment in receivables.

## Case C

**LP reference**

The LP reference is Chapter 8 Section 9 for cash forecasting.

**Key learning points**

Students must demonstrate an ability to prepare a simple cash flow forecast from information provided. Most of the exercise is a computational exercise, but students must be able to make some comment about what the forecast shows and perhaps suggesting how the expected cash flow shortage might be dealt with. **The focus** should be on **dividend payments** to the parent company, payments for **capital expenditure** (possibly) and the planned **reduction in payables**.

Your presentation to the board of GMHK should show the details of the expected cash shortage in the first six months of 2011. Calculations are shown in the following table.

**Part (a)**

(Figures in HK$ millions)

| | | |
|---|---|---|
| **Estimated cash flows, first six months of 2011** | | |
| Revenue | | 2,400 |
| Operating costs, excluding depreciation and amortisation | | 1,500 |
| **EBITDA** | | **900** |
| Dividend to parent company | 480 | |
| Taxation payment | 280 | |
| Capital expenditure | 410 | |
| Reduction in accounts payable (25% × 760) | 190 | |
| Advertising campaign | 40 | |
| Legal costs | 15 | |
| Net interest costs, estimate based on 2010 [(11-21)/2] | 5 | |
| | | (1,420) |
| **Excess of cash spending over cash income** | | **(520)** |
| Cash available at 1 January | | 118 |
| **Cash deficit** | | **(402)** |

It is assumed that there will be no change in current assets or current liabilities, except for accounts payable and cash balances.

**Part (b)**

There is an **expected cash deficit**, which is very large. The company has HK$ 233 million (see the Case) on deposit, and could obtain release of this money from its bank(s), although there would be an administration charge and loss of interest.

Even so, there would still be a substantial cash deficit. This must be financed somehow, or measures must be taken to reduce the expected deficit.

Expenditures and payments that might be reduced may be the reduction in payables, the dividend payment to the parent company and capital expenditure payments.

It is not clear whether the expected cash deficit in the first six months of 2011 is an unusual event, that is not expected to recur, or whether it is likely to happen again, for example in the first six months of the next year.

**Conclusion**

Your presentation should make the points that:

- A cash shortage is expected
- The most significant reasons are the **dividend payment**, **capital expenditure payments** and the **reduction in payables**
- The company will need to raise cash unless ways of reducing the expenditures can be found.
- The amount of cash required will depend on the measures that can be taken to reduce payments and a decision about whether to draw on the cash held on 12-month deposit.
- Even so, unless the dividend payment can be significantly reduced, some cash shortage may be inevitable.

  (Note: Students may disagree with these conclusions, but should be able to present good arguments.)

## Case D

**LP references**

Dividend policy is covered in Chapter 10. LP references are Chapter 10 Sections 1, 3 and 4.

**Key learning points**

Part (d) considers dividend policy. The dividend payment to the parent company will contribute to the cash flow deficit in the first half of 2011, and the cash flow problem could be eliminated if the dividend payment is reduced to what GMHK can afford. However the problem should be considered from the point of view of the parent company as well as GMHK, and the exercise will encourage students to consider the problem from **both points of view**.

The estimate of the amount paid in dividend in 2010 should not present students with much difficulty. If it is assumed that there were no movements in reserves in 2010 except for the increase in the accumulated profit reserves, the estimate of dividend payments can be made from the opening and closing reserves balances and the income after tax for 2010.

**Part (a)**

You should calculate the amount of dividend payments in 2010 before going on to consider the arguments that may be put forward by the board of GMHK and the board of CGMM.

Estimate of dividend payments to the parent company in 2010:

It is assumed that there were no movements in the reserves of GMHK in 2010 except for the increase in the accumulated profits reserve.

| | |
|---|---|
| (Figures in HK$ millions) | |
| Reserves at the end of 2009 | 2,808 |
| Profit after taxation in 2010 | 1,460 |
| | 4,268 |
| Reserves at the end of 2010 | (3,222) |
| **Dividend payments in 2010** | **1,046** |

This shows that dividend payments during 2010 were equal to 71.6% ($1,046/$1,460) of the profit after taxation of GMHK for the year. This is a large amount.

**Part (b)**

**Arguments that could be made by GMHK**

In discussions with the board of CGMM, the following arguments might be made by the directors of GMHK.

- GMHK will be short of cash in the first six months of 2011. This is partly because of its **commitments** to capital expenditure and partly because of the size of the dividend payment to the parent company.
- In particular, the dividend payments are over 70% of the annual profits of GMHK. This is very high. The expected cash deficit could be eliminated by reducing the dividend payment.
- GMHK should not restrict its capital investment programme, because its capital investments will add value to the group.
- It may be possible to defer some capital expenditure until later in the year, but this will be damaging strategically, and will allow competitors to develop their rival networks more quickly.

**Part (c)**

**Arguments that could be made by the parent company**

In discussions with the board of GMHK, the following arguments might be made by the directors of CGMM.

- The management of GMHK should have identified the cash flow problem earlier and taken measures to deal with it.
- GMHK can borrow to cover the cash deficit.
- It is not clear why the company has decided to reduce its payables by 25% in such a short period of time. This affects cash flows substantially.
- The parent company needs predictable cash flows from its subsidiary so that it can plan its own dividend policy and capital expenditure programme. If GMHK remains profitable and grows successfully, the parent company should expect dividends every year that grow at a similar rate to the growth in revenue and profits.

**There is no 'correct' argument**. The directors of GMHK can argue correctly that the payment of very large dividends prevents GMHK from using its cash income to develop and grow the business. The directors of CGMM can argue that CGMM owns GMHK, and the board of directors of CGMM should decide how to use the group's cash resources in a way that is most beneficial for the group as a whole.

# Part D Treasury Operations

The board of Golden Monkey Mobile has been authorised by the board of the parent company to issue commercial bonds to raise cash resources for its expansion plans. There have been discussions with the company's financial advisers, who have indicated that there should be sufficient interest in the bond issue from investors, although there would not be a large and liquid secondary market in the bonds after issue.

Most of the board members of GMHK are not familiar with the bond markets, and at a board meeting, they agreed that there should be a special presentation about bonds to answer some of their questions.

Penny Wong has asked you to prepare a presentation, which answers some specific questions that have been raised by some directors and which also provides a helpful guide to **bond pricing**.

Your presentation should cover the following requirements.

***Required***

**(a) One of the directors of GMHK has been told that a rival company, Tele Hong Kong issued eight-year 6% fixed rate bonds exactly one year ago. The bonds pay interest every six months, and the second interest payment has just been made. The current market value of these bonds is 112.13. He wants to know:**

**(1) why the price of these bonds is so high and what a price of 112.13 signifies**
**(2) whether GMHK would be able to issue eight-year 6% bonds at 112.13.**

**(b) Another director wants to know (i) what price could be obtained for seven-year bonds if they were issued with a fixed coupon of 5% with interest payable every six months. (ii) He also wants to know whether it would be better for GMHK to issue three-year bonds because he has heard that the coupon on these bonds might be as low as 4%.**

**(c) After answering these specific questions, you should explain to the board the factors that would be considered by the company's financial advisers when deciding on the price at which to offer the bonds to investors.**

## Discussion points

For the purpose of this exercise, it is assumed that GMHK may decide to make a bond issue on HKEx. As it is not a listed company, it would have to obtain a **listing** for the bonds, and meet the criteria for listing in the HKEx Listing Rules. Students may wish to comment about this, for example by suggesting that it would make **more sense** for the parent company to raise the bond finance and transfer the money to GMHK as an **internal loan**.

The specific questions raised by two of the board members of GMHK are concerned with the **pricing of bonds**. Students are required to demonstrate their understanding that bond prices are the present value of future payments on the bond, discounted at the market yield for those bonds.

The final part of the exercise requires students to identify the factors that determine the yield/price of a newly-issued bond. This part of the answer should be largely '**text book**' in nature, but students need to have a reasonable understanding of the bond markets and how they operate.

**LP reference**

The LP reference is Chapter 17 Section 7. Students may also wish to read about long-term debt in Chapter 9 Section 7.

**Exercise 2:**

Your presentation should cover the following points.

**Introductory points**

GMHK would need to obtain a listing for the bonds, and should be advised by a sponsor in making the application and other arrangements for listing.

The **bond price** will depend on the **bond yield that investors will require** (to persuade them to buy the bonds) and the **term of the bonds**. Bond prices vary inversely with the yield.

**(a) The questions from the first director**

The eight-year (8) bonds issued by **Tele Hong Kong** now have **seven years remaining** to maturity. This means that there will be 14 six-monthly interest payments and redemption of the bond capital at the end of the seventh year. The market price of 112.13 reflects the value that bond investors put on those future cash flows.

A market price **above 100** means that **the bond is paying a rate of interest that is higher than the interest yields** currently expected on seven-year bonds issued by companies such as Tele Hong Kong. **Current (Actual) market yields** are therefore **lower than 6%** on these bonds.

The **actual market yield** on these bonds can be calculated as the **internal rate of return** on the future cash flows. Calculations of the IRR may differ slightly, depending on whether a calculator or DCF tables are used to make the calculation. The calculations below show that the six monthly yield is 2%.

| Period | | Amount | Discount factor at 2% | Present value |
|---|---|---|---|---|
| 1 - 14 | Interest payment | 3.00 | 12.11 | 36.33 |
| 14 | Redemption at maturity | 100.00 | 0.758 | 75.80 |
| | | | | 112.13 |

A 2% yield every six months is the equivalent of a **4%** annual yield (approximately).

**If GMHK were to issue eight-year bonds at 6%, its price would <u>not</u> be 112.13**. This is because the yield on the eight-year bonds would not be the same as the current yield on seven-year bonds. Other factors may also mean that the yield on bonds issued by GMHK would differ from the yield on bonds issued by Tele Hong Kong. For example, if bond investors considered the credit risk to be different between GMHK and Tele Hong Kong, they would require a higher yield from the company that is the higher credit risk.

Note: It is important to understand how bond valuations are determined in the market. Suppose that GMHK issued 8-year bonds. The issue price will depend partly on the coupon rate of interest that is paid on the bonds (a rate of 6% is suggested in this case) and partly on the yield that investors require. For 8-year bonds, investors may require a higher yield than on 7-year bonds. It is considered 'normal' for the yields on longer-dated bonds to be higher than on shorter-dated bonds. So the yield required on 8-year bonds of GMHK might be, say 4.4% (= 2.2% each six months).

If the required yield on 8-year bonds is 4.4%, and the coupon rate of interest paid on the bonds is 6%, the issue price of the bonds would be established as follows:

| Period | | Amount | Discount factor at 2.2% | Present value |
|---|---|---|---|---|
| 1 - 16 | Interest payment | 3.00 | 13.367 | 40.10 |
| 16 | Redemption at maturity | 100.00 | 0.706 | 70.60 |
| | | | | 110.70 |

**(b) The questions from the second director**

(i) If GMHK were to issue **7-year bonds** with a coupon of **5%**, the issue price would depend on the yield required by investors. If we assume that the yield would be **similar** to the current yield on the Tele Hong Kong bonds, **4%** on an annual basis so 2% on a six month basis, the approximate issue price would be **106.08**, calculated as follows.

| Period | | Amount | Discount factor at 2% | Present value |
|---|---|---|---|---|
| 1 - 14 | Interest payment | 2.50 | 12.11 | 30.28 |
| 14 | Redemption at maturity | 100.00 | 0.758 | 75.80 |
| | | | | **106.08** |

(ii) A lower coupon on **3-year bonds** does not mean that the issue price of these bonds would be higher or lower than the issue price of seven year bonds at 5%. This is because the issue price of the bonds depends partly on the coupon rate of interest but also partly on the yield required by investors in the bonds.

However, in this case the issue price of the 3-year bonds is likely to be less than the issue price of 7-year bonds. This means that the company will have to issue more bonds to raise the money that it needs.

For example, suppose that GMHK issued 3-year bonds with a coupon rate of interest of 4%, and investors required a yield of 4% on these bonds (2% every six months.) The bonds would be issued at par (= 100). The calculation is shown below.

| Period | | Amount | Discount factor at 2% | Present value |
|---|---|---|---|---|
| 1 - 6 | Interest payment | 2.00 | 5.60 | 11.20 |
| 6 | Redemption at maturity | 100.00 | 0.888 | 88.80 |
| | | | | 100.00 |

The company would have to issue more bonds at 100 than bonds with a higher coupon at a higher issue price of 106.08, but it is probable that total interest payments (cash payments) on the 4-year bonds would be less than interest payments on the 7-year bonds.

These lower interest rates would be enjoyed for three years. At then end of the three years, GMHK would need to borrow again for a further four years, and by this time interest yields on bonds might have risen or fallen from where they are now – depending on changes in the market over the three-year period.

The coupon of 4% would be lower than the coupon on 5% bonds issued for seven years, which means that interest costs would be lower for the first three years. However, a comparison between the merits of a 3-year bond at 4% and a 7-year bond at 5% depends on:

(1) The nominal value of the bonds that would have to be issued in each case, and the total interest costs payable on each bond for the first three years

(2) For how many years does GMHK require the bond finance? If the bond finance is needed for seven years, it would be more prudent to issue 7-year bonds because there would be no re-financing risk. If the company needed the finance for seven years but issued 3-year bonds, it would have to refinance after three years, and at this time it might be difficult to raise bond finance or interest costs might be higher than they are now. However, if the finance is needed for only three years, it would make sense to issue 3-year bonds.

**(c) Factors to consider when deciding the bond price**

The market value of a bond is the **future cash flows to maturity** that bondholders will expect to receive, discounted at the required yield.

The following points should be made:

The **yield** will depend on:

- the **term** of the bonds: higher yields might be expected by investors on longer-dated bonds
- the **credit rating** for the bonds, assuming that the bond issue will need a rating from at least one credit rating agency. The rating for the bonds may be the same as the rating of bonds issued by the parent company, provided the parent company guarantees the debt of its subsidiary
- the expected **liquidity** for the market in the bonds after issue: higher yields will be demanded on bonds with less liquidity
- the **seniority** of the debt: yields will be lower on senior debt than on subordinated debt.

The yield would also vary if the bonds were convertible into equity, or were issued with warrants attached.

## Part E Corporate Finance

The board of GMHK has agreed to review the proposal to acquire **Lucky Lion Handsets** using a different approach to making a valuation. The board recognises that the acquisition of a handset manufacturer would provide the company with opportunities for long-term growth, and the policy of requiring payback within seven years was inappropriate for this important strategic initiative.

There have been discussions with the owners of Lucky Lion about a valuation of the company's equity, and it seems likely that the owners would accept a bid in the region of HK$ 550 million.

Penny Wong has asked you to provide an estimated value of Lucky Lion Handsets based on different figures from those in the pre-workshop exercise. Your estimate will be presented to the board of GMHK.

(1) The expected results in the first year after acquisition would be similar to those for the current year, as set out in the pre-workshop exercise.

(2) There will be strong growth in annual sales and profits due to the fact that Lucky Lion will be able to sell handsets to other subsidiaries in the China Golden Monkey Mobile Group as well as expanding sales to external mobile phone operators.

(3) Long-term growth in annual **free cash flow** should be in the region of at least 6% to 8% each year, for the foreseeable future, with four exceptions:

- Working capital would have to increase by HK$ 5 million each year to support the growth in sales volumes.
- Capital expenditure would have to exceed the annual charge for depreciation and amortisation by HK$ 10 million each year for the foreseeable future, to sustain this annual growth rate.
- If Lucky Lion Handsets is acquired, the owners will take out all the cash from the company but will not repay any of the company's debt capital. Annual interest payments on the current long-term debt would be HK$ 4 million.
- There should be savings of HK$ 8 million in administration costs each year as a result of the acquisition.

(4) It has been estimated that the weighted average cost of capital for GMHK is 10% and its cost of equity is 12%.

(5) It is assumed that the rate of taxation on profits will be 16.5% for the foreseeable future.

Members of the GMHK board have made the following comments.

(1) There is a possibility that if GMHK do not acquire Lucky Lion in the near future, a rival mobile phone operator in PRC and Hong Kong might try to acquire it.

(2) A higher rate of growth in earnings and free cash flows could be achieved by investing heavily in new plant and equipment after acquiring Lucky Lion. It has been suggested that with additional investment, annual growth in the cash flows of Lucky Lion might be 15% or more for at least seven years.

You should divide into groups to discuss the requirements of this exercise.

***Required***

**(a)** **Prepare a valuation for the equity of Lucky Lion Handsets using the information in this handout and in the pre-workshop exercise, using the discounted cash flow method of valuation and forecasts of free cash flow (FCFF).**

**(b)** **Compare the valuation produced using your FCFF approach and the valuations that you prepared in the pre-workshop exercise (individually) using the P E valuation method. The board of GMHK are aware of this valuation.**

**(c)** **On the basis of your valuation, make a recommendation to the board of GMHK, taking into consideration the views expressed by members of the board.**

**(d)** **Explain how your valuation and recommendations would have been different if Lucky Lion Handsets had been a listed company with equity shares listed on HKSE.**

# Discussion points

This exercise looks at methods of valuation for **non-listed** companies for the purpose of making a takeover offer. **A PE multiple valuation** was prepared by students in the pre-workshop exercise, and students will have produced a range of valuations using this method. The groups are now required to prepare a **FCFF valuation**.

Students should then compare their FCFF valuation with a PE valuation, and recognise the problems with both methods. An alternative valuation based on market value is included in part (d) in order to give a more comprehensive knowledge to students.

**LP references**

The LP reference is Chapter 17 Section 5. They may also wish to remind themselves about PE valuations and the reference for this is Chapter 17 Section 6.1. Comparisons of valuation methods are discussed in Chapter 17 Section 8.

**Part (a): FCFF Valuation**

**Key learning points**

To prepare a FCFF valuation, students need to decide:

- **How to produce a valuation**: the suggested solution here suggests a valuation based on FCFF growth in **perpetuity**, but student groups may use a different approach (such as a valuation based on a forecast over the **next few years**).
- How to produce a sensible estimate of **free cash flow each year**.
- What **discount rate** to apply to obtain a valuation.

The valuation depends on estimates of annual growth. Students might choose to prepare a valuation based on cash flows over a given period of time (say ten years), but a valuation based on cash flows in perpetuity is simpler. Students may also be able to work out that using this valuation model, the discounted payback period can also be calculated.

Valuations by the different student groups could vary widely, but the principles they apply must be sound and the methodology they use must be technically correct.

GMHK is now taking the view that a valuation of Lucky Lion Handsets should be based on a **longer term view** of the cash flows that the acquisition would help to generate, and the **strategic value** of acquiring a handset producer.

An alternative approach to valuation would be to assess the value of the company using estimates of free cash flow and annual growth in perpetuity. This may produce a high estimate for the valuation, but this can be compared with the offer of HK$ 550 million that the owners of the company might be likely to accept.

The figures provided here are based on assumptions and estimates. Other valuations may be produced based on different assumptions and estimates.

**Estimate of free cash flow in the first year after acquisition**

It is assumed that capital expenditure each year will be HK$ 10 million more than the annual charge for depreciation and amortisation.

| | HK$ millions |
|---|---|
| Revenue | 600 |
| Cost of sales | (330) |
| **Gross profit** | **270** |
| Distribution costs | (120) |
| Administrative expenses (after savings $110 - $8) | (102) |
| **Earnings before interest and taxation** | **48** |
| Taxation (16.5%) | (8) |

| | |
|---|---|
| **Profit after tax** | **40** |
| Capital expenditure in excess of depreciation | (10) |
| Additional working capital investment each year | (5) |
| **Free cash flow in first year available to equity** | **25** |

The weighted average cost of capital is 10%. The estimated growth rate in revenue – and free cash flow – is estimated to be 6% - 8%.

**If the annual rate of growth in perpetuity is 6%,** the value of the company would be (in HK$ millions):

25 (**1.06**)/(0.10 – 0.06) = 662.5.

After deducting the debt of the company, the value of equity would be HK$ 562.5 million ($662.5 - $100), which is very close to the price that the owners of Lucky Lion might be willing to accept.

**If the annual rate of growth in perpetuity is 8%,** the value of the company would be (in HK$ millions):

25 (**1.08**)/(0.10 – 0.08) = 1,350

After deducting the debt of the company, the value of equity would be HK$ 1,250 million.

**Part (b): Comparison of Valuations**

**LP reference**

Comparisons of valuation methods are discussed in Chapter 17 Section 8.

**Key learning points**

This requirement can be dealt with briefly. Students need to recognise that a **FCFF valuation** has some **theoretical justification**, based on the value of companies as the discounted value of the expected future cash flows that they will provide. A **P E ratio valuation**, although very simple, **has no theoretical justification**.

The valuation reached using the FCFF method (HK$ 562.5 or 1,350 million) may be higher or lower than a PE valuation (HK$ 544 million based on PE ratio of 17), depending on the assumptions and estimates used to prepare each valuation.

The **FCFF** is based on **financial theory** and the concept that the **value of an investment is the present value of the expected future cash flows** arising from that investment. The weakness of the method is that it depends on the estimates of free cash flow, growth rates and discount factor.

The **PE valuation** has no theoretical justification. It **depends on judgement** in the selection of a suitable P E multiple and the estimate of a suitable figure for annual earnings takes no account of

expected earnings growth in the future (except to the extent that earnings growth may be assumed from the size of the PE multiple).

[**Note**: Good students should be able to use relevant facts to back up their arguments. Most importantly, the acquired company should create value to the company.]

**Part (c): Recommendation**

**LP reference**

In addition to the sections of the LP referred to above, students should refer briefly to Chapter 15 Section 5.

**Key learning points**

It should be argued that a **reason for making an acquisition**, regardless of price, **should <u>not</u> be for the purpose of preventing a competitor from making the acquisition**.

**An issue** in this part of the exercise is **whether a company should be willing to pay for the value of its own future investments in an acquired company**. In principle, it should not. By investing in new plant and equipment after the acquisition, GMHK may be able to increase the value of its investment Lucky Lion. However, these future increases in value are not directly relevant to the current value of Lucky Lion at the time of acquisition. New investments after the acquisition should be appraised separately, using normal DCF methods of appraisal.

A brief comparison between acquiring a non-listed company and a listed company is also required in part (d). With a listed company, there is already a market valuation for the company's shares. The takeover would also come within the rules of the Takeovers Code.

A recommendation might be that the value of Lucky Lion Handsets depends on the assumptions that are made about **future cash flows**, and in particular future growth in the business. If growth expectations are fairly low, it might be difficult to justify a price of about HK$ 550 million.

However if the board of GMHK is convinced that the acquisition of a handset manufacturer is important for the **long-term strategic objective** of achieving growth, an offer of HK$ 550 million would be justified.

It is important to recognise that this recommendation is based on a large number of **assumptions** and on judgement. (Your own views might be different.)

The points raised by board members should be addressed as follows.

(1) It would be **inadvisable** to make an acquisition, regardless of price and strategic objectives, for the purpose of **preventing a competitor** from making the acquisition. The value of an acquisition should depend on the value to GMHK. The strategic purpose of an acquisition should be to enhance the value of GMHK, not to prevent other companies from developing their businesses.

(2) In principle, a company should **not be willing** to pay for the value of its **own future investments in an acquired company**. By investing in new plant and equipment after the acquisition, GMHK may be able to increase the value of its investment Lucky Lion. However, these future increases in value are not directly relevant to the current value of Lucky Lion at the time of acquisition. **The value of Lucky Lion should be based on the value of the business at the time of acquisition**, allowing for expectations of future growth that the business might expect without any substantial new additional investment. New investments after the acquisition should be appraised separately, using normal DCF methods of appraisal.

**Part (d): Market Valuation**

If Lucky Lion Handsets had been a **listed company**, the recommendations would have been **different** in several ways.

- There would be a **market valuation** for the equity shares of Lucky Lion, because of the existence of a market price. GMHK would have to offer a higher price than the current market price to acquire the shares of the company.
- The acquisition would come within the scope of the **Takeovers Code**, and GMHK would be required to comply with the rules of the Code.
- It is a requirement of the HKSE Main Board Listing Rules (Rule 8.08) that there must be an open market in listed securities, and that this usually means that at least 25% of the securities should be held by the public at all time. This requirement continues after the initial listing of the securities (Chapter 13 of the Main Board Listing Rules on Continuing Obligations.) This means that if Lucky Lion were to remain a listed company, GMHK would not be able to acquire more than 75% of the equity. To acquire 100% of the equity in Lucky Lion, GMHK would have to de-list the shares.

[**Note**: Students are encouraged to think outside the box and to recognise the fact that there are limitations in various models of valuation. The key to a successful takeover is whether the acquired company can create value to the group, what is the appropriate purchase price for negotiation, and how to finance the acquisition.]

## Part E Corporate Finance

The board of GMHK has decided to go ahead with the acquisition of Lucky Lion Handsets. An offer price of HK$ 550 million has been accepted for 100% of the equity.

GMHK does not have sufficient cash to pay for the acquisition out of its own resources, and a decision has to be made about the most appropriate method of financing.

A new issue of equity shares has been considered. GMHK is not a listed company, so new finance might have to come from the parent company. However, the board of the parent company has indicated that it would be unwilling to raise cash from a new equity issue and lend the money to GMHK, and it would be unwilling to reduce substantially the annual dividend payments from GMHK to CGMM. If CGMM did raise new equity finance it would want to use the money to finance further growth in 3G services on the Chinese mainland.

The parent company would be willing to consider issuing debt securities and making the money available to GMHK in the form of a six-year loan. It could issue six-year fixed rate bonds. Alternatively it could arrange a six-year commercial paper programme for issuing six-month commercial paper. The market for fixed rate bonds is currently not very liquid and the required yield on a six-year issue to raise HK$ 550 million would be 6%. At the moment the commercial paper market is much more liquid and six-month commercial paper can be issued at 3.5%.

Another possibility that has been discussed is for GMHK to seek a listing on HKSE for either new equity shares or its own bond issue.

Penny Wong would have preferred to finance the acquisition from retained profits, but accepts that the company will have cash flow difficulties for the next year or so. She would like to repay any borrowing to finance the acquisition as quickly as possible, from retained profits in future years.

***Required***

Recommend to the board of GMHK, with reasons, how GMHK should try to finance the acquisition of Lucky Lion Handsets. You should explain why other methods of financing would be less suitable.

Your team has identified the following ways of financing for discussion at the board meeting:

- Net equity issue by the parent company
- Net equity issue by GMHK
- Commercial paper programme
- Bank loan
- Bond issue
- Retained equity

## Discussion points

The purpose of this exercise is for students to think about the alternative methods of financing an acquisition, when cash resources are insufficient to pay for the acquisition with cash. The exercise should encourage students to think about whether the finance should be raised by the parent company or by GMHK. In this exercise financing by means of an equity issue is not an option because of the **attitude** of the parent company. The company does not have enough cash to make the purchase out of its own resources, although the CFO wishes that this could be done.

The **choice** is therefore restricted to **different forms of debt capital**, and for **different terms**.

**LP references**

This exercise covers various aspects of the capital markets and LP references are Chapter 16 Section 3.3 and Chapter 16 Sections 9.2 – 9.4. Students may also find it useful to look at the Exam Practice Question at the end of Chapter 16 and the section on financing mergers in Chapter 18 Section 12. They may also refer to the section on obtaining a listing on HKSE in Chapter 15 Section 5.

**Key learning points**

Students should try to recognise different methods of financing the acquisition and eliminate those that are not possible. They should then consider the methods that would be possible and to reach a view about which method of financing would be best.

In this case, students may reach the conclusion that a **bond issue**, by either the parent company or GMHK, would be the best choice. (A bank might be unwilling to offer a loan of the size required, and if it did, it might demand security for the loan that GMHK might be unwilling to give.) If they choose this option, good students will also go on to consider the most suitable term for the bond issue, and for differing reasons may recommend an issue of bonds with a **maturity** of about **six to ten years**.

Your own views on this matter may differ. A suggested analysis and recommendation is given below.

There are several ways in which GMHK might try to raise the finance that it needs.

**New equity issue by the parent company**

An issue of new equity by the parent company has been **vetoed** by the board of China Golden Monkey Mobile (CGMM). The Board of GMHK could try to present an argument in favour of this method of financing, but the board of CGMM has stated that if it did raise new equity finance it would prefer to invest the money to grow the business within PRC.

**New equity issue by GMHK**

It also seems most **unlikely** that the board of China Golden Monkey Mobile will agree to a listing for GMHK equity shares on SEHK, because it would have to allow a substantial proportion (at least 25%) of the company's shares to be held by the investing general public, and the parent company would lose its 100% control of GMHK.

The acquisition of Lucky Lion would **not** seem to **justify** a decision by CGMM to reduce the size of its investment in GMHK.

Since financing the acquisition by means of new equity finance is unlikely to be acceptable, GMHK should consider borrowing.

**Commercial paper programme**

A commercial paper (**CP**) programme would involve issuing commercial paper to meet cash flow requirements. CP would have a **maturity of six-months**, and new paper would have to be issued regularly to repay maturing paper. Although the interest rate on CP would be lower than the interest rate on bonds, there is too much risk that the company will be unable to issue new CP to redeem maturing CP. A CP programme is more **suitable** for financing **working capital requirements** than for financing a long-term capital acquisition.

**Bank loan**

A medium-term bank loan might be appropriate, provided GMHK can find a bank that would be willing to provide the finance for an acquisition. The company could arrange repayment terms that would enable it to repay the loan gradually over time out of retained profits.

(**Note.** A revolving credit facility, like a CP programme, is better suited to the financing of short-term cash flow requirements than for longer-term financing.)

**Bond issue**

If a medium-term loan cannot be arranged, or if the interest rate would be too high, the only remaining solution would be to finance the acquisition with a bond issue, either by GMHK or the parent company. The bonds would have to be **listed** to attract investors. The term of the bonds might be as short as **six years** or as long as **ten years**.

GMHK is not highly geared, therefore a bank loan or bond issue would not take its gearing to an unacceptable level.

An issue of bonds could be made by either GMHK or the parent company. An application should be made for a listing for the bonds, and going ahead with the bond issue should be dependent on the probability of obtaining a **suitable price/yield**.

The **maturity** of the bonds should also be considered. The company might want to have accumulated sufficient cash by the time the bonds mature to redeem the bonds with cash, and so reduce the company's gearing. The issue should probably be for the medium-term, in the region of perhaps seven years (or as much as ten years).

**Bonds or bank loan? Retained profits?**

Penny Wong would like to pay for the acquisition out of the company's own cash flows (retained profits), but this is not possible at the moment, because the company does not have the cash. However, if it is possible to obtain a bank loan for the acquisition, GMHK could pay back the loan principal over time from its operational cash flows. This would reduce the (interest) cost of the finance.

**Problems** with a **bank loan**, however, are that:

- A bank might be **unwilling** to finance a company acquisition
- The bank might ask for **security** for any loan, which CGMM or GMHK might not be willing to give. Unsecured bonds might be a preferable alternative.

***Recommendation***

The recommendation (although you may disagree) is that the acquisition should be financed by an issue of **unsecured bonds by the parent company**, possibly with a seven-year maturity. The finance would be raised for the purpose of funding the acquisition of Lucky Lion Handsets.

The amount of finance required should be sufficient to pay for the acquisition and the fees and other costs of the bond issue, unless CGMM or GMHK is able to finance some costs out of their existing cash resources.

Penny Wong has expressed a wish to finance this acquisition out of operational cash flows, but this is not possible at the moment. A longer-term objective may be for the company to try to finance growth from retained profits and to pay for future acquisitions and capital spending from cash resources.

However as the group continues to grow, the board of CGMM should recognise that the **financing structure** of the group should be **a balance between equity and debt that minimises the group's weighted average cost of capital**.

[**Note**: Good students should be able to make a clear assessment of each way of financing and to justify their recommendations with relevant facts in a convincing way given by the case background.]