

考 試 科 目	經濟學	所 別	商學院共同科	考 試 時 間	2 月 26 日(日) 第一節
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Multiple Choice (1% each, 20% in total)

1. The market structure of an industry where firms have to invest a fixed cost before producing goods cannot be perfect competitive because
 - (a) the average cost decreases as production level decreases.
 - (b) the average cost is almost always higher than the marginal cost.
 - (c) the goods each firm produced are not perfectly substitute.
 - (d) firms always earn positive profit.

2. Suppose in a country, there is one firm in an industry. Suppose also there is infinite number of firms producing the same good in the rest of world. What is the possible impact on welfare when the country opening up to trade
 - (a) There will be no deadweight loss in the country.
 - (b) The deadweight loss still exists but smaller under trade.
 - (c) The deadweight loss is larger under trade.
 - (d) The producer surplus is larger under trade.

3. Suppose there are two countries. In the same industry, each country has only one producer. Producers produce the same good. Two producers have the same cost function and face the same demand function. Suppose there is international trade between two countries and producers choose output to maximize profit. There is also no collusion between firms.
 - (a) Compared with the scenario when there is no trade, the price charged by a firm is lower.
 - (b) Compared with the scenario when there is no trade, the production level of each firm is larger.
 - (c) Compared with the scenario when there is no trade, the deadweight loss is larger.
 - (d) Compared with the scenario when there is no trade, the profit of each firm increases.

4. In the industry with monopolistic competition,
 - (a) the price charged by a firm is larger than the average cost.
 - (b) the price charged by a firm is lower than the average cost.
 - (c) the number of producers increases as the aggregate demand increases.
 - (d) the number of producers decreases as the aggregate demand increases.

5. In the oligopoly economy with two identical producers producing the same product, when two producers collaborate to maximize aggregate profit
 - (a) The aggregate production level is higher than that when there is only one producer.

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- (b) The aggregate production level is lower than that when there is only one producer.
- (c) The aggregate production level is the same as that when there is only one producer.
- (d) The price is lower than that when there is only one producer.
6. Ryan has an income of \$3,000. When the price of good A is \$50 and the price of good B is \$30, he consumes 30 units of good A and 50 units of good B. After the price of good B decreases to \$15, he consumes 30 units of good A and 100 units of good B. We can use the information provided to conclude that
- (a) good A is a normal good.
- (b) good A is a normal good, and good B is an inferior good.
- (c) good A is an inferior good, and good B is a normal good.
- (d) both goods A and B are normal goods.
7. Two drivers -Tom and Jerry- each drive up to a gas station. Before looking at the price, each places an order. Tom says, "I'd like 10 gallons of gas." Jerry says, "I'd like \$10 worth of gas." What is each driver's price elasticity of demand?
- (a) 0, 1.
- (b) 1, 0
- (c) 0, infinity.
- (d) 1, infinity.
8. Suppose buyers of computers and printers regard those two goods as complements. Then an increase in the price of computers will cause
- (a) a decrease in the supply of printers and a decrease in the quantity demanded of printers.
- (b) a decrease in the demand for printers and a decrease in the quantity supplied of printers.
- (c) a decrease in the equilibrium price of printers and an increase in the equilibrium quantity of printers.
- (d) an increase in the equilibrium price of printers and a decrease in the equilibrium quantity of printers.
9. In the market for widgets, the supply curve is the typical upward-sloping straight line, and the demand curve is the typical downward-sloping straight line. The equilibrium quantity in the market for widgets is 200 per month when there is no tax. Then a tax of \$5 per widget is imposed. As a result, the government is able to raise \$750 per month in tax revenue. We can conclude that the equilibrium quantity of widgets has fallen by
- (a) 25 per month.
- (b) 50 per month.
- (c) 75 per month.
- (d) 100 per month.

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10. The total cost to the firm of producing zero units of output is

- (a) zero in both the short run and the long run.
- (b) its fixed cost in both the short run and the long run.
- (c) its fixed cost in the short run and zero in the long run.
- (d) zero in the short run and its fixed cost in the long run.

11. As a result of an open market purchase, bank reserves

- (a) rise and interest rates fall.
- (b) and interest rates both fall.
- (c) and interest rates both rise.
- (d) fall and interest rates rise.

12. Theoretically, one can distinguish a demand-pull inflation from a cost-push inflation by comparing

- (a) how fast prices rise relative to wages.
- (b) when prices rise relative to wages.
- (c) the unemployment rate with its natural rate level.
- (d) government debt to real GDP.

13. If oil prices fall at the same time that the government increases its purchases, in the short run

- (a) aggregate output and the price level will both fall.
- (b) aggregate output will increase, but the price level may either increase or decrease.
- (c) aggregate output and the price level will both increase.
- (d) aggregate output will increase, but the price level will fall.

14. The less interest-sensitive is money demand, the _____.

- (a) flatter is the LM curve
- (b) more effective is monetary policy relative to fiscal policy
- (c) steeper is the IS curve
- (d) more effective is fiscal policy relative to monetary policy

15. If currency outstanding equals \$200 million, checkable deposits equal \$1 billion, reserves equal \$150 million, and the required reserve ratio is 0.10, the money multiplier equals

- (a) 3.14.
- (b) 3.43.
- (c) 0.86.

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- (d) 4.
16. The total sales of all firms in the economy for a year
- (a) equals GDP for the year.
 - (b) is larger than GDP for the year.
 - (c) is smaller than GDP for the year.
 - (d) Any of the above is possible.
17. The theory of purchasing-power parity implies that the demand curve for foreign-currency exchange is
- (a) downward sloping.
 - (b) upward sloping.
 - (c) horizontal.
 - (d) vertical.
18. When a country allows trade and becomes an exporter of a good, which of the following is not a consequence?
- (a) The price paid by domestic consumers of the good increases.
 - (b) The price received by domestic producers of the good increases.
 - (c) The losses of domestic consumers of the good exceed the gains of domestic producers of the good.
 - (d) The gains of domestic producers of the good exceed the losses of domestic consumers of the good.
19. Suppose that the adult population is 4 million, the number of unemployed is 0.25 million, and the labor-force participation rate is 75%. What is the unemployment rate?
- (a) 6.25%.
 - (b) 8.3%.
 - (c) 9.1%.
 - (d) 18.75%.
20. If a \$1,000 increase in income leads to a \$750 increase in consumption expenditures, then the marginal propensity to consume is
- (a) 0.75 and the multiplier is 1 1/3.
 - (b) 0.75 and the multiplier is 4.
 - (c) 0.25 and the multiplier is 1 1/3.
 - (d) 0.25 and the multiplier is 4.

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Problem Solving (80%)

1. In a monopolistic competitive economy, each producer faces the following demand function

$$Q = \frac{1}{n} - P,$$

where Q is the production level, n is the number of producer and P is the price charged by a firm. Suppose each producer has the following cost function

$$TC = 1 + Q,$$

where TC is the total cost. Solve the production level and price charged by a firm. Please also solve the number of producer at equilibrium (it need not to be an integer.) (20%)

2. There are four industrial firms in Happy Valley.

Firm	Initial Pollution Level	Cost of Reducing Pollution by 1 Unit
A	70 units	\$25
B	80 units	\$20
C	50 units	\$15
D	40 units	\$10

The government wants to reduce pollution to 160 units, so it gives each firm 40 tradable pollution permits.

- (a) Graph the demand and supply curves for tradable pollution permits. (4%)
- (b) Who sells permits and how many do they sell at market equilibrium? Who buys permits and how many do they buy? What is the total cost of pollution reduction in this situation? (11%)
- (c) How much higher would the costs of pollution reduction be if the permits could not be traded? (3%)
- (d) What size of a corrective tax would achieve the goal of reducing pollution to 160 units? (2%)

3. Economist Michael Woodford recently says: "If prices or wages are sticky, monetary policy affects real activity, and so the consequences of an increase in government purchases depend on the monetary policy response."

- (a) Please explain the first part of the above quote, why is that if prices or wages are sticky, monetary policy affects real activity? (10%)
- (b) Please explain the second part of the above quote, what does it mean by "the consequences of an increase in government purchase depend on the monetary policy response"? (10%)

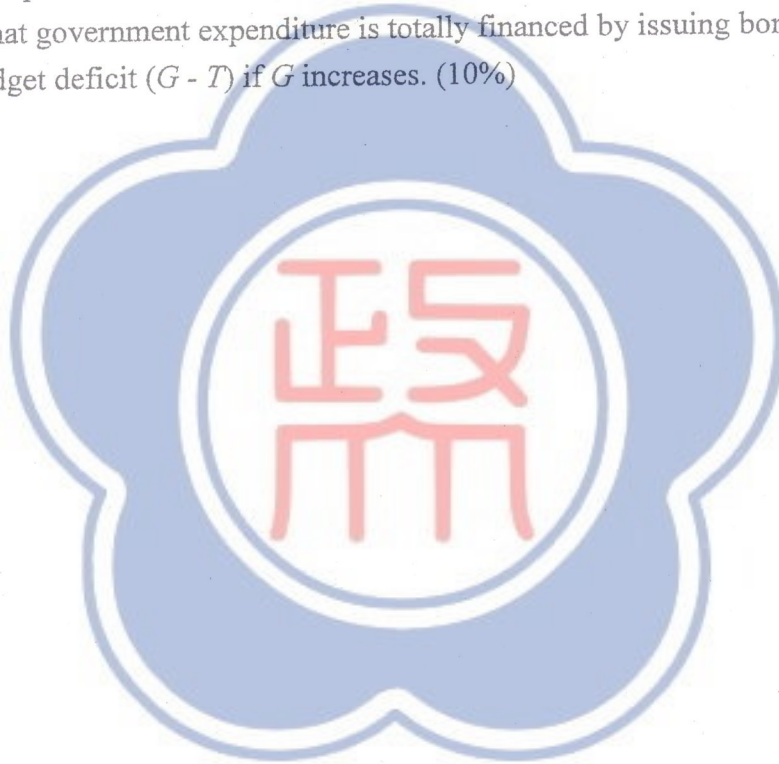
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4. Consider a close economy described by:

$$Y = C + I + G$$

$$C = a + b(Y - T), 0 < b < 1, I = \bar{I}$$

- (a) Compute the output multiplier with respect to government consumption (dY/dG), under the assumption that G is totally financed by raising new lump-sum tax. (10%)
- (b) Now, assume a proportional taxation system, i.e. $T = t \cdot Y$, where t is the average income tax rate. Under the assumption that government expenditure is totally financed by issuing bonds, show what would happen to the budget deficit ($G - T$) if G increases. (10%)



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注意事項：1、請將算式以及推導過程臚列清楚。
2、每題 10 分，注意時間的分配。

一、試求以下極限值：

$$(1) \lim_{x \rightarrow 0} \sin\left(\frac{\pi}{x}\right)$$

$$(2) \lim_{x \rightarrow 1} \left(\frac{\ln x}{x-1}\right)$$

二、試求不定積分 $\int \sin^5 x \cdot \cos^2 x dx = ?$

三、已知 $y = x^{\sqrt{x}}$ ，試求 $\frac{dy}{dx} = ?$

四、請問方程式 $f(x) = |x|$ 是否可微分 (differentiable) ?

五、已知 $y = xe^x$ ，試求 n 階微分 (nth derivative) $\frac{d^n y}{d^n x} = ?$ (5 分)

六、求 $f(x) = x^4 - 4x^3$ 的反曲點 (Inflection points) 的座標。

七、 $x^3 + y^3 = 6xy$ ，求 $\frac{dy}{dx} = ?$ 此曲線的切線為水平者有兩個點，為垂直者也有兩個點，請列出這四個點的座標。(15 分)

八、試求 $\int_0^1 (1-x^2)^n dx$ 的值？

九、請求出以下微分方程的解： $\frac{dy}{dx} = \frac{1}{2}(y^2 - 1)$ ， $y(0) = 2$ 。

十、當用泰勒展開式 (到二階微分) 估計 $f(x) = \sqrt[3]{x}$ 的解時，在 $7 < x < 9$ 區間的誤差值在多少範圍內？

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本試題總計包含四個個案(每一個個案計 25 分, 共計 100 分), 在每一個個案後面, 都列有問題(Questions), 在時間範圍內, 請儘量作答, 也請注意時間。

個案一

當個人電腦失去魅力, 由平板電腦取代, 受到最大衝擊的科技產業之一, 就是個人電腦裡最重要的關鍵零組件: 主機板。

國內四大主機板業者, 除了華碩成功由筆記型電腦轉型為系統業者之外, 技嘉、微星、精英都面臨轉型選擇, 但卻有一家二線主機板公司固守本業, 只以二百零五位員工, 就演出一場主機板業的以小搏大的戲碼。

這家公司就是華擎科技, 去年每股盈餘(EPS)估為十一元, 創下過去四年以來新高, 更以二線低階主機板業者之姿, 在組裝通路市占率一舉超越營收規模大上近六倍的微星, 攻上全球第三大。

這樣的成績, 就連目前主機板二哥一技嘉科技副總裁馬孟明都說:「華擎是做得不錯, 市場有競爭是好事。」

過去五年來, 主機板業者面臨產業夕陽化, 近四年平均售價下滑近七%, 逼得所有主機板業者都在進行多角化策略, 朝筆記型電腦等異業轉型。華擎卻專注本業。

其實華擎也曾經受到筆記型電腦的誘惑, 甚至想在品牌建立後, 成為母公司和碩未來代工產能的出海口。2008 年, 華擎推出筆電產品, 不僅採購規模比不上其他筆電品牌大廠, 加上全球售後維修的成本都超乎華擎想像。一年後, 華擎認清現實, 小賠出場。

華擎當時員工不到兩百人, 要從主機板品牌延伸到筆電市場, 這中間的品牌差距不知得花多少錢才能補上,「沒錢, 開發成本又高,」前半年賺的錢, 後半年全都賠上了, 還倒貼。

當同業忙轉型, 華擎卻回頭顧本業, 成為主機板業一個異數。「2009 年華擎回頭從低階往上慢慢把高階打通, 你去看它的產品種類, 高、中、低階的主機板型號只有別人的一半, 既符合大部分使用者的需求, 研發費用又降低, 華擎的精品策略, 夠聚焦, 對手腳步亂了, 就會有機會,」一位研究機構個人電腦產業分析師指出。

「重新聚焦」自己擅長的事情, 說來容易, 但, 要從低階往高階市場走, 又是另一場腦袋革命。

眼看華碩成功變身為筆電品牌廠, 技嘉、微星、精英陸續跟進, 其中, 微星最為積極, 2009 年喊出要成為全球十大筆電品牌, 重心大幅轉向。微星轉型筆電品牌業者面臨瓶頸, 尤其是過去三年, 動輒出現單季虧損, EPS 都在 0.5 元以下低檔徘徊, 獲利能力大不如前。

反觀華擎, 從低階往高階轉型, 平均售價過去四年來一路走高, 毛利率還長期領先微星、技嘉。而對手的失策, 更讓華擎找到機會, 一舉擠進全球主機板組裝通路前三名。

華擎的故事, 顯示沒有夕陽產業, 只有夕陽思維。

個案一問題:

(請儘可能用商管的學理/理論, 來回答下列的問題)

1. 華擎科技成功的主要因素為何?
2. 企業如果要進行轉型(進入其他事業領域), 通常如何做比較好?
3. 文中提到的「要從低階往高階市場走, 又是另一場腦袋革命」, 請推理: 其在經營管理上的作法可能為何?

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個案二

陳一新、李大同於 2003 年在紙張塗刷機器的產品上賺取了一大筆錢。他們沉浸了 10 年，致力於發展替雜誌生產光面紙的機器，後來他們的機器在成本方面只有其它塗刷機器的三分之一。他們決定將他們的設計和專利權賣給一家大型紙業公司，售價是 2 億 8000 萬台幣。

現在陳一新與李大同打算以這一筆錢來組織一家與休閒活動有關的多角化公司，他們認為在未來的 10 年內，這些公司會有成長的潛力。透過會計師及購併顧問公司公司的協助下，在六個月之間，他們買下了一堆公司(列示於下表)，地點都座落在南部地區。

公司	營業描述	雇用員工人數	2002 年營業收入
梅花電影公司	20 家連鎖電影院，分佈於 5 個地區	38	3200 萬元
中強廣播電台	經營二家 FM 電台	27	2300 萬元
使命海灣遊艇	製造娛樂用遊艇	42	5100 萬元
奇妙傢俱	製造室外用傢俱	130	1 億 1000 萬元
南活停車場	在遊覽區內經營四家停車場及其停車設備	10	1600 萬元

陳一新與李大同想設計出一種組織結構，使目前每家公司的管理者能繼續獨立自主地經營下去。但他們兩個希望能減低幕僚功能的閒置性，希望作業程序能標準化，而又有一套視野寬廣的控制系統，使分別擔任董事長和總裁的陳一新與李大同能予以監督。

個案二問題：

(請儘可能用商管的學理/理論，來回答下列的問題)

1. 在組織結構方面，陳一新與李大同可能可以考慮採用的方式為何？
2. 你會建議他們採取哪一種結構方式？為什麼？
3. 如果他們期望未來 10 年內再買下 10 家以上的公司時，你上述的建議是不是一樣？
4. 如果他們繼續購併位於商業辦公室大樓附近區域的公司而不是休閒公司時，你的建議是不是會改變？

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Case 3

William "Trip" Hawkins had a lot riding on the Christmas 1994 shopping season. Hawkins is the founder of 3DO, a company whose namesake product is a sophisticated video-game player. Several years ago, Hawkins set out to develop the world's most technologically advanced home gaming system. As a result, 3DO's processor is twice as powerful—32 bits instead of 16—as those found in competing systems from Sega and Nintendo. Moreover, 3DO software comes on CD-ROM instead of cartridges. 3DO can thus boast 3-D realism and even allows video games to incorporate actual video clips from movies and TV shows.

Despite the avowed sophistication of his brainchild, Hawkins was hoping for broad consumer appeal from the outset of his marketing campaign. "This is not a product for computer nerds," he promised. "It's for the masses." The first 3DO players went on sale in October 1993. Manufactured in Japan by Matsushita and bearing the Panasonic brand, they carried a hefty price tag of \$699. A year later, about 300,000 units had been sold worldwide.

When Hawkins first conceived of 3DO, he realized that "razors" would never sell unless plenty of "blades" were available: In other words, he knew that he could drive sales of 3DO machines only if he could convince software developers to create popular games to be played on them. To do that, he took advantage of developers' resentment at the exorbitant fees—as much as \$12 per cartridge—that they had to pay to Sega and Nintendo for every piece of software they sold. Hawkins offered a licensing deal stipulating a fee of only \$3 per game. Developers were also attracted by the fact that 3DO's disc format was cheaper to manufacture than game cartridges.

However, despite Hawkins' success at lining up hundreds of software developers, only about 50 game titles were available during the first few months that 3DO was on sale. None of them was an instant hit along the lines of, say, Sonic the Hedgehog, the game that helped propel sales of Sega's Genesis player. Then there was the issue of price: With Sega and Nintendo players selling for less than \$100, even consumers who wanted to own 3DO players were hard-pressed to justify the premium price. Before long, limited consumer demand had put a severe financial strain on Hawkins's company; 3DO posted a \$51 million loss for the year that ended March 31, 1994.

This dismal performance prompted one industry analyst declare that "3DO is going to fall. It will be a footnote in the history of the business." And in fact, by May the stock price of 3DO Co. had sunk to the mid-teens—down from an October 1993 high of \$47. In mid-December 1994, the price dipped below \$11 per share. The picture was further clouded after Hawkins made several decisions that angered suppliers. First, he launched an in-house software-development program that put the company in direct competition with its own outside developers. Even more damaging was his announcement that in order to help cover manufacturing and advertising costs, the \$3-per-unit licensing fee would be doubled. After vendors expressed outrage, however, Hawkins was forced to scale back the increase to \$1 instead of \$3.

As the Christmas shopping season got under way in 1994, there was some basis for optimism that 3DO might make a solid showing. For one thing, Korea's Goldstar began marketing a 3DO unit, and players became available in about 6,000 stores—three times the number of outlets as in 1993. In addition, 100 game titles were now available, including Demolition Man, a possible breakout title featuring actual footage from the Sylvester Stallone movie of the same name. An aggressive TV advertising campaign showed competing machines being dumped in a coffin as an announcer urged video-game fans to "put away your toys." Perhaps most important, however, was a 40-percent in the list price of 3DO machines, down to \$399.

Still, a number of lower-priced competitors are waiting in the wings: By Christmas 1995, Sega, Nintendo, and Sony are all expected to be selling powerful new game players to compete directly with 3DO. Industry consultant Paul Saffo sums up the latest in expert opinion on Trip Hawkins's 3DO venture: "Trip's cleared the runway," says Saffo, "but he hasn't cleared the trees."

Questions:

1. What pricing strategy did Hawkins use when 3DO was first released?
2. What are some of 3DO's key product features?
3. Do you agree with Hawkins's 1994 decision to alter the fee arrangement with his software suppliers?
4. How might 3DO be classified in terms of the growth-share matrix?
5. Do you think that 3DO will succeed during the next few years? why or why not?

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Case 4

Do you think that production workers should be given substantial freedom to work as they wish—so long as they meet their goals? In essence, you would be empowering all employees, giving them the flexibility in their schedules to do their work, eliminating the traditional “clock punching” practice. Do you think workers would take advantage of the situation? Would management lose control? Management at the Roppe Corporation, base in Fostoria, Ohio, believe that the answer to both questions is No.

The Roppe Corporation produces rubber products (baseboards, stair treads, floor tiles, etc.). The company was generating annual sales in the \$50 million range. Although this was “adequate” in management's view, they knew that the company could do better. In fact, although sales growth appeared imminent with the up-swing in the building economy in the mid- to late 1990s, production employees were producing at only 75 percent of standard. That's because employees felt that if they produced more to meet the quota, management would merely increase the standard. As a result, the employees, after hitting the 75 percent range, just stopped working. So management tried an experiment. Employees were offered the following proposition. Production goals would be increased by 10 percent. And when employees met the new standard, their hourly pay would also increase by 10 percent. Furthermore, although the standard would be set according to what time studies showed could be produced in eight hours of work, if the employees met the daily goals more quickly, they could go home—and still get eight hours of pay at the 10 percent increased level.

In less than one week, management noticed a dramatic change. Employees increased their productivity (and the quality of the products) to meet the new standard. For example, the old standard for rubber baseboards was 26,000 feet per day per line. Typically, workers made approximately 21,500 feet. Yet, under this new plan, the goal was increased to 29,000 feet per day per line. And the workers produced every inch of it! That's a 35 percent increase over what they had been producing the week before! What's more, they did it in under seven hours and left for the day. Since the program was implemented, employees police themselves. Sabotage of machinery has disappeared. The machines don't suddenly break down after reaching 75 percent of standard. Supervisors also don't have to monitor the length of workers' breaks or lunch periods. And overtime for maintenance workers has significantly decreased. In fact, routine, preventive maintenance can often be performed between shifts now—especially when the employees leave early.

Questions :

1. Describe the employees' behavior before and after the company “empowered” them in terms of (a) hierarchy of needs, (b) motivation hygiene theory, (c) equity theory, and (d) expectancy theory.
2. Do you believe that practices such as the ones used at Roppe Corporation can be used successfully at other companies? Why or why not? Do special conditions have to exist for such a system to work? Explain.

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Please Answer All Questions in ENGLISH

[ARTICLE 1] Foxconn: Robots Don't Complain or Die

OTHER than the Peoples Liberation Army, Foxconn may well be Chinas largest individual employer, and certainly its most important. The secretive electronics manufacturer, whose prestigious clients include Apple, has a workforce of more than 1 million, including over 500,000 in one vast factory in Shenzhen.

Over the past decade Foxconn's success has epitomized Chinas ability to take elegant designs from high-wage countries and turn them out cheaply in huge quantities. Initially applauded for its ability to create vast numbers of jobs, the company's success has recently come to be seen in a harsher light. Last year there was a spate of employees at the Shenzhen plant committing suicide; in the latest such case, a 21-year-old worker threw himself off a building in late July. In May an explosion at a new factory in Chengdu killed three more employees and, it is believed, caused delays in production of Apples iPads.

To pacify its increasingly restive workers, Foxconn has repeatedly bumped up their wages, improved facilities, provided counseling and swathed its factories with nets to catch anyone leaping from a window. All this has resulted in higher costs, and signs that the company's hitherto hugely successful business model has run its course. At a closed retreat in late July, Terry Gou, the chief executive of the company (which is also known as Hon Hai) unveiled a plan to replace a huge amount of human labor with robots by 2013.

In its public statement on the move, Foxconn talked about moving the more than 1m workers higher up the value chain beyond basic manufacturing work and of its desire to move workers from more routine tasks to more value-added positions in manufacturing such as research and development, innovation and other areas that are equally important to the success of our operations. But automation on the scale it is talking about would surely mean some of those human workers losing their jobs.

To a large extent, Chinas recent economic development has been about reversing the rich-world trend towards automation that is, using labor to replace capital in the manufacturing chain. Wages are now rising rapidly as a result of the demand for skilled labor (and because of big increases in the legal minimum wage), so one would expect this to make firms adjust their mix of labor and capital.

Many other, smaller, Chinese manufacturers have begun making similar moves, swapping increasingly costly labor with a bit more capital equipment. Foxconn is proposing to do it all (pardon the inevitable pun) in one

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great leap forward. But it may find this quite a challenge: its expertise has been in quietly running well-regimented armies of people making goods for highly visible companies. It is not known to have any particular skills in creating highly automated production lines; and moving in this direction will put it in direct competition with companies that do.

Still, it may have been an easy decision for Mr Gou. His highly image-conscious customers are bound to have been worried by the spate of horror stories about workers at Foxconn. If he did not change his production methods, the customers might feel obliged to look for another supplier.

Manufacturing experts and economists have been debating for some while now whether China's rising labor costs and skill shortages might spell an end to the cheap China price, leading global consumer-goods companies to shift elsewhere in Asia for their low-cost production or even bring it back to their home countries. Certainly, some of the West's strongest (and most highly automated) manufacturers, including Germany's Mittelstand firms, have proved surprisingly resilient to the pressure from cheap Chinese labor.

Others are sceptical: they say that Chinese firms are proving so adept at producing in ever greater quantities with fewer hands that they are set to remain fearsome competitors. Either way, the Chinese authorities will presumably be monitoring all of this very closely, and worrying about the prospect of the country's industrial progress leading, as it did in the West, to large numbers of relatively well educated and articulate factory workers being thrown on to the streets.

(Source: The Economist, Aug 2, 2011)

Article 1 Questions:

1. According to the article, what problems did the Foxconn face?
2. What are the advantages and disadvantages if the Foxconn decides to use robots? Specify your answers.
3. If you were Mr. Gou, would you make the decision to use robots instead of recruiting humans in the future? Explain your reasons.

[ARTICLE 2] A Former No-Name from Taiwan Builds a Global Brand

The vodka and whiskey flowed freely in a Taipei exhibition hall the size of an airplane hangar on Oct. 7. A six-piece cover band entertained guests with Queen's *We Will Rock You* and Engelbert Humperdinck's *Quando, Quando, Quando*. The occasion: Taiwanese smartphone maker HTC was launching a line of handsets using

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Google's Android operating system. HTC, a brand virtually unknown in the U.S. two years ago, is the market leader in Android phones—the one segment of the market that's growing faster than Apple's iPhone. Before the music started, executives from wireless carriers and other partner companies took the stage to praise HTC's chief executive officer, Peter Chou. "The true inventor of the smartphone is Peter Chou and his team," said Yves Maitre, a senior vice-president at French operator Orange. "He is the one."

HTC's stock has jumped 94 percent this year, and with a market cap of 552 billion Taiwan dollars (\$18 billion) the company is now the third-most-valuable Taiwanese technology company after chipmaker Taiwan Semiconductor and contract manufacturer Hon Hai Precision Industry, better known as Foxconn. HTC launched the first Android smartphone in 2008—the T-Mobile G1—and has a 39 percent share of that market globally. Thanks to the success with Android, which just passed Apple's iOS as the fastest-growing mobile platform in the world, analysts expect sales to soar 78 percent this year, according to data compiled by Bloomberg. That's far better than rivals Apple, Nokia, Research In Motion, and Samsung Electronics.

Chou is looking for ways to extend his Android lead. Drew Bamford, HTC's director of user experience, says he plans to make Android phones better able to access video, music, and other content. That's been "a soft spot with Android products," he says. HTC is teaming up with U.S. e-commerce site Kobo to sell e-books and hopes to sign deals with retailers such as Amazon.com and Barnes & Noble. There's also an expected launch by early next year of an Android-powered tablet PC to compete with the iPad, something Chou and others at HTC won't discuss.

HTC is an unlikely Android leader. When the company got its start in 1997, it manufactured personal digital assistants for Compaq. HTC followed the tried-and-true Taiwanese outsourcing formula of designing and manufacturing gadgets for other companies without a brand name of its own. Chou got his first big break in 2002 when Microsoft awarded HTC a contract to make smartphones, and the manufacturer quickly became the world's top producer of Windows phones. It set up its U.S. headquarters in Bellevue, Washington State, to be close to Microsoft's home office.

Even as the Microsoft business was growing, Chou says he worried that a brandless HTC would forever remain a low-margin manufacturer of commodity products. "We were doing pretty well, we were making a lot of profit," he says. "But we were mostly minor partners" for telecom operators that bought and resold HTC phones. In 2007, the year Apple introduced the iPhone and set the smartphone market on fire, Chou decided to move away from the anonymous contract-manufacturing business. Last year, HTC spent \$100 million on a fourth-quarter marketing blitz, and Chou says he'll spend up to \$400 million this year. The company is now the world's fourth-largest smartphone manufacturer after Nokia, RIM, and Apple, according to IDC.

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HTC's rise to the top tier of handset makers has given it more clout with partners—hence the accolades at the October launch event. Chou says wireless operators are more willing than before to work with HTC on technology and marketing plans. Operators profess admiration for Chou's hands-on approach. "He breathes his business," says Mark Liversidge, chief marketing officer at Hong Kong cellular operator CSL.

HTC's relationship with Microsoft, which is struggling to stay relevant in smartphones, is also changing. "We are a major partner, not a junior partner," Chou says. He first saw the design concept of Microsoft's just-introduced mobile system, Windows Phone 7, a year and a half ago. "I told them they are going in the right direction," he says. On Oct. 11, Microsoft and HTC unveiled five handsets using Windows Phone 7. Although Microsoft's fortunes in mobile software have fallen (it's now the No. 5 player), Chou and others at HTC argue there are customers out there who do want what Windows Phone 7 has to offer. "Our commitment to Windows is unwavering," says John Wang, HTC's chief marketing officer. HTC's new Windows Phone 7 handsets allow Microsoft users to connect with their Xbox Live games and Zune music, and some businesses want easy access to Office applications such as Word and Excel.

Analysts point out that for HTC there's little downside to giving Microsoft another shot. Microsoft plans to spend big on marketing Windows Phone 7, which means the Taiwanese company won't have to worry about getting the word out. HTC "should benefit the most from Windows Phone 7's kickoff," a team of Macquarie Securities analysts led by Daniel Chang wrote in an Oct. 6 report.

The main events, though, are HTC's Android devices—and keeping up the momentum against the iPhone. Chou is now focusing on expanding sales in the U.S. and on making inroads into mainland China. The HTC team, he brags, is very global. "More than half my direct reports are non-Taiwanese," he says. E-mail and documents have been in English "from day one," says Chou. "We just want to come up with our own innovations, our own flavor." And what about the competition from his most formidable rival, Apple? "HTC is HTC," he says impatiently. "I don't care about the iPhone. I don't even look at it."

(By Bruce Einhorn, Business Weekly, 28 October 2010)

Article 2 Questions:

1. What reasons made the HTC become one of the most successful smartphone providers in the USA in two years? Explain your answers.
2. According to the article, what is the relationship among HTC, Microsoft and Google (Android platform)?
3. Few years ago, HTC was an OEM company, similar to other typical Taiwanese technology companies. However, what factors force the company deciding to establish its own brand and what are the effects after

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branding?

4. In terms of product development, what different strategies do the Apple and the HTC use? Explain your answers.

[ARTICLE 3] Big and Clever: Why Large Firms are Often More Inventive than Small Ones

SOME people say it is neither big nor clever to drink. Viz, a British comic, settled that debate with a letter from a reader who said: "I drink 15 pints a day, I'm 6 foot 3 inches tall and a professor of theoretical physics." However, another question about size and cleverness has yet to be resolved. Are big companies the best catalysts of innovation, or are small ones better?

Joseph Schumpeter, after whom this column is named, argued both sides of the case. In 1909 he said that small companies were more inventive. In 1942 he reversed himself. Big firms have more incentive to invest in new products, he decided, because they can sell them to more people and reap greater rewards more quickly. In a competitive market, inventions are quickly imitated, so a small inventor's investment often fails to pay off.

These days the second Schumpeter is out of fashion: people assume that little start-ups are creative and big firms are slow and bureaucratic. But that is a gross oversimplification, says Michael Mandel of the Progressive Policy Institute, a think-tank. In a new report on "scale and innovation", he concludes that today's economy favours big companies over small ones. Big is back, as this newspaper has argued. And big is clever, for three reasons.

First, says Mr Mandel, economic growth is increasingly driven by big ecosystems such as the ones that cluster around Apple's iPhone or Google's Android operating system. These ecosystems need to be managed by a core company that has the scale and skills to provide technological leadership.

Second, globalisation puts more of a premium on size than ever before. To capture the fruits of innovation it is no longer enough to be a big company by American standards. You need to be able to stand up to emerging-world giants, many of which are backed by something even bigger: the state.

Third, many of the most important challenges for innovators involve vast systems, such as education and health care, or giant problems, such as global warming. To make a serious change to a complex system, you usually have to be big.

If true, this argument has profound implications for policymakers (though Mr Mandel does not spell them out).

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Western governments are obsessed with promoting small businesses and fostering creative ecosystems. But if large companies are the key to innovation, why not concentrate instead on creating national champions? Anti-trust regulators have strained every muscle to thwart the creation of monopolies (for example, by preventing AT&T, a telecoms firm, from taking over the American arm of T-Mobile). But if one behemoth is likely to be more innovative than two smaller companies, why not allow the merger to take place?

What should we make of Mr Mandel's argument? He is right that the old "small is innovative" argument is looking dated. Several of the champions of the new economy are firms that were once hailed as plucky little start-ups but have long since grown huge, such as Apple, Google and Facebook. (In August Apple was the world's largest listed company by market capitalisation.) American firms with 5,000 or more people spend more than twice as much per worker on research and development as those with 100-500. The likes of Google and Facebook reap colossal rewards from being market-makers rather than market-takers.

Big companies have a big advantage in recruiting today's most valuable resource: talent. (Graduates have debts, and many prefer the certainty of a salary to the lottery of stock in a start-up.) Large firms are getting better at avoiding bureaucratic stagnation: they are flattening their hierarchies and opening themselves up to ideas from elsewhere. Procter & Gamble, a consumer-goods giant, gets most of its ideas from outside its walls. Sir George Buckley, the boss of 3M, a big firm with a 109-year history of innovation, argues that companies like his can combine the virtues of creativity and scale. 3M likes to conduct lots of small experiments, just like a start-up. But it can also mix technologies from a wide range of areas and, if an idea catches fire, summon up vast resources to feed the flames.

However, there are two objections to Mr Mandel's argument. The first is that, although big companies often excel at incremental innovation (i.e. adding more bells and whistles to existing products), they are less comfortable with disruptive innovation—the kind that changes the rules of the game. The big companies that the original Schumpeter celebrated often buried new ideas that threatened established business lines, as AT&T did with automatic dialling. Mr Mandel says it will take big companies to solve America's most pressing problems in health care and education. But sometimes the best ideas start small, spread widely and then transform entire systems. Facebook began as a way for students at a single university to keep in touch. Now it has 800m users.

The second is that what matters is not so much whether companies are big or small, but whether they grow. Progress tends to come from high-growth companies. The best ones can take a good idea and use it to transform themselves from embryos into giants in a few years, as Amazon and Google have. Such high-growth firms create a lot of jobs: in America just 1% of companies generate roughly 40% of new jobs.

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Let small firms grow big

Politicians should certainly stop demonising big firms and sentimentalising small ones: an economy needs both. But they should not allow their new-found appreciation of big companies to degenerate into a taste for picking national champions. Such firms typically gobble subsidies and crowd out smaller, more creative firms. Nor should they start tolerating monopolies. The key to promoting innovation (and productivity in general) lies in allowing vigorous new companies to grow big, and inefficient old ones to die. On that, Schumpeter never changed his mind.

(Source: The Economist, December 17th 2011)

Article 3 Questions:

1. Why did Michael Mandel claim that big firms are more inventive than small ones? What were his arguments?
2. Does the author agree or disagree with Michael Mandel's statement in 1942? In what ways? Explain your answers.
3. In your point of view, how could small firms be able to compete with big ones in terms of innovation and invention? State your opinions.

