MGT 4195 STRATEGIC MANAGEMENT
MIDTERM EXAMINATION
MARCH 4, 2010
PROFESSOR JAY LEE

INSTRUCTION:
This exam consists of four parts, with a total of 100 points. You need to answer ALL questions. Points are assigned to each question, so allocate your time accordingly. Write or mark your answer with pen only. Do not attach additional pages to this exam. If you need more space, use the back of the pages, and indicate on the front of that page of the exam that you have done so. Good luck!

SECTION (Circle one) A (12:05-1:25p) B (1:35-2:55p)

NAME: _____**(SUGGESTED ANSWERS)**_____

SIGNATURE: _____

SCORED:

Part I (20 points): _____20_____

Part II (24 points): _____24_____

Part III (27 points): _____27_____

Part IV (27 points): _____27_____

Section & Name: _____2_____
(2 points)

Total (100 points): _____100_____

PART I: MULTIPLE CHOICE QUESTIONS (20 POINTS TOTAL)

For each question, choose the most appropriate entry. Each question is worth 2 points.

1. Which one of the following statements is most appropriate for experience effects? (d)
   a. They refer to the relation between the unit cost and the scale of production.
   b. The unit cost of production falls with production scale.
   c. Firms moving down the experience curve quickly in an industry have competitive advantage over firms in other industry that move slowly along the curve.
   d. For the effect to have any strategic significance, the effect has to apply to individual firms or products.
   e. None of the above

2. Which one of the following statements is most appropriate for industry analysis? (d)
   a. For a quick analysis, one may compare the profitability of the most profitable firms in each industry; an industry with a more profitable firm is more attractive than the one with a less profitable firm.
   b. Competition always drives down profitability.
   c. If no entry occurs in an industry, one may assume that the industry is unattractive.
   d. Other factors such as international trade can also affect industry attractiveness.
   e. None of the above.

3. Which one of the following cannot be an example of endogenous entry barriers? (c)
   a. Texas Instrument patents non-core technologies.
   b. Alcoa builds a plant with a capacity more than sufficient to cover the entire demand.
   c. DeBeers pre-empts a diamond mine.
   d. Anheuser-Busch introduces five new beers in the market.
   e. None of the above.

4. Which one of the following cannot be a rationale for vertical integration? (a)
   a. To effectively cope with uncertain demand
   b. To mitigate supplier power
   c. To improve quality control or coordination
   d. To avoid transaction cost associated with market
   e. None of the above

5. Which one of the following factors does not affect the size of PIE? (a)
   a. Degree of competition
   b. Market growth
   c. State of technology
   d. Government regulation
   e. None of the above

6. Which one of the following is the most appropriate reason for diversification? (c)

a. When the core business runs out of growth potential, a diversification into a new market creates a new growth opportunity.
b. Acquiring a profitable business provides a cash flow that can reinforce the core business.
c. Synergy can be achieved through combining two businesses that share certain activities.
d. Diversifying into multiple businesses effectively increases barriers to entry because a potential entrant needs to enter all of those markets in order to compete with incumbents.
e. None of the above.

7. Which one of the following cannot be a rationale for global integration in international expansion strategy? (b)

a. Importance of economies of scale as a competitive advantage
b. Heterogeneous tastes across locations
c. Minimum efficient scale relative to the size of local market
d. Demand for services from multinationals
e. None of the above

8. Which one of the following statements is most appropriate for the role of size in strategy? (d)

a. A greater size mitigates competition.
b. A greater size always brings scale economies.
c. Market size dictates the optimal number of firms in the industry.
d. Growth can be costly to a firm.
e. None of the above.

9. Which one of the following matches between the requirement of imitation and the corresponding isolating mechanism is not appropriate? (a)

a. Resource acquisition – Exploit all available investment opportunities
b. Identification – Obscure superior performance
c. Diagnosis – Rely on multiple sources of competitive advantage to create causal ambiguity
d. Incentives for imitation – Signal aggressive intentions to imitators
e. None of the above.

10. Which one of the following is most appropriate for disruptive technologies? (d)

a. They are always initiated by entrants.
b. They tend to outperform established technologies from the early stage.
c. They target the mainstream customer needs since adoption is critical for success.
d. They may coexist with existing technologies for an extended period of time.
e. None of the above.

PART II: TRUE/FALSE QUESTIONS (24 POINTS TOTAL)
For each of the following statements, indicate whether the statement is TRUE or FLASE, and explain your answer. Each question is worth 4 points. An answer without supporting explanations will receive a zero credit (even if it is correct).

1. When industry incumbents increase their expenditures on advertising, the industry always becomes less attractive. (TRUE, **FALSE**)

> Advertising expenditure certainly increases incumbents' cost. However, if that allows firms to compete on dimensions other than price (helping avoid price war among them), it may actually improves industry attractiveness.

2. Having a firm in the upstream of the value chain that commands a high willingness-to-pay from consumers is good for the firms in the downstream because it increases the demand for, and hence the price of, the downstream product. (TRUE, **FALSE**)

> The presence of high WTP player in the upstream certainly increases demand for the downstream product. However, that may not necessarily be good for the downstream players because it increases the bargaining power of the upstream player, who may appropriate all of the benefit from higher demand.

3. Securing more options for future strategic actions is always beneficial. (TRUE, **FALSE**)

> In general, having more options is good. However, commitments that reduce options/flexibility can also be beneficial, especially in the presence of entry threat.

4. Firms located on the cost-quality frontier for an industry will be profitable. (TRUE, **FALSE**)

> Firms on the frontier are efficient, but that does not guarantee that they will be profitable.

5. Limit pricing increases the incumbent's profitability by deterring potential entries. (TRUE, **FALSE**)

> Limit pricing effectively deters potential entries but only at the cost of the incumbent firm's profitability because it may not be able to set the price at the profit maximizing level.

6. Firms pursuing international diversification should minimize intervention by delegating the authority to their regional offices to respond more effectively to local needs. (TRUE, **FALSE**)

> Organizational effectiveness of global firms depends on a balance between the benefits from global efficiency and those from local responsiveness. Delegation to regional offices increases benefits from local responsiveness but may decrease global efficiency.

PART III: PROBLEM SOLVING (27 POINTS TOTAL)

Amazon's Kindle DX and Apple's iPad present an interesting contrast. Amazon offers a free access to WiFi and 3G network while iPad users have to purchase a $15 per-month connection (250MB data usage included) for WiFi+3G services. To read e-books, Kindle users pay $10 per book while iPad users pay $14 per book. Kindle's battery lasts a week per charge while iPad lasts only 10 hours. It costs 10 cents to charge each battery. Kindle sells at $489 and iPad with a 3G capability is slated for a price of $629 (16GB memory). There are two types of consumers in the market: Read'emall, who reads 10 books per month and Havefunista, who reads 5 books per month. Each e-book has an average of 10MB in size. Both types of consumers always take a two-week long annual vacation, during which they find no time for reading books.

1. (10 points) Using the information above, fill in the blanks below. Assume that the consumers use the device for <u>two years</u>.

	Read'emall		**Havefunista**	
	Kindle	iPad	Kindle	iPad
WiFi+3G (a)	**$0**	**$360**	**$0**	**$360**
Books (b)	**$2,400**	**$3,360**	**$1,200**	**$1,680**
Electricity (c)	**$10**	**$168**	**$10**	**$168**
Total usage cost (d=a+b+c)	**$2,410**	**$3,888**	**$1,210**	**$2,208**
Device (e)	$489	$629	$489	$629
Total cost (=d+e)	**$2,899**	**$4,517**	**$1,699**	**$2,837**

WiFi+3G: $15x24mo = $360 (only iPad users have to pay)
Books (Kindle): $10x10x24mo = $2,400 (Read'emall); $10x5x24mo = $1,200 (Havefunista)
Books (iPad): $14x10x24mo = $3,360 (Read'emall); $14x5x24mo = $1,680 (Havefunista)
Given the size of book, the monthly data usage limit is binding to neither of consumer types.
Electricity: $0.1x50wkx2 = $10 (Kindle); $0.1x50wkx(168hrs/wk)/10hrsx2 = $168 (iPad)

2. (8 points) Now suppose that consumers only care about the cost of device and have the following structure of willingness-to-pay for each device.

WTP for device	Kindle	iPad
Read'emall	$640	$512
Havefunista	$490	$732

Given WTPs and suggested device prices, compute the consumer surplus (CS) of each consumer type for each device. [Hint: CS = WTP – Price]

CS from device	Kindle	iPad
Read'emall	**$151**	**-$117**
Havefunista	**$1**	**$103**

Subtract the price of device (Q1) from the WTP given above.

3. (4 points) What is the maximum price for iPad that ensures winning over the Read'emall (i.e., make them buy iPad instead of Kindle)? (**$360** or **$360.99**)

Have to give a bit ($1 or $0.01) more CS to Read'emall to make them switch to iPad (see the updated CS table below).

CS from device	Kindle	iPad
Read'emall	**$151**	**$152**
Havefunista	**$1**	**$372**

4. (5 points) Suppose that Apple lowered iPad price to $429, what is the maximum price for Kindle that ensures winning over the Havefunista (i.e., make them buy Kindle instead of iPad)? (**$186** or **$186.99**)

At $429 for iPad, Havefunista gets a CS of $303. Thus, to win them over, one should give a bit ($1 or $0.01) more CS to Havefunista (to $304), which implies $186 for Kindle. The table below shows the consumer surplus with iPad = $429 and Kindle = $186.

CS from device	Kindle	iPad
Read'emall	**$454**	**$83**
Havefunista	**$304**	**$303**

PART IV: MINI CASE (27 POINTS TOTAL)
Read the following case carefully and answer the questions that follow.

NOKIA AND THE SMARTPHONE INDUSTRY

Nokia Fires Back at Google with Free GPS on 10 Phones[1]

Nokia began giving away professional GPS navigation software on 10 of its smartphones on Thursday, matching a competitive move by Google. The move deals a blow to the leaders in the market for specialized navigation devices, Garmin and TomTom.

GPS mapping software has been one of the most popular applications for mobile phones. Nokia's decision to turn it into a giveaway may complicate its own efforts to generate revenue from mobile services and to recoup the $8.1 billion it spent in October 2007 to buy NavTeq, a maker of digital mapping data in Chicago.

Nokia, the global leader in cellphone handsets, said it had made available through its Web site a new, free version of its Ovi Maps software which includes turn-by-turn instructions for 74 countries, with vocal prompts in 46 languages, and maps for an additional 106 countries.

"By adding cameras at no extra cost to our phones, we quickly became the biggest camera manufacturer in the world," said Anssi Vanjoki, a Nokia executive vice president. "The aim of the new Ovi Maps is to enable us to do the same for navigation."

Nokia, the mobile phone maker based in Finland, called its move "game-changing," but analysts were skeptical it would stem the slide in Nokia's share of the top-end market.

One analyst described the decision by Nokia to give away professional GPS navigation software to increase sales of its flagging smartphone line and as a defensive response to Google, which last year became the first to give away its own mapping software on phones using its Android operating system.

"This is an incremental step forward for Nokia to help them compete with Google," said Neil Mawston, an analyst in London with Strategy Analytics. "This also fits with the recent trend where Google piles into a market, gives away a key application for free, and forces the competition to respond."

Nokia's stock was little changed after the announcement, but shares of TomTom, the Dutch maker of auto navigation equipment, plunged more than 9 percent in Amsterdam.

Through last September, Nokia's share of the smartphone market — handsets with advanced computing capability — slipped to 38 percent, from 53 percent two years earlier.

Apple's share in the meantime has grown from zero to 17 percent through September, with Research In Motion, the Canadian company that makes the BlackBerry, holding steady at 20 percent, according to Strategy Analytics.

[1] *New York Times*, January 22, 2010. The article was slightly modified to fit the purpose of exam.

Nokia is expected to introduce Symbian 4, its long-awaited response to Apple, in the second half of the year. Symbian 4 is the latest version of its operating software, which aims to provide touch-screen speeds and manipulation on a level with the iPhone.

In December 2008, Google announced that it would give away its Android operating system at no cost to handset makers.

The move forced Nokia, which had been charging other handset makers about $5 a unit to install its Symbian operating system, to match Google's offer and give away Symbian, Mr. Mawston said.

New Ovi Maps with Free Navigation Races Past 1 Million Downloads in a Week[2]

Nokia has today announced that since the 21 January 2010 launch of the new version of Ovi Maps with free walk and drive navigation, there have been over 1.4 million downloads. The one million mark was reached just one week after the launch.

"We're averaging a download a second, 24 hours a day," said Anssi Vanjoki, Executive Vice President, Nokia. "When we announced free walk & drive navigation we knew it would be a game-changer. The number of people now using their Nokia for navigation, and as a result looking for more location-aware software, is growing faster than even we predicted."

The success of the new version Ovi Maps is a key part of Nokia's strategy to lead the market in mobile maps, navigation and location-based services. By leveraging its investment in NAVTEQ, Nokia has been able to remove the costs associated with navigation for drivers and pedestrians and is quickly activating a massive user base to which it can offer new location features, content and services.

"This is great news for our 3rd party application developers. Within a matter of days there is an installed base of more than 1 million active users all potentially hungry for new and innovative location-aware apps," continued Anssi Vanjoki. "For the operators too there is a growing opportunity to sell more data-plans and a complete navigation package to existing and new customers."

From next month, all new Nokia GPS-enabled smartphones will include the new version of Ovi Maps, pre-loaded with local country map data, with high-end walk and drive navigation and access to Lonely Planet and Michelin travel guides at no extra cost.

QUESTIONS (please number your answers):

*** Here, I only provide a sketch of the main points. Students may have additional insights or even competing opinions. What matters primarily is how well they are logically argued and presented.**

[2] *Wall Street Journal*, February 3, 2010. The article was modified to fit the purpose of exam.

1. (9 points) Perform an analysis of the global smartphone (device) industry. Is this an attractive industry? What, if any, is the most critical force(s) that makes this industry particularly more (less) attractive? [Hint: you may want to use the Five (Six) Forces framework.]

Supplier power: MEDIUM to HIGH. These are parts/components makers and operating system (OS) suppliers. Parts makers have very little power since they are pretty much commodities. However, OS suppliers are relatively concentrated (oligopolistic structure) and exercise strong bargaining power as OS is a critical component of smartphones. Some OS suppliers (Nokia, Apple and Google) forward integrated, making them even more powerful. Competition between OS suppliers mitigates their power to some extent.

Buyer power: MEDIUM. These are the consumers of handsets. General consumers exercise strong power as they tend to compare between models intensely, can switch (have choices before getting locked into contracts), and to some extent price-sensitive. In contrast, enterprise consumers tend to have high switching costs (due to system sync issue etc), which mitigate their power.

Rivalry: MEDIUM to HIGH. Many players compete in the industry (Nokia, Apple, Google, RIM, Palm, HTC, Motorola, Samsung, LG, Sony/Ericsson, and many smaller players). They do not compete on price per se, but do compete to put their handsets on the major wireless carriers.

Threat of entry: MEDIUM. Parts/components are readily available though relationships with these suppliers may be important. OS is becoming an open source (in fact OS suppliers try to make their OS available as widely as possible). However, key technologies are patented. Brand equity, high fixed costs, and cumulative R&D experience play a role, mitigating entry threats (may enter locally but hard to enter and compete globally).

Threat of Substitutes: LOW to MEDIUM. Many alternative media exist for a few of the functions (cell phones, laptops, PDA, landline phones, VoIP, etc.) but are not very effective.

Complements: HIGH. Wireless networks (data and voice), third-party applications and internet. Application developers do not exercise power (no killer-app exists yet) nor does internet (who owns internet?). Wireless carriers, however, exercise significant bargaining power as they are highly concentrated and essentially determine the effectiveness of the smartphone (they serve as the only outlet for mobile functionality; wavebands are rationed and protected by the government).These wireless carriers essentially control the services and devices. Some countervailing effects are that there is fierce competition among them and these wireless carriers need superior handsets to effectively compete. [You may alternatively put wireless networks into the Buyer category, in which case Buyer power will become HIGH and Complements will be LOW (in terms of bargaining power).]

Overall, this is an UNATTRACTIVE industry, particularly due to high supplier (complement) power and high rivalry.

2. (9 points) Identify and evaluate Nokia's strategy in this industry. [Hint: you may want to use the GSCAL framework.]

Goal: To maintain the leadership in the global smartphone market.

Scope: Customer – general consumers as well as enterprises
Product – OS, device (both low and high end products), and key applications such as maps (through Ovi Store)
Geography – global market (in particular, Europe, Asia and Middle East)

Competitive Advantage: strong brand equity (especially in Europe and Asia) that comes from being the first mover in the market and customer orientation; large customer base from being the biggest cell phone provider, which lowers production cost and also potentially attracts the experienced users of Nokia's standard cell phones; vertically integrates OS (Symbian), a key driver of WTP for smartphone; long-term relationship with wireless carriers and component suppliers; cumulative R&D experience/capabilities

Logic: Internal Consistency – makes sense to maintain a global presence that leverages strong brand equity; it also help lower production costs by spreading the fixed cost over larger volume; already #1 in mobile device market, so it is logical to leverage its dominance in standard cell phones in order to maintaining leadership in smartphone segment
External Consistency – broad customer base combined with strong brand equity and R&D capabilities increases barriers to entry; long-term relationship with wireless carriers and suppliers help effectively compete with rising rivals as well as mitigate their power; large customer base helps keep costs lower than rivals of smaller size; consumer experience in Nokia's standard cell phones helps ease their adoption of (transition into) its smartphones; backward integration of OS helps mitigate supplier power

3. (9 points) Given your analysis of the industry and Nokia's strategy, do you think Nokia's strategic move (i.e., giving away Ovi maps) is a good course of action? In particular, how does (or not) the strategic move help address the critical forces Nokia faces? Justify your answer.

Answers can vary depending on the student's analysis and evaluation of the smartphone device industry and Nokia's strategy. Again, what matters here is how the student persuasively builds on these analyses in arguing for or against Nokia's strategic move, and maintains consistency in the discussion. Nevertheless, the focus of discussion should be on how giving away Ovi Maps can help address the key challenges that Nokia faces in this industry. Some points to consider: the main challenge comes from rivalry. With the entries by Apple and more recently by Google into smartphone (both OS and device), the degree and the mode of competition has completely changed. These new and potent rivals are not traditional mobile industry players (hence compete based on different capabilities) and they rely on very different business models (Google in particular). In fact, as stated in the case, this is not the first time that Nokia was "forced" to give away its key revenue driver.

The loss of revenue from making Symbian free amounts to over $240M per year (annualized revenue based on Q3 2009 market share). Giving away Ovi Maps, which Nokia spent over $8B for acquisition, makes it difficult to recoup even part of that investment. This kind of attack from new entrants significantly undermines the source of Nokia's revenue in this market. Google has no problem giving away its key applications because their revenues mostly come from advertisers; they don't even need to make money on smartphones or OS. For Nokia, it's a different story. It is less likely that Ovi Maps will become a "killer app" that kicks off the demand for Nokia's smartphone (for smartphone users, maps are readily available from alternative services – note the 1 million downloads in a week mostly came from existing customers). Becoming a number one navigation manufacturer isn't going to reinforce their core unless they really want to diversify into navigation market (which is not their intention). Moreover, Nokia has been late in developing the upgrades of its OS when the role of OS in affecting the WTP and hence the choice of buyers is becoming ever more critical. The upgraded version of Symbian is expected to provide functionality that is at best comparable to that of iPhone which has been around for three years now. There may be other concerns but, all told, Nokia's recent move regarding Ovi Maps is an inevitable, albeit dramatic, choice that is less likely to help them successfully address the critical challenges they face in the smartphone industry.