Midterm Examination

Economics 139A

May 1, 2008
Version A

Abstract

This examination is a **closed-book** examination. You should not need any tools beyond a pencil or pen to write the answers. Calculators, cellphones, and other devices with memory are prohibited. When a problem asks you *to compute*, or *to show how to compute*, determine the appropriate formula, and substitute the numerical values from the problem into the formula.

When a question seems to ask for a yes/no answer, *most credit* depends on the explanation for your choice. For example, when the question asks, "Is this market elastic?," a satisfactory answer will look like, "Yes, because the market's elasticity is less than the critical value of -1." Unless asked explicitly, you don't need to explain what an "elasticity" is for this kind of question.

Please write your answers directly on this examination paper. Don't forget to write your name and student number on this page, *and your student number on each sheet* (booklets occasionally do come apart in transport). If you need extra space for answers, feel free to use the back of the last page. Clearly mark answers that have been continued on a different page.

Do not open this examination booklet until instructed to do so.

1. Describe one scenario in which a person who does *not* participate in e-commerce might suffer "**identity theft**" on the Internet. Explain why this kind of scenario means that making individuals responsible for *protecting their own credentials* is unlikely to reduce the incidence of "identity theft."

   A person who does not participate in e-commerce personally is still likely to use credit cards and browse the web, perhaps becoming a member of some online community, and giving them various information about themselves. That information in turn is likely to become part of a database which may intentionally or inadvertantly be accessible to at least officers of the organization via the Internet. If it is accessible to someone, it may possibly "leak" out, resulting in "identity theft."

   3 points for an example of an online database of personal information not derived from B2C e-commerce, 2 points for "once on the network, anything can leak".

   In the case of a credit card, the credit card holder does not know about and cannot prevent the card issuer or merchants from creating computerized databases. Even though the card holder has incentive to prevent identity theft, they have no power. On the other hand, if the database maintainers are not liable, they have no incentive even though they have the power to improve security.

   3 points for mentioning incentive and describing it correctly, 2 points for mentioning power (or lack of it).

2. Distinguish between **cost of service pricing** and **value of service pricing**. Briefly describe one scenario in which in which **value of service pricing** is more appropriate. **Explain why.** You may refer to a particular firm as an illustration, but "it's like ABC, Inc." is insufficient.

   In cost of service pricing, the emphasis is on the market price covering cost plus a target return, based on dividing overhead across a standard volume. In value of service pricing, the emphasis is on finding ways to get each customer to pay as much as possible, usually involving price discrimination.

   2 points for definition of each term, 1 point for mentioning price discrimination in connection with value of service pricing.

   *Value of service pricing is appropriate when you can identify classes of customers who will pay more for the same good than other customers would. For example, Econ 139A students are willing to pay almost nothing to get up to the minute stock price quotes for their final report topics, while an active investor might be willing to pay a fair amount of money for the same information. This can be achieved by giving out information with some delay on a free site (such as Yahoo! Financial), but charging for a no-delay feed (*e.g.*, Bloomberg).*

   3 points for a concrete example of price discrimination, 2 points if it's e-commerce-related.

3. **Amazon.com** is often cited as a successful first mover. Do you believe Amazon possesses a **lasting first-mover advantage**, or is it simply a well-managed early entrant that has come up with a string of *sustaining innovations*? Explain. Give

an example of **an important Amazon advantage** in the market, and explain why it supports your belief (*i.e.*, show that it is a *genuine first-mover advantage*, or alternatively that it is a *sustaining innovation* that rivals can imitate well enough to compete in the long run).

Either position could be maintained. A lasting first-mover advantage might derive from Amazon's network externalities from "collaborative filtering": the more customers, the better the recommendations, and the more the customers will appreciate the reviews. These are copyright, so other booksellers can't benefit from them (not really learning by doing, but a similar "intangible asset"). On the other hand, there's no reason why the same customer can't write reviews for several vendors, so this advantage might dissipate over time, too.

4 points for general arguments that there are few guaranteed first-mover advantages (learning by doing, network externalities, switching costs), or a claim that X is Amazon's biggest first-mover advantage and it's not very big. 4 points for a plausible biggest advantage (learning-by-doing in fulfillment, learning-by-doing in online store design, accumulated reviews and they-also-purchased data, *etc.*. (This can qualify for points twice under the "X is Amazon's best, and not good enough" argument, and for the explicit "Amazon's most important advantage.") 2 points for why it supports the "has first-mover advantage" *vs.* "doesn't have." Obviously this is all tied together, be generous.

4. Define **competitive advertising**. **Explain briefly** how it can be used to advantage by an e-retailer. **Describe briefly** one example of *competitive advertising* in e-retailing.

   Competitive advertising advocates your brand against a competitive brand. It is most important in markets where products have only minor differences, or where it's easy for similar products to achieve efficient scale, so customers have a hard time identifying brands. A typical example is Yahoo!'s radio commercial comparing their search plus extra information portal to Google's pure search.

   4 points for definition, 3 points for kinds of product or other description of benefit to firm, 3 points for specific example.

5. Define **informational advertising**. **Explain briefly** how it can be used to advantage by an e-retailer. **Describe briefly** one example of *informational advertising* in e-retailing.

   Informational advertising makes the consumer aware of the existence or a specific feature of your product. It is generally most useful when products are highly differentiated, and consumers are not going to be able to "guess" that it exists or what its important features are. An example might be a billboard saying "order pizza online: www.e-pizza.com."

   4 points for definition, 3 points for kinds of product or other description of benefit to firm, 3 points for specific example.

6. The `shop.org` "e-Tail" survey results showed that a larger proportion of (originally) **catalog-based companies had positive margins** on their online opera-

tions, and on average **had higher margins** on their *online* operations, than either *retail-store-based companies* or *purely web-based companies*. Is this a **surprising** outcome, or not? **Explain** why you find it so.

We should not be surprised that catalog-based companies did better in their online operations than the online departments of store-based firms or of pure virtual retailers. Two crucial aspects of non-store-based operations are the quality of the catalog descriptions of each item (whether paper or electronic) and the speed and reliability of delivery. The catalog-based firms have decades of experience in both of these areas, which has to count a a significant advantage over the retail-store-based firms and the virtual firms. Only if the pure web operations could come up with a massively effective way to attract visitors and convert them into orders that doesn't work for mail- or telephone-order would we expect web-based companies to excel.

2 points for guessing right, 3 points each for the presentation and fulfillment advantages of catalog firms, and 2 points for the possibility of a web-based firms having an advantage.

5 extra credit points if somebody comes up with a plausible reason why store-based firms should win, 'cause I don't believe there is one!

7. Under what economic circumstances might an investor consider that a **pro forma statement of earnings** best reflects the future viability of a firm? In your answer, **briefly explain** what a *pro forma statement of earnings* is.

   A pro forma statement of earnings *is one in which the company itself judges whether a given revenue or expense should be considered "fundamental" to its ongoing profitability in the future, and includes it in the calculation only if it is a fundamental. Because the company knows its business better than anyone else, its management and accountants are in the best position to assess whether an item is a one-off that affects the bottom line today but will not recur in the future, or a fundamental cost of doing business in the industry. This may be especially appropriate for* young *firms in* young *industries, where standards of comparison are not yet evolved, or for a firm which claims a* radical *or* disruptive *innovation in its industry.*

   2 points for each part ("company judges" and "include if 'fundamental' ") of the definition of *pro forma*, 3 points for "company is expert on its business," and 3 points for young and/or one-off innovative firms.

8. Under what economic circumstances might an investor consider that a **statement of earnings according to GAAP** best reflects the future viability of a firm? In your answer, **briefly explain** what *GAAP* is.

   GAAP stands for "generally accepted accounting principles" which are actually a formal, written standard of the Financial Accounting Standards Board (FASB). Because these standards are set out in the same terms for all businesses by an independent standards body whose mission is to achieve comparability across different businesses, we would expect that earnings computed according to GAAP principles *would be most comparable. This would be suited to a relatively conservative, diversified investor, or for evaluating a mature firm. Finally, because the FASB is independent, GAAP earnings are less likely to suffer from deliberate misstatements of a desperate management or wishful thinking on the part of an inexperienced one.*

2 points for each part ("generally accepted accounting principles" and "independent standards body'") of the definition of *GAAP*, 3 points for "designed for comparability," and 3 points for any two of "diversified investor," "mature firm," and "prevents misstatements."

9. What **characteristics** make the construction industry a potentially profitable target for *web-based B2B efficiency enhancement*? How can **firms** in this industry *benefit from e-commerce interaction*? Do you think **consumers** will *capture some of those benefits*? Explain your reasoning for each answer.

   *The construction industry is a profitable target for efficiency enhancements because (1) large projects are complex requiring coordination of many subcontractors, and the web is idea for distributing revisions of documents like blueprints, (2) historically it's relatively low-tech with lots of room for improvement, (3) mail and fax are less speedy and reliable because of the paper handling aspect, and even one subcontractor who isn't clued in can cause substantial delays. The firms benefit from (1) centralized communication (*i.e.*, there's one obvious place to get updates), (2) instant communication of updates to website, (3) schedule management is online and efficiently communicated, (4) more reliable communication means less need for middle and upper management to travel physically to the site, allowing increases in scale (larger projects, decreasing travel costs) and scope (more projects at once). In summary, the web-based information exchange assembles, manages, and coordinates the flow of information more effectively. Customers may feel more confidence in their contractors if they can check out plans and progress online. To the extent that there is competition, cost savings will be passed on to them.*

   4 points for the list of existing inefficiencies of construction management (2 points if they get at least one bang-on, and 1 more point for each additional item if it's "close"), 4 points for the list of descriptions of benefits, and one point each for the potential customer benefits.

10. Define **digital cash**. Explain what aspect of "pure" digital cash is lacking from the *digital cash* provided by PayPal and similar electronic payment systems.

    Digital cash is a "token" of value which can be used for online payment, and circulates independently of deposit accounts in banks or physical cash. Even though positive balances in your PayPal account can circulate without ever drawing on real cash or a bank account by being passed from one PayPal account to another, "PayPal dollars" are not anonymous. PayPal always knows who is paying whom.

    3 points for online payment, 3 points for independent of deposit accounts and cash, 2 points for "token", and 2 points for "anonymity."

11. Explain the concept of a physical **nexus** in the law, which determines when a state may levy *sales tax* on an e-commerce transaction. Is this rule **more favorable** to

"clicks-only" e-retailers, or to "bricks & clicks" e-retailers? **Briefly explain** your answer.

A nexus *corresponds to the physical presence, normally in the form of a retail store, of the vendor in the same state as the customer. In that case, mail-order or e-commerce is assumed to be a direct substitute for a store visit, and thus it is subject to tax in the state where the customer resides. To the extent that a "bricks & clicks" e-retailer establishes stores in a high-sales-tax state it is likely to be liable for substantial tax payments, so this rule works to the advantage of "clicks-only" companies.*

4 points for definition of nexus, 3 points for "direct substitute for store visit," and 3 points for advantate to clicks-only and why.

12. What is the **populist myth** about the Internet? Briefly explain how it **captures an important truth** about the Internet, but when taken to extremes **becomes a myth**.

    The populist myth about the Internet is that it is always empowering to consumers and individuals in general. It is certainly true that everybody can benefit to some degree from the useful information and digital products distributed over the Internet, and that digitization creates a variety of novel benefits in and of itself. However, business firms and some government are always working to reduce individual freedom to use or even access certain information, and these efforts often succeed. Thus there is no guarantee that individuals will not experience more constraint than they would even without the Internet.

    3 points for "always empowering," 3 points for "useful information, digital products, and novel benefits" (2 of 3 will do), 2 points for firms and governments acting to restrict, and 2 points for concluding "no guarantees."

13. What is the **monopolist myth** about the Internet? Briefly explain how it **captures an important truth** about the Internet, but when taken to extremes **becomes a myth**.

    The monopolist myth about the Internet is that it always favors large business with advanced technological skills, and leads to large economies of scale or natural monopoly because of the "fixed cost plus low, constant marginal cost" nature of many digital products. It is true that many digital products fit this model, and other aspects such as network externalities can also encourage monopolies. However, the ease of copying on the Internet and the speed with which news of "wrong" behavior travels puts serious constraints on would-be monopolists. Thus even very powerful firms like Microsoft may find it hard to capture "all" of the consumer's surplus.

    3 points for "natural monopoly," 3 points for the cost structure, 2 points for "speed of light" *vs.* the dark side, and two points for concluding that much surplus remains with individuals.

For extra credit, you may choose *one* of the following *two* questions (each occupies a full page) and answer it.

1. Reflect on your experience with *distance learning* technology and other Internet-based aspects of the educational environment at UC Santa Cruz. Do you think the University should focus most on

   - "bricks," *i.e.*, enhancing the conventional delivery of educational service on campus to its students, **or**
   - "clicks," *i.e.*, taking advantage of the technology to deliver content in new forms and streamline administrative aspects of the educational programs, **or**
   - "bricks & clicks," *i.e.*, better integrate its conventional educational programs with its existing network infrastructure.

   Any answer is "correct." Choose one, and *based on what you have learned about the theory and practice of e-commerce* **give the most important reason** why you believe that is the most productive way to improve UC Santa Cruz. Then **give one concrete experience** you have had at UCSC (no course numbers or faculty names, please!) illustrating your argument.

2. What is "the" **digital divide**? (Define it.) Do you believe that there is an aspect of "digital divide" that has important consequences for the members of UC Santa Cruz community? If so, explain what it is and why you believe it is important to the community. If not, explain why it has not developed (in terms of factors like "university policy," "socioeconomic level of the community," *etc.*). What policy would you advocate to address the problem of the *digital divide*?