

The Wharton School
UNIVERSITY OF PENNSYLVANIA
Department of Operations and Information Management
Syllabus for OIDD 613

Information and Business Transformation

AKA

Online Innovation: New Patterns of Power and Profit

Professor Eric K. Clemons

clemons@wharton.upenn.edu

<https://oid.wharton.upenn.edu/profile/26/>

EricKClemons on Skype

JMHH 572 / / Ext. 8-7747

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Class Sessions: M, W 10:30-12 and 12-1:30

Office Hours: **M, W** 2-3:30 | **T** 11-11:45 and 1:30-3 | and by appointment

Teaching Assistants

Kofo Agbaje kagbaje@wharton.upenn.edu

Patrick Martin patmart@wharton.upenn.edu

OIDD 613 is intended as a complement to the algorithmic aspects of MBA education. It focuses on developing model-based intuition for the development of strategy. It seeks to promote understanding the most innovative uses of information and information-based strategy. Students will achieve a personal competitive advantage, *managerial judgment in the age of machines who think*. Ideally, this will protect your career by making you *automation-proof*.

OIDD 613 focuses on the impact of *information on management*, rather than the *management of information* or the *management of information technology*. The course prepares students to master information as a strategic asset, and combines theory, models, and case studies drawn from the instructor's professional experience. It is not a course on big data analytics or on the management of data, but rather is a course on diagnosing and solving ambiguous and poorly structured strategic problems posed by changes in information availability. Consequently, the course is targeted at students interested in a career in strategic consulting or marketing strategy, and at students who need a solid command of valuation of online business models in order to pursue a career in private equity.

Information has changed the operations, strategy, and structure of firms in all industries. Of course this is most visible in firms like Google and Facebook, with business operations that are entirely online and in support of activities that are largely online. But it is visible in a host of more traditional businesses, including those that historically had relied on massive investments in physical assets. These range from banking (*"What's in your wallet?"*) and retailing (*Using Alexa to order beer from Amazon with two-hour delivery*) to transportation (*Using Uber instead of a taxi*).

Interestingly, many spectacularly successful online business models are not as innovative as they initially appear, and many turn out to be simply reworking of an earlier model whose success has been proven and whose value is clear. Understanding the prior uses of information-based business models greatly facilitates understanding new opportunities and evaluating new companies.

- Sometimes a great new business may be created from a reuse of an existing model for information-based strategy. Capital One exploited a newly vulnerable market and found a way to attract its competitors most profitable customers. It transformed the credit card industry and other banks either adapted or were forced out of the credit card business. While Uber and Capital One initially appear as different from each other as two companies can be, Uber also exploited a newly vulnerable market and is crushing traditional taxi companies around the world.
- Sometimes a new business may represent the combination of two patterns observed previously. Google's business model is a combination of controlling a gateway (like the airlines' reservations systems from the 1980s) and a platform envelopment strategy (like AT&T in the 1930s and Microsoft in the 1990s).

This course will focus on problem diagnosis based on historical understanding of a small set of important business models. Few problems in business come fully labelled with their root cause or with their appropriate solution technique. Life is not *syllabusized* the way MBA education is, and life's problems are more ambiguous than any problem set. And yet there really is only a small set of business problems that one needs to recognize and needs to be able to solve. This course will therefore address one of the most critical skills a leader can possess, the ability to encounter an unfamiliar situation and rapidly transform it into one that the leader has solved before.

This course does not require any background or training in technology or computer science. It does assume familiarity with strategy and with marketing.

Course Objectives

At the conclusion of the course, students will have mastered the following:

- **Developing model-based intuition for dealing with strategic ambiguity.** Much of senior management is not about algorithmic decision-making, but on understanding the nature of strategic ambiguity and determining which forms of analysis are most appropriate. This is the principal focus of this course.
- **Transforming and reframing questions as the basis of problem solving:** Most strategic problems originally appear in ways that are difficult to recognize and difficult to understand. Transforming questions into a different format often makes these strategic problems tractable. Learning to solve difficult problems is a fundamental objective of this course.
- **Using the Power of Information:** Students will understand the opportunities to launch innovative online businesses and modify the information-based strategy of existing businesses.
- **Valuing Businesses in the Presence of Uncertainty:** Most innovative information-based businesses involve a significant level of uncertainty, for entrepreneurs, for early round capital and for investors. Students will understand the most powerful techniques for assessing and managing risk.

- **Using history to predict the future:** There is a small number of new models for information-based strategies, and these are deployed, often in combination, by most new businesses no matter how original they may appear. Mastering these new models is a powerful predictor for entrepreneurs, for early round capital and for investors.
- **Bounding uncertainty with scenario analysis:** Some changes really are so disruptive that historical data have little predictive power. Scenario analysis still permits bounding the set of possible alternative future outcomes, even if it cannot identify a single future outcome as inevitable.

Required Text

The primary text for the course is *New Patterns of Power and Profit: A Strategist's Guide to Competitive Advantage in the Age of Digital Transformation*. At the request of last year's students, the text has been shortened by 30%. Since the text will not be published until the end of the semester, students will have access (without charge) to pre-publication material posted online. A few additional readings will be provided, primarily from a text that contains supplemental chapters with more detail and more mathematics than present in *New Patterns of Power and Profit*. These readings are from *Oh, Yeah, Now I Get It: Learning to solve really complicated problems in business, in society, and in life*. For any students who want a more complete set of readings, the prior and longer draft of the text will be posted on Canvas as well.

Assignments and Grading

Based on consistent feedback over the past four years, we will no longer have graded written problem sets every week in this course. However, based on feedback from students, we will now have short written "check point" submissions required before most classes. These will be graded **NC** / **P** / **+**. These will be due before 12:30 AM the day of each class.

Grading will be based **40%** on class participation (*including 10%* based on short submissions) and **60%** on the final exam. The final exam will be administered during the normal MBA exam week. Not surprisingly, a high grade in class participation will require class attendance. More importantly, a high grade in participation will require active engagement in classroom discussions, high-quality responses to cold calls, and high-quality interactions when the student volunteers rather than waiting to be called.

There will be several in-class discussions of cases or of analytical problem sets during the semester. Classes where we will discuss mathematical analyses are highlighted in **RED** in the online course syllabus, both in the session-by-session course outline and at the top of each day's page in the syllabus. This is significant because we will be discussing the analyses in class, and students will need to work through the analyses before class to prepare for class discussions. Sessions where case discussions will not involve overheads, or where discussions will go well beyond the overheads, are highlighted in **BLUE**.

Since class participation is essential in this course it will be assessed four ways. (1) Students will be cold called during class. (2) Students with insights and strategic epiphanies can volunteer information. (3) A short half-page submission is required before 9 of the 12 sessions of the course. As noted, these will count for 10% of your grade.

These are highlighted in **YELLOW** in the syllabus. (4) Students who are uncomfortable speaking in class can submit the written answers to questions highlighted in **RED** to improve their class participation grades; obviously, written answers must be submitted before the start of the day's class discussion!

The final exam is highlighted in **GREEN**. Because of unfortunate incidents with students in the past, the MBA Program Office requires that students take the exam in person in the exam room, on the day it is officially administered. I am no longer permitted to make exceptions for any students, for any reasons.

OIDD 613 Online Innovation: New Patterns of Power and Profit Suggestions for Preparing for Class Discussion

In this course class discussion is not intended to repeat the readings, but to build on them. I want you to understand how new patterns in information-based strategy are developed and tested and how new mental models are developed; I don't just want you to memorize the patterns. I want you to understand how to apply these mental models in new ways, to solve unfamiliar problems, using history and analogies.

In some ways this class is a throwback to an earlier style of case discussion. My experience and the readings are just a starting point. Your personal experience is relevant, of course. So is almost anything you may have read that can help you interpret the case, based on historical precedents from previous courses, previous business experience, or readings from previous decades or even from previous centuries. Google has implemented a platform envelopment strategy by bundling so many capabilities into its Android devices, just as Microsoft did when it bundled so much functionality into Windows. Putin has decided to keep Russia and as much of the former Soviet Union together as he can, whether it wants to be kept together or not, just as Abe Lincoln kept the Union together whether it wanted to be kept together or not. This does not equate Google and Microsoft, any more than it equates Putin and Lincoln; it does suggest that history can provide insights and enable predictions about what might happen next, even when the parallels are not exact.

But how do you prepare for a class where discussions can rely on anything and everything?

- First and foremost, you can't build on the readings if you haven't done them. It really is essential to do the readings before each class.
- Next, look at the questions for the day. Every class has a list of discussion questions associated with it. These do *not* tell you what we are going to discuss that day. They *do* tell you what to think about in order to get ready for class discussion.
- Think about the examples in the reading. When have you seen patterns similar to the ones covered in the readings? When have you encountered problems similar to those in the readings? What did you do that was similar to the solutions suggested in the readings? What did you do differently?
- Finally, most importantly, do the short write-ups required for each class. It is ok to do them after discussion with classmates. They should only take a couple of minutes. They are intended to be short mental check-lists, not long written homework assignments. They are intended to start you thinking about what you read, and to get you ready for class discussions.

Unfamiliar situations are often stressful, and I want to create unfamiliar situations in the safe environment of the classroom, to prepare you for dealing with the stress of these unfamiliar situations when your responses really matter to your career and to your company. None of you will be familiar with all of the examples used; that's not an accident; that's an essential design feature of the course.

And remember, *everyone* will find some point in class in which they don't know the answer to a question. The key thing is to figure the answer out; it's not that you don't know, but that you don't know *yet*.

Course Outline and Readings¹

- Session 1 W 29-Aug **Introduction and Course Overview²**
Introduction to the changing role of information in business. Changing information endowment changes everything, from human behavior to corporate strategy. Discussion of grading and course mechanics.
Read: *New Patterns of Power* (Prolog / Chapter 0)
Due: Short Submission on Course Intent and the Future of Management and the MBA Degree
- Session — M 3-Sept **No Class / Labor Day**
- Session 2 W 5-Sept **Learning from the Experience of Others — The Power of Pattern Recognition**
Review of the science of business and the science of strategy formulation in the presence of discontinuous change, based on patterns observed over the past twenty years.
Read: *New Patterns of Power* (Chapter 1, Sections 1-3)
Due: Submit bios to website
- Session 3 M 10-Sept **Information Asymmetry: Signaling, Screening, Versioning, and the Market for Information Goods**
Introduction to individual types and individual willingness to pay. Introduction to information asymmetry. Introduction to versioning contracts to maximize producer surplus (the economists' fancy term for profits).
Read: *New Patterns of Power* (Chapter 2)
Due: Short Submission on Signaling and Screening
Note: This class is held on Rosh Hashanah. Class will be recorded. And students who miss class for the Jewish holiday can submit assignments until 6 AM Wednesday.
- Session 4 W 12-Sept **Dealing with Information Asymmetry — Screening Mechanisms in Newly Vulnerable Markets**
Gaining competitive advantage through systems for market micro-segmentation and differential pricing; attempting to sustain advantage. The launch of Capital One, and extensions into other industries.
Read: *New Patterns of Power* (Chapter 1 Section 4, Chapter 2 Review Section 3)
Discussion: Screening and Competitive Advantage
Due: Short Submission on Newly Vulnerable Markets

¹ All readings can be found at the course Canvas website, under the tab readings, at <https://canvas.upenn.edu/courses/1386765/files/folder/Readings>. Listings are alphabetical.

² Slides and notes for individual classes can be found at the course Canvas website, under the tabs Notes and Slides. Once again, listings are alphabetical. Not all class sessions will have notes posted.

Session 5 M 17-Sept **The Power of Framing and Reframing**

Problems can be made much easier by proper reframing. Conversely, problems can be made much more difficult, or even impossible to solve, by an incorrect framing.

Read: *New Patterns of Power* (Chapter 3)

Discussion: Examples of Reframing in Life and in Business

Due: Short Submission on Reframing

Session 6 W 19-Sept **The Power of Certainty — Resonance Marketing**

The role of increased information in the changing balance between cost-based strategies and value-based strategies, the changing advantage of incumbents, and the changing nature of competition.

Read: *New Patterns of Power* (Chapters 4 and 5)

Discussion: The Logic of Resonance Marketing

Due: Short Submission on Resonance Marketing

Note: This class is held on Yom Kippur. Class will be recorded. And students who miss class for the Jewish holiday can submit assignments until 6 AM Monday.

Session 7 M 24-Sept **Hustle at a Discontinuity and Platform Envelopment**

What do we know about platform extensions and resource-based competitive advantage? What does this tell us about Microsoft? What does this tell us about Google? What does this tell us about Amazon? What does it tell us about the competitive advantage of existing companies in a net-based economy?

Read: *New Patterns of Power* (Chapter 6)

Discussion: Platform envelopment

Due: Short Submission on Platform Envelopment

Session 8 W 26-Sept **Quantitative Analysis of Resonance Marketing Examples**

The ideas of resonance marketing can be used to quantify the impact of online content and community-generated reviews on new product launches.

Read: *Now I Get It*, (Unit 8: all Chapters plus Appendix 8.A2)

HW1: (Formerly Written Analysis) — Prepare for Discussion / Quantitative Analysis of Resonance Strategies

Session 9 M 1-Oct **Valuation of Information-Based Strategies**

In some ways information technology investments are similar to other large capital investments with long lead times and resulting uncertainty; in other ways they have unique problems all their own.

Read: *Now I Get It*, (Read Unit 11: Chapters 1 and 2. Read Chapters 4 through 6 if you are not familiar with statistical decision making and decision trees. Read Chapters 7 and 9.)

HW2: (Formerly Written Analysis) — Prepare for Discussion /Computational exercise on business valuation

Session 10 W 3-Oct **Learning to See Alternative Worlds — The Power of Scenario Analysis When Dealing with Strategic Uncertainty**
Planning under uncertainty and the use of scenario analysis; discarding your old mental models in preparation for developing a new world view. What is the future of Chinese consumer goods? What companies are positioned to succeed and which companies are not? Where are the opportunities for Western companies?
Read: *New Patterns of Power* (Chapter 10)
Analysis and Discussion — Using Scenarios
Due: Short Submission on Scenarios in China

Session 11 M 8-Oct **Third Party Payer Business Models, Online Gateways, and the Future of Competition — What do you need to know about information-based strategies in the future?**
Third Party Payer business models appear to be a special case of what are now commonly called two sided markets. Online gateways are emerging as one of the most powerful business models on the net. What is the source of their power? When are they dangerous to competition and to consumers? When might third party payer business models require new forms of regulation and why? What is the sharing economy? What are the externalities associated with Airbnb and Uber? When might regulation be appropriate?
Read: *New Patterns of Power* (Chapters 7-9, 11)
Analysis and Discussion — MP3PP Business Models, Business Opportunities, and Threats to Competition
Due: Short Submission on Fairness, Privacy and Anonymity, and Online Responsibility

Session 12 W 10-Oct **The View from the EU or Why is Competition Commissioner Margrethe Vestager so Excited Right Now?**
The EU's new privacy regulations (GDPR) would essentially invalidate the business models of Facebook and Google. A recent ruling against Google in the Foundem case sees antitrust violations in vertical integration. A more recent ruling against Google for its abuse of Android's power sees antitrust violations in platform envelopment. These seem to be innovative interpretations of existing European antimonopoly law. Why is the EU so active here? Why is the US so passive?
Read: *New Patterns of Power* (Chapters 12 and 13)
Analysis and Discussion — The ever-increasing power and influence of global mega-corporations and the future of world order
Due: Short Submission on The EU and Technology Mega-Corporations, Plus the Growing Influence of the Corporations
— F 12-Oct **Final Exam During Regularly Scheduled Exam Week
12:00 PM – 2 PM**

OIDD 613
Online Innovation and Information-Based Strategy
The Changing Role of Information in Business and Strategy

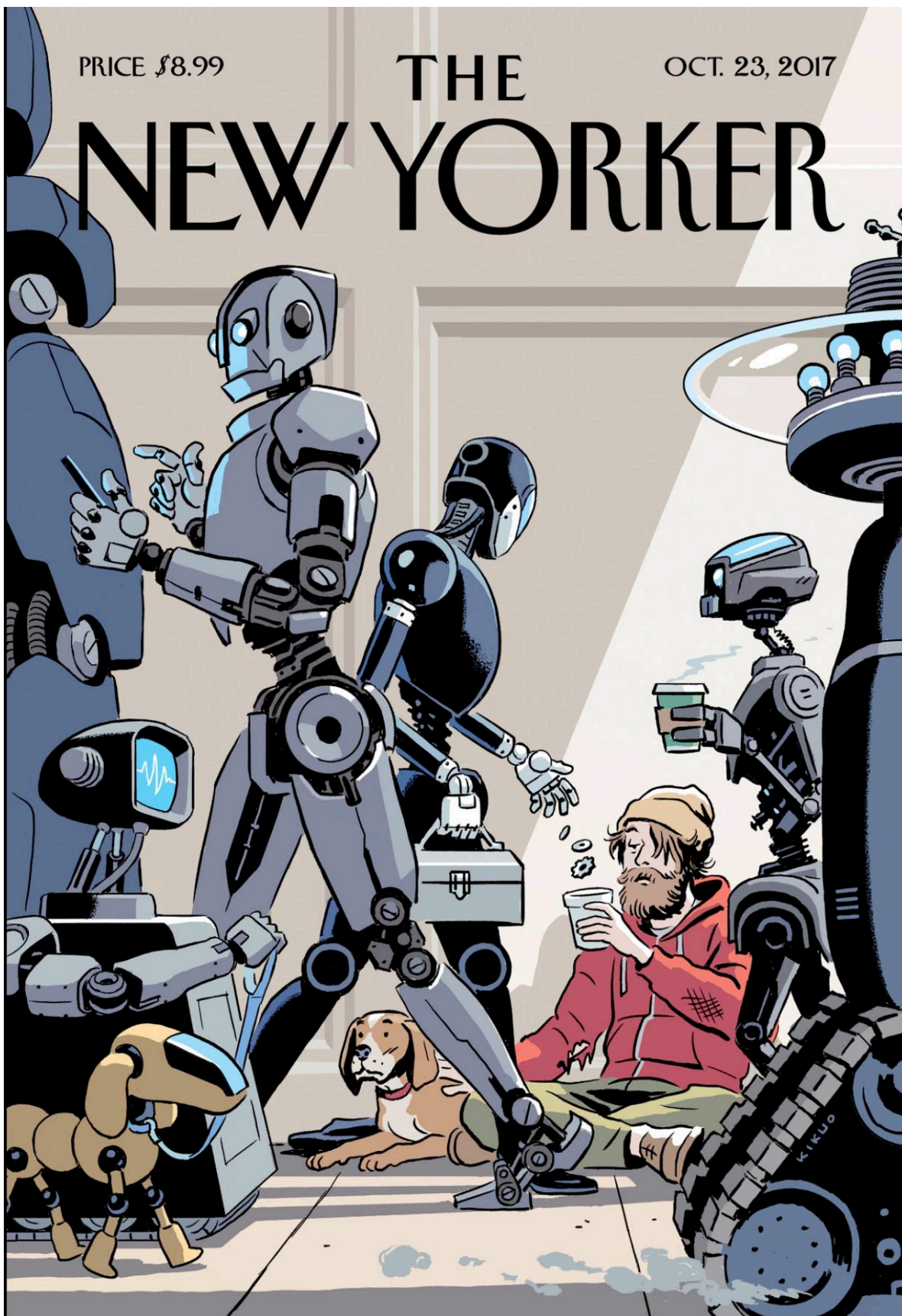
Session 1 — 29 August 2018

Questions for Class Discussion

1. Why do we have an MBA course on *information*? Why is this course about information and *not* information technology? Why is this course about *information-based strategy* rather than about information technology?
2. What is the role of uncertainty in creating a strategy? What is the role of hostile intent when creating a strategy? Do you actually *need* a strategy if neither uncertainty nor hostile intent is present?
3. Do big data and the emergence of real-time advanced analytics eliminate the need for strategy? Can you use machine learning, rapid adaption, and controlled testing to eliminate the need for advanced strategic planning?

Required Submission

Do big data and the emergence of real-time advanced analytics eliminate the need for executives' judgment and intuition? Do algorithms, formal operations management, and formal optimization eliminate the need for judgment and intuition? If strategic planning could be performed by algorithms, what is the value of an MBA? Comment on the picture on the next page.



OIDD 613
Online Innovation and Information-Based Strategy
Learning from the Experience of Others — The
Power of Pattern Recognition

Session 2 — 5 September 2018

Questions for Class Discussion

1. What makes a theory useful? Descriptive power? Predictive power? Falsifiability? What do we think about the theory that human behavior is leading to climate change?
2. How would we judge a theory that says Amazon did well because it branched out boldly, and J&J failed because it merely tried to sell what it had always sold but in a new online channel? What does this boldness theory of eCommerce success tell us to expect from very safe and traditional online grocery sales at Tesco or bold and innovative online sporting goods sales at Buy.com? Would you expect the success of online sales at Tesco and Ford to differ based on this theory, or do you not have enough information even to test the theory here?
3. What are the principal differences between strategic *uncertainty* or *ambiguity* and *strategic risk*? Why are the mechanisms for managing risk better understood than the mechanisms for managing uncertainty and ambiguity?
4. Do you believe that standard paradigms like conservation of energy in physical systems or finite element analysis in structural engineering have counterparts in management?
5. Can managers be taught a set of paradigms to permit rapid diagnosis of problems and rapid recognition of solutions? Are new paradigms really needed for management education as a result of changes in business driven by the internet?
6. What is the importance of *speed* in diagnosis and recognition? Is diagnosis really a critical skill for managers?

Required Submission

Please submit a word file containing a short biographical sketch, not a full resume, via Canvas. This will be very helpful to me in guiding class discussions. Please title your file **613F18_I_NAME.doc**, where **I** is your first initial, and **NAME** is your last name. Please provide the following information:

- Your expected major at Wharton
- Your experiences relevant to the topics of this course
- Your reasons for taking this course and what you hope to get out of it

OIDD 613
Online Innovation and Information-Based Strategy
Information Asymmetry: Signaling, Screening, Versioning,
and the Market for Information Goods

Session 3— 10 September 2018

Questions for Class Discussion

1. Why is it necessary to enjoy a monopoly position before a firm can attempt to set a single, profit-maximizing price? Why does a single profit-maximizing price result in a large consumer surplus and a large deadweight loss? That is, why are multiple prices better, both for higher producer profits and lower deadweight loss?
2. With perfect information, consumers would always choose the lower price if the same item was made available at different prices. How does this explain the existence of *versioning*, selling very similar items at different prices? Why is versioning, to set very different prices on very closely related items after damaging the highest quality ones to create variation, more common with information goods than with purely physical goods?
3. If a firm knew each customer's *type* (good or bad risk, expensive or inexpensive to serve, etc.) how could it use this information?
4. Why does a signal about *type* have to be expensive or difficult to send in order for it to be reliable? What if consumers got a 20% reduction in their insurance for taking a 2-hour *attitude training and anger management* class? What if they got the same 20% reduction only after perfect attendance at a 12-month class with an exam after each session? What if you got a 20% reduction in health insurance costs for joining a health club for \$100? What if you got the same reduction only for having played a varsity sport and continuing to play in an amateur club league?
5. What is the principal difference between a *signal* and a *screen*? Why is the use of screening mechanisms and screening contracts in business so much more common than the use of signals?
6. Why are there complex social issues associated with using information about differences among customers? Why are these issues becoming more complex? Why are regulators becoming suddenly more interested in corporate use of screening contracts and data mining?
7. Why are these issues complex enough that regulators often get their analyses wrong in subtle ways that have huge implications for the markets?

Required Submission

Describe an example when you used or encountered a *signal* in your personal or professional life. Describe an example when you used or encountered a *screen* in your personal or professional life. What information asymmetry was being addressed? Why was the screen or signal the appropriate mechanism for dealing with information asymmetry in your examples?

OIDD 613
Online Innovation and Information-Based Strategy
Dealing with Information Asymmetry —
Screening Mechanisms in Newly Vulnerable Markets
(Discussion of Newly Vulnerable Markets³)

Session 4 — 12 September 2018

Questions for Class Discussion

1. What is the *customer profitability gradient* and why is it so important to modern profitability-based strategies?
2. It seems pretty clear that the *defender* should *always* enjoy an information advantage, relative to a competitor attempting to capture its most profitable customers. That is, the *attacker* is *making educated guesses* about who might be profitable and who might not be; the *defender should always have more accurate information* on who has been profitable and who has not been. Why do some attackers encounter situations where defenders appear unable to duplicate the attackers' strategies and thus unable to defend themselves effectively?
3. What are the three characteristics of a Newly Vulnerable Market and why are each important?
4. Why did Capital One face a Newly Vulnerable Market? Describe each of the three elements that enabled Capital One to treat credit cards as a newly vulnerable market?
5. Capital One had higher costs than other credit card issuers because it did not have access to deposits or other cheap sources of funding for its credit card portfolio, it did not have operational scale, and it was attempting to implement more complex marketing strategies than its competitors. And yet it charged lower prices than its competitors, as reflected in its lower APR. How can any organization have higher costs and lower prices than competitors and still be more profitable?
6. Customer profitability gradients are not unique to banking or even to sophisticated services. The US Postal Service has been in trouble for years, since long before the widespread adoption of services like email. At one end of the market it lost market share among customers who wanted mass mailings to city residents. At the other end it lost market share among customers who were willing to pay for special delivery services, who switched to Federal Express. (i) The USPS is required by law to charge all customers the same amount for each class of service, regardless of location of sender and addressee. How does this contribute to the existence of a CPG? (ii) Why are local delivery customers and customers who most want immediate delivery extremely desirable? (iii) How does the loss of these two segments create problems for the USPS?

³ There are no power points posted in the course website for class discussion sessions.

7. The idea of customer profitability gradients and information asymmetry should be readily extensible to other industries. (i) Is there a strong customer profitability gradient in private medical coverage, such as operating an HMO or PPO? If so, what would constitute a profitable customer? (ii) How might an unscrupulous HMO or PPO operator earn extraordinary profits through a Capital One strategy? (That is, what would a screening mechanism look like?) (iii) In the era of traditional landlines and regulated telephone service, was there a strong customer profitability gradient? If so, what constituted an extraordinarily profitable customer? (iv) How might an unregulated new entrant have attracted profitable customers? (That is, what would a screening mechanism look like?)
8. How easy was it for Capital One to extend its strategy to other industries? That is, (i) How well did they succeed with their attempts to create a retail online flower business or an online retail gift retailer selling valentine chocolates and other holiday favorites? Are they competing effectively with Amazon, Teleflora, and other online retailers? (ii) How large is the customer profitability gradient in those industries? (iii) How easy is it to construct a screening mechanism for these other industries? [Check Capital One's annual report for contributions from online sales of flowers and gifts to assess their success in these industries.]
9. Uber has certainly been in the news lately, and much of the news has not been good. Traditional taxicab companies and their drivers hate Uber. Uber targets the most profitable customers, those who need cabs when cabs are difficult to get, and charges them much higher prices. Uber confirms timing and pricing, and lets you use your smart phone to pay for your taxi and to monitor the location of your car as it approaches. Let's analyze this as if it were a newly vulnerable market (i) Is the market for online delivery of taxi reservations newly easy to enter? (ii) Is it attractive for Uber to attack? (iii) Is it difficult for traditional taxi companies to defend themselves from Uber, and if so, why?

Required Submission

Describe another example of a newly vulnerable market not discussed in the text. What made the market newly easy to enter? Why was there a customer profitability gradient and how was the attacker able to identify and profitable customers, in order to exploit the customer profitability gradient?

OIDD 613
Online Innovation and Information-Based Strategy
The Power of Framing and Reframing

Session 5 — 17 September 2018

Questions for Class Discussion

1. Why do we spend an entire class on framing, reframing, and asking the right question? Doesn't your manager, or your client, always know how to ask the right question? Don't you always know what question you are trying to answer and what problem you are trying to solve?
2. OK, so Lewis Carroll came up with some cute problems. How can you solve his "clock" problem by brute force arithmetic? How can we solve this problem more easily, simply by reframing the question? Be prepared to think about some additional cute Lewis Carol problems in class. Why are problems like this useful preparation for management decision making, even though no one will ever ask you to solve a problem involving clocks and watchmakers as part of your position as a manager or as an executive?
3. The Board at Merrill Lynch was considering a serious decision regarding restricting Mike Bloomberg or allowing him to sell his system whenever and wherever he wished. Why was the problem important? Why was it difficult to solve in its original form? How and why did changing the question make it easier to solve? Why didn't members of Merrill Lynch's management team make this transformation sooner?
4. Unilever and British Airways both started thinking about online sales because supermarket markups and travel agent commissions at least potentially represented great new profit sources without requiring any increases in sales. Why did Lever conclude that the supermarket distribution channel was neither easy to enter nor attractive for a new entrant to attack? Why did BA conclude that travel agent distribution was both newly easy to enter and attractive to attack? Why was the supermarket easy for large retailers to defend against attack by manufacturers of fast moving consumer goods? Why was the market for online travel difficult for agencies to defend against attack by airlines?
5. And then there is that Monty Hall problem again. Explain it to me. Explain it to your classmates. What is the general principal at work here that makes this problem interesting?

Required Submission

Reframing is not always about life, death, and personal survival but it is often profoundly important. Provide an example of a problem that you were initially unable to solve, and describe how you reframed it in order to solve it more easily. How did the reframing help you solve the problem?

OIDD 613
Online Innovation and Information-Based Strategy
The Power of Certainty — Resonance Marketing

Session 6 — 19 September 2018

Questions for Class Discussion

1. What are the factors leading to *hyperdifferentiation*? What is the relationship between *hyperdifferentiation* and resonance marketing?
2. (i) Why does a consumer's willingness to pay for a product depend both upon the product's location in the "product attribute space" and the consumer's own location in that space? (ii) Why does a reduction in the consumer's uncertainty about a new product's location in product attribute space increase the customer's willingness to pay for those new products that are most suitable for him or her? [In other words, why is there a curved portion in the center of the curve when uncertainty is introduced?] (iii) Why does reduction in uncertainty have little or no effect on consumers' willingness to pay for products that do not represent a good fit with their preferences? [In other words, why does the curved portion usually not affect the outer edges of the triangular willingness to pay curve?]
3. In resonance marketing it does not matter how many customers like you or how many hate you; it only matters how many customers love you. Why?
4. (i) Why are resonance products more likely to be snacks, soft drinks, beer, blue jeans, or other small-ticket consumable items? (ii) The Toyota Prius was intended to be a resonance automobile. Is it? (iii) Why are there so few big-ticket resonance products? (iv) Can resonance products be either niche or mass market?
5. Almost all of Amazon's sales are in the fat part of the distribution and *not* in the long tails. If that is true, how does having long tail offerings help Amazon compete?
6. Comment on the importance of resonance marketing to *real* companies. (i) Does the presence of resonance products affect grocery stores and department stores? (ii) Does the presence of resonance products affect the strategies of established companies? Are there categories where growth and profitability of the fat spots is threatened by the accumulation of competitors' sweet spot offerings? (iii) How should P&G, Lever, or Pepsi respond to the growth of sweet spot offerings?
7. What if this resonance marketing theory is all wrong? What if consumers can still be manipulated by ads and company-sponsored messages, as long as these messages successfully present themselves as community-generated content? (i) How would successful astroturfing affect Budweiser, Miller, and Coors as they attempt to enter the high-margin craft brewing marketplace? (ii) How would successful astroturfing by large brewers affect small craft brewers like Victory, Dogfish Head, Ommegang, Stone, and others that have never invested in advertising?

Required Submission Continued on Next Page

Required Submission

What are the forces that have enabled *resonance marketing*? What is the relationship between *resonance marketing* and *hyperdifferentiation*? Why have consumers embraced resonance products? Why have companies embraced resonance products? Suggest another industry where you have found, or would expect to find resonance marketing, that was not discussed in the readings.

OIDD 613
Online Innovation and Information-Based Strategy
Hustle at a Discontinuity, Followed by Platform
Envelopment: Platform Envelopment and Resource-Based
Sustainable Competitive Advantage
(Discussion of Channel Conflict and Platform
Envelopment⁴)

Session 7 — 24 September 2018

Questions for Class Discussion

1. Rosenbluth appears to have benefitted from opportunities in travel as travel became in some sense a newly vulnerable market. (i) Why was there a customer profitability gradient in air travel reservations after deregulation of air travel? (ii) Why were there now opportunities to add value for corporate customers? (iii) Why were airlines not able to counter Rosenbluth's moves into corporate-focused travel services? That is, why were they not able to protect themselves from Rosenbluth's attack on their ability to serve their most profitable customers?
2. Rosenbluth seems to have enjoyed competitive advantage for many years. (i) Why didn't American Express or some other dominant player launch a corporate-focused strategy before Rosenbluth? (ii) Why didn't every other small agency replicate this strategy once its value to Rosenbluth became clear? (iii) [Platform envelopment strategies occur when new applications make old applications more valuable, and make existing infrastructure more valuable. This increases the value of incumbents' assets, making it harder for new entrants to compete.] In what ways did Rosenbluth clearly follow a platform envelopment strategy, with new applications interacting with older applications to create value for customers?
3. Rosenbluth has exited the industry, and under terms much less attractive than they would have gotten in 2000. (i) Why did airlines want to recapture control over their ticket sales? (ii) Why were airlines able to recapture the booking of air travel; that is, what made the market for selling airline tickets newly easy for airlines to re-enter using a channel encroachment strategy?
4. When valuing Google, we are tempted to claim their business model is unique. Almost nothing in business is unique. (i) Could we use the CRS business as a "like" when using mark to like to value Google? What are the similarities? Who uses the CRS and who uses Google? Who pays in each case? (ii) What other differences are relevant? Why couldn't airlines escape from the travel agent CRSs in the 1980s? Are there firms that can escape from the power of third party payer search? Are there firms that probably cannot?
5. Does Google appear to be following a platform envelopment strategy, with new applications intended to build on and increase the value of existing applications? (iv) What risks does this create for other businesses or for society, if any?

⁴ There are no posted class notes for case discussion sessions.

6. Did Microsoft follow a platform envelopment strategy? That is (i) did it have at least one application with nearly universal adoption? (ii) did it find a way to combine that application with other applications, to produce a sustainable revenue source that competitors could not match?
7. Is Facebook following a platform envelopment strategy? That is (i) Does it have at least one application with nearly universal adoption? (ii) Has it found a way to combine that application with other applications, to produce a sustainable revenue source that competitors cannot match?

Required Submission

Think of other companies that are trying to follow a platform envelopment strategy and be prepared to present your analysis in class. Don't describe Google, Facebook, or Microsoft. What is their foundation app or service? What are they trying to build on top of their foundation? Why do you believe that it will work, or that it will not work?

OIDD 613
Online Innovation and Information-Based Strategy
Quantitative Analysis of Resonance Marketing
Session 8 — 26 September 2018
Questions For Class Discussion
(Questions to be provided before class)

OIDD 613
Online Innovation and Information-Based Strategy
Making the Technology Investment Decision

Session 9 — 1 October 2018

Questions for Class Discussion

1. What is the role of subjective and qualitative analysis in making the decision to implement strategic information systems projects? Why can't all strategic systems investments be justified through use of precise and accurate verifiable data?
2. What problems might be encountered trying to justify systems investments without such hard data? How can this best be managed?
3. What is the role of *strategic necessity* in justifying systems investments? Can systems create value for your customers and still not lead to additional profits or even to additional revenues? What are the limitations of attempting to justify investments by appealing to "strategic necessity" for the firm?
4. In class we will discuss *Strategic Chunkification*, the division of a large investment in information technology into two phases, where the first phase investment will be made early and unconditionally, and the second phase investment will be made later, and only if the conditions that emerge over time have justified continuation. (1) Relate the concept of the phase 1 investment to a strategic option. Why might the phase 1 investment be made, even if the firm knows there is a chance that it will never be completed or used? (2) If the firm later does decide to go forward with the phase 2 investment, what is the value to the firm of having made the phase 1 investment earlier? (3) Describe situations in which this two-phase strategy might make sense. That is, what are the factors, such as expense, duration, or others, that might characterize the two phases in order to make this sort of investment strategy valuable to the firm?

Questions Formerly for Written Analysis

<<Questions Posted Under FILES / Notes as OIDSsession10Questions>>

OIDD 613
Online Innovation and Information-Based Strategy
Learning to See Alternative Worlds — The Power
of Scenario Analysis
(Study of Disruptive Technologies — The Future of
Consumption in China)

Session 10 — 3 October 2018

Questions for Class Discussion

1. Scenario planning does not use historical data. Why might it ever be helpful to start without data? Why might it sometimes be dangerous to start with data?
2. Scenario planning starts with uncertainties. Are all uncertainties equally important? How do you determine which uncertainties to use when constructing your alternative worlds?
3. Statistical analyses can be compared to using data to determine “what game God is playing with the Universe.” Scenario analysis can be compared to using historical patterns to list “all the games God might start playing with the Universe soon.” What does that mean and why might it be useful?
4. Assume for the moment that Chinese consumption patterns begin to look more like those in the West, in which consumption is as much for personal delight as it is for public signals of status, but that foreign brands remain more enjoyable and more trusted. (i) What could cause this scenario to emerge? (ii) How would you know that this scenario had started to emerge? What are your early indicators of this scenario? (iii) How would this affect the strategies of retailers? How would this affect the strategies of restaurants? (iv) How would this affect foreign manufacturers who imported their products into China? Who would be best positioned? (v) How would this affect foreign manufacturers who actually manufactured their products in China? (vi) How would this affect domestic manufacturers? What sorts of firms would be best positioned?
5. Assume for the moment that Chinese consumption patterns begin to look more like those in the West, in which consumption is as much for personal delight as it is for public signals of status, but that domestic Chinese brands are now seen as more enjoyable and more trusted. (i) Why is this the Chinese government’s favorite of the four scenarios? (ii) What could cause this scenario to emerge? (iii) How would you know that this scenario had started to emerge? What are your early indicators of this scenario? (iv) How would this affect the strategies of retailers? How would this affect the strategies of restaurants? (v) How would this affect foreign manufacturers who imported their products into China? Who would be best positioned? (vi) How would this affect foreign manufacturers who actually manufactured their products in China? (vii) How would this affect domestic manufacturers? What sorts of firms would be best positioned?

Required Submission

Provide short answers to 5.i, 5.iv, and 5.vii above.

OID 613
Online Innovation and Information-Based Strategy
Third Party Payer Business Models and Online Gateway Systems
Plus A Quick Review of Digital Transformation

Session 11 — 10 October 2018

Questions for Class Discussion

1. Third party payer business models have been around for some time. The airline reservations systems model provides a good example. Travel agencies had a choice of going directly to the airlines for reservations or staying with the CRSs that they were provided; why did they use CRSs? Once customers use agencies to book flights, and agencies use CRSs to find flights, airlines are required to participate and to pay the fees that CRSs demand. Why didn't agencies object to the fees charged to airlines? Why didn't customers object?
2. American Express can also in part be considered a third party payer business model. The customer uses AmEx to pay for travel or for expensive impulse shopping purchases, but at least in the US the customer does not pay for the use of the card. The merchant needs the traffic brought by American Express, and pays the fee charged by AmEx. What limits the fees charged by American Express? What limits the fees that acquiring banks charge these merchants when customers use MasterCard or Visa instead?
3. So competition between numerous banks servicing merchants seems to limit the fees charged by credit card companies even in a credit card third-party payer environment, but competition between search engines does not appear to limit pricing charged by Google. Why? What is different between Google and the credit card business model? What is the same?
4. How has Facebook transformed fake news from mass-produced industrial revolution lying to high the resonance marketing lying? Why is the new sweet spot fake news so much more dangerous than mass-produced fat spot fake news.

Required Submission

Is this, like, the greatest business model, ever?

1. Ford is not legally required to make the best cars it possible can; it is ok if Ford's are lower quality than Mercedes and as long as there is a market for cars of Ford's quality at Ford's prices everyone is happy. Google is free to users and there is a market for search at that price. How can there possibly be a problem?
2. Is Airbnb *fair* to tenants who want to rent out their homes? Is Airbnb fair to tenants who *don't want* their neighbors to rent out their homes? Is Airbnb fair to hotels that have to compete against them? Is Airbnb fair to property owners who want to replace long-term tenants with spot market rentals? Is Airbnb fair to displaced renters? What does fair mean here?

3. Google doesn't ever divulge your personal information to an advertiser. Google knows who you are when they send you an ad via email, but the ad comes from Google. Why doesn't that ensure that your privacy is protected? Why is *anonymity in targeted ads* nothing more than a myth?

OID 613

Online Innovation and Information-Based Strategy

The View from the EU or Why is Competition Commissioner Margrethe Vestager so Excited Right Now?

Plus Thoughts on the Downside of Digital Transformation

Session 12 — 10 October 2018

Questions for Class Discussion

1. What are the most important patterns for the impacts of information technology on business strategy that we have discussed in this class? How might you be able to use them as you become progressively more senior in the management of your organization?
2. Why is the EU so angry at Google? Yeah, Google crushed Foundem. There is no law against a retailer promoting its own products and services. Walmart preferences Sam's Choice. Many supermarkets promote their own private label offerings, some of which are quite good. If Google's actions don't break any EU laws, why did the EU impose a record-setting €2.1 Billion fine?
3. Why did the EU get even angrier at Google? GM cars use genuine GM parts. HP designs its printers so that they have to use HP ink cartridges. I certainly want every Airbus and every Boeing aircraft I get on to use genuine parts. So Google ensures that every Android device uses genuine Google-certified apps for Mapping, eMail, YouTube, and many other functions. They even have sanctions for violating their rules, just as Airbus and Boeing should have. If Google's actions don't break any EU laws, why did the EU impose an even bigger, record-breaking €4.3 Billion fine?
4. Yeah, Google and Amazon hear every word you say in your house. Yeah, every tweet you make, every search you take, they'll be watching you. Yeah, Facebook knows enough about you to allow someone to manipulate how you vote. Could global mega-corporations possibly become more powerful than the current set of nation-states that dominate the globe? The current definition of the nation-state in some sense dates back to *The Peace of Westphalia* in 1648. There's no reason to believe that this world order is permanent. What would a world order dominated by mega-corporations look like?
5. Yeah, China has copied a lot of Western technology. And, yeah, they are trying to leapfrog ahead of the West in many elements of cloud computing, AI, super-computing, and networking technologies. What would the world look like if Chinese companies dominated, not the current set of Western companies?

Required Submission — Continued on Next Page

1. Google ensures that every Android device uses genuine Google-certified apps for Mapping, eMail, YouTube, and many other functions. They even have sanctions for violating their rules. If Google's actions don't break any EU laws, why did the EU impose a record-breaking €4.3 Billion fine?

2. Joshua Wright was an assistant professor at George Mason Law School and a virulently aggressive paid blogger for Google. When it appeared that the FTC was going to sanction Google for anticompetitive behavior, Google arranged for him to be appointed a Commissioner on the FTC (see, <https://www.ftc.gov/about-ftc/biographies/joshua-d-wright>). When the FTC decided not to act, Wright immediately resigned from the Commission. Could Google or Facebook use their control over media and public opinion to influence governments' attempt to regulate them? Could they become *de facto* nation states, or at least as influential as traditional nation states?