

## University of Pennsylvania, Wharton School

Department of Operations, Information, and Decisions  
OIDD 469 – Advanced Information Strategy and Economics (0.5 CU)  
Spring 2021 (Online and Synchronous)

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### *Course Overview*

This course is devoted to the study of the strategic use of information and the related role of information technology, and designed for students who want to manage and compete in technology-intensive businesses. The topics of the course vary year to year, but generally include current issues in selling digital products, intermediation and disintermediation, competing in online markets, emerging technologies, managing artificial intelligence and data science for business, and technology project management. Heavy emphasis is placed on utilizing information economics to analyze businesses in information-intensive industries. Technology skills are not required, although a background in information technology management, strategic management or managerial economics is helpful. The course is designed to complement OIDD 210, OIDD 215, OIDD 245, and OIDD 255X.

If “software is eating the world”, then a new view of economics is needed to understand how pricing, competition, and markets will change as more of the economy is digitized.<sup>1</sup> We will study information-based industries like digital media, social networks, financial services, and online retail as well as traditional businesses that are being changed by new digital capabilities. There are four broad themes for the course: the economics of information goods and services, search and consumer information, markets and market design, and implementations. Each day we will discuss a core topic in one or more of these themes, with an emphasis on bridging theoretical ideas to real world applications. Application topics might include applying artificial intelligence, platform economics, and cryptocurrencies.

The course is likely to be especially useful for students interested in working in the information economy. For those interested in becoming consultants, business technologists and analysts (e.g. product managers or technology management roles), analysts of various types, and entrepreneurs this course will introduce critical frameworks for understanding the economics of competing in digital business. The

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<sup>1</sup> <https://www.wsj.com/articles/SB10001424053111903480904576512250915629460>

course is analytical, but not heavily quantitative. A basic understanding of strategy and microeconomics (including basic game theory) is useful, but all necessary strategic or economic concepts will be discussed as part of the course.

### *Course Structure and Grading*

*Preparation and Readings:* The majority of the work in the course is preparing by doing the readings and coming to class ready to discuss the ideas in the readings. For each session there will be a reading guide posted on Canvas listing required (and in some cases, optional) readings from academic, trade, and popular sources. There will also be a couple guest speakers and exercises derived from the readings. There is no required textbook.

In order to guide some of the discussion, each “topic”-based session (most sessions with the exception of the first and last days of class) will have a short graded memo assignment due the evening before the start of class. Each student’s two lowest memo assignment grades will be dropped. Details on these short memos can be found below.

*Grading:* There are four main class activities that will be graded:

- **Exam (25%):** We will have an open-note exam scheduled during the allotted final exam period. Students are not allowed to work together on the exam or access materials other than notes and readings. We will have an optional review session prior to the exam to be scheduled closer to the date.
- **Memos (25%):** Memos will consist of between one and four open-ended questions based on the readings for the session. In total, memo responses should typically not exceed three double-spaced pages with typical margins. There is no minimum length for a response to a particular question. Memos will be due by 11:59pm on the day prior to class unless otherwise noted on the course calendar, which is adjusted to reflect holidays. We will use Canvas for submission and grading. Memos are graded between 1 and 10 (10 is the highest possible score). We will have 11 days on which a memo will be due; students may drop their two lowest memo scores. This is intended to build in flexibility. Late memos will not be accepted, as the exercises are meant to prepare for class. These memos should reflect original thinking for each student. That is, group work on the memos is NOT permitted. Of course, discussion of the conceptual material is strongly encouraged.
- **Class Participation (20%):** Contributing insight to the class and helping the entire group engage with the subject matter is highly valued in this course. This of course requires adequate preparation, both in the explicitly required exercises as well as with each student’s best efforts to go beyond the basics from the readings and materials. Participation is therefore both about frequency and quality. The goal is to help everyone (including the instructor!) to learn. We know that taking a risk to express a perspective in a group can be challenging, but it is a critical skill to develop at Wharton and beyond. On the other hand, inappropriate behavior that

distracts from the day's discussion or makes it more difficult for us to engage with the course content can negatively affect a participation grade.

- Final Project (30%): The final project can be done in groups (no more than 5 people per group) or individually, and is meant as an opportunity for you to explore a question related to digital economics that you find particularly interesting. The project is largely unconstrained. The only prompt is to 1) define a question that you think merits deeper inquiry and 2) answer it with rigor. Your answers, however they are formulated, should consider alternative perspectives. We will spend a day in the middle of the quarter for everyone to present their initial ideas with group feedback. On the last day of class teams will present their work (following previous years, each team will get approximately  $15 \text{ min} * \sqrt{\text{GroupSize}}$ ). Additionally a report detailing the results and findings will be due the same day. This report should be 6-10 pages double-spaced, not including references, figures, and tables. Both the report and the presentation should clearly state and motivate the question to be addressed, explain the methods applied, and analyze the findings.

Since the answers to the memos are inherently subjective, there will be no re-grade requests permitted for those assignments. For all other assignments, points will be deducted at a penalty rate of 20% for each day the submission is late.

### *Office Hours and Course Support*

We will be using Canvas for dissemination of readings and submission of assignments, as well as course announcements. OIDD 469 will also be conducted remotely and, since the course blends lecture and discussion, synchronously in the Spring 2021 first quarter. We will also have a class Slack for interested students to have ongoing discussions and share materials of interest.

Office hours will be either 1) by appointment or 2) on Fridays between 11am and 1pm EST. There may also be "open channel" office hours where Professor Rock is available via zoom. Any student can drop in for these sessions (timing to be approximately weekly, posted on Canvas). These office hours are your time! Feel free to discuss anything of interest.

### *Course Calendar*

The tentative agenda for the quarter is as follows (subject to change):

- 1/21: Course Introduction  
*Information Goods*
- 1/26: Information Goods and Versioning\*
- 1/28: Bundling and Information Goods Pricing\*  
*Markets*
- 2/2: Information Asymmetries and Information Risks\*
- 2/4: Markets\*

- 2/9: Auctions and Mechanisms\*  
*Networks and Platforms*
- 2/11: Network Effects and Social Networks\*
- 2/16: Platform Economics\*
- 2/18: Project Proposal Day  
*Applications and Technologies*
- 2/23: Intangible capital and cloud computing\*
- 2/25: Artificial Intelligence and automation\*
- 3/2: Guest speaker\*
- 3/4: Flexible Topic Day (TBD)\*  
*Wrap Up*
- 3/9: Final presentations and course conclusion

\*memo due