

The Digital Economy: Regulatory Conflicts and Opportunities

Spring 2023

Professor Jason Buckweitz - jab2322@gsb.columbia.edu

Professor William J. Drake - williamdrake.org@gmail.com

Professor Bruce Lincoln - bruce.lincoln@gmail.com

Office: Geffen 694

Office hours: Thursday 2:00pm-5:00pm or by email appointment

TA: TBD

Syllabus

I. Overview

This course covers a subject that is crucial for management success in the future: how government policy and regulation affect the online-based industry and its users, and how the industry in turn can affect government action. The skills needed to navigate this interaction are critical for managers in the emerging digital economy, as well as to forward-looking policy making. This course takes an innovative approach, bringing together several strands of the MBA program, together with public policy and technology management, and applies them to the online media and information sector. It aims to give students the MBA tools to run or use digital and online businesses in an environment full of government initiatives and restrictions. The course is valuable for future entrepreneurs, investors, creators, marketers, advertisers, users, and public officials.

Lecture Topics and Schedule

January 26

1. Introduction to the Course and The Digital Economy

February 2

2. Digital Markets: Industry Concentration in the Information Economy.

February 9

3. Employment: Creating and Recruiting a Digital Workforce: Public Policies and Private Initiatives.

February 16

4. National and Local Promotion of the Digital Economy: Lessons from Past Initiatives for Present Infrastructure Efforts

February 23

5. The Challenges of Online Financial Transactions.

March 2

6. Intellectual Property and Technology Standards.

March 23

7. How the Tech Sector can Overcome the Digital Divide

March 30

8. Privacy and Cyber-Security.

April 6

9. Crossborder Data Flows and Global Digital Trade.

April 13

10. Public Private Partnerships in Digital Economic Development: Factors for Success

April 20

11. Openness, Fragmentation, and Governance of the Internet and the Digital Economy.

April 27

12. Conclusion and Outlook: The Effect of the Digital Economy on Traditional Economy

II. People

Jason Adam Buckweitz

(212) 854-3756

Jab2322@gsb.columbia.edu

Jason Buckweitz is the Executive Director of the Columbia Institute for Tele-Information, a research center on media, tele-communications, and IT. He has lead research projects on media ownership around the world, media management, the next generation of online streaming video, digital financial services, and metaverses. In addition to organizing research, publishing, and hosting events, he is a regular contributor on media matters.

He holds a Juris Doctor from New York Law School, with a background in Intellectual Property and Anti-trust law, and is a practicing attorney in New York. His background in regulatory experience stems from his Bachelors from Rutgers University in Political Science, as well as his time as a councilmanic aid at the New York City Council. He has been involved in digital technology and law for many years, and has significant knowledge about each and their intersection.

William J. Drake
(212) 854-4222

William J. Drake is Director of International Studies at Columbia Institute for Tele-Information, Columbia Business School, in New York City. In addition, he is an International Fellow in the Media Change & Innovation Division of the Department of Communication and Media Research at the University of Zurich, where he also served as a Lecturer from 2010 - 2020. Other previous work experience has included: Senior Associate at the Centre for International Governance at the Graduate Institute for International and Development Studies; President of Computer Professionals for Social Responsibility; Senior Associate and Director of the Project on the Information Revolution and World Politics at the Carnegie Endowment for International Peace; founding Associate Director of the Communication, Culture and Technology Program, Georgetown University; Assistant Professor of Communication at the University of California, San Diego; and adjunct professor at the School of Advanced International Studies and the Georgetown School of Business.

Drake's activities in the academic and practitioner environments have included: advisor to the World Economic Forum's System Initiative on Shaping the Future of Digital Economy and Society; core faculty member of the European and South schools on Internet governance; co-

editor of the MIT Press book series, *The Information Revolution and Global Politics*; three terms as Chair of the NonCommercial Users Constituency, seven terms on the Board of Directors of the European At Large Organization, two terms on the Nominating Committee, and two terms on the Council of the Generic Names Supporting Organization, all in the Internet Corporation for Assigned Names and Numbers (ICANN); member of the Multistakeholder Advisory Group of the UN's Internet Governance Forum; expert advisor to the high-level Panel on Global Internet Cooperation and Governance Mechanisms; member of the UN's Working Group on Internet Governance; member of the inaugural Coordination Committee of the NETmundial Initiative; member of the Coordination Committee of the 1Net initiative; member of the Group of High-Level Advisors of UN Global Alliance for ICT and Development; and Vice Chair and founding Steering Committee member of the Global Internet Governance Academic Network. Drake received his PhD in Political Science from Columbia University.

Bruce Lincoln
(646) 795-0159

Bruce Lincoln is currently a social entrepreneur, but his background has been as a serial technology entrepreneur. He was the Founder and Chief Design Scientist of the Urban Cyberspace Company which was an innovator in the field of smart and green buildings in Harlem. As the Co-Founder of *Silicon Harlem*, Bruce helped form a hyper-local tech ecosystem responsible for creating a hub for tech entrepreneurship and innovation.

From 1994 until 2004, Bruce was the Senior Educational Technologist and Manager of Community Outreach at the Institute for Learning Technologies at Teachers College, Columbia University where he managed the Harlem Environmental Access Project (1994-96), The Eiffel Project (1996-2001), The Harlem Renaissance 2001 Project (1999-2001), The SmartForce E-Learning Digital Scholarship Fund (2000-2002), The New York Online Neighborhood Educational Network Project (2000-2003), and culminating in the New York City Community Technology Center Bank Project (2001-2004).

From 1998 through 2001, under the Clinton Administration, Bruce served as a member of the highly prestigious President's Information Technology Advisory Committee and as an advisor to the White House.

When it comes to Columbia experience, he has been engaged with the School of Engineering and Applied Science as an Entrepreneur-in-Residence at the Center for Technology, Innovation and Community Engagement (CTICE). He has often been a panelist at CITI events and is a Senior Fellow at CITI.

From 1993-1995, Bruce was an adjunct professor at NYU's Book Publishing Institute where he taught a popular course on the future of electronic publishing.

III. Course Website

The primary administrative access point to the course will be through the school's *Courseworks* site. On that site you can find the Required Readings along with non-required Background or Suggested Readings, which can be helpful for supplemental knowledge.

IV. Lectures

Students are expected to follow the three P's, be Punctual, be Prepared, and be Participatory. Lectures are presented in class and the Powerpoints will be made available online after class.

V. Cases

Each class we will integrate the teachings from the lecture into an illustrative case. The cases are required reading in advance of class.

Lecture	Case Discussion
Class 1- Introduction and The Digital Economy: An Introduction.	Comcast vs. Google
Class 2- Digital Markets: Industry Concentration in the Information Economy.	Rupert Murdoch
Class 3-Employment: Creating and Recruiting a Digital Workforce: Public Policies and Private Initiatives	Per Scholas and the Knowledge House
Class 4- National and Local Promotion of the Digital Economy: Lessons from Past Initiatives for Present Infrastructure Efforts.	National Broadband Plan and New York City Internet Master Plan

Class 5- The Challenges of Online Financial Transactions	Bitcoin and M-Pesa
Class 6- Intellectual Property and Technology Standards	GE's Management of its Intellectual Assets
Class 7- How the Tech Sector can Overcome the Digital Divide	Google Fiber and LinkNYC
Class 8- Privacy and Cyber-Security	Amazon
Class 9- Crossborder Data Flows and Global Digital Trade	Corporate Participation in the G20 and the World Economic Forum Processes
Class 10-Public Private Partnerships in Digital Economic Development: Factors for Success.	COSMOS
Class 11-Openness, Fragmentation, and Governance of the Internet and the Digital Economy	Google in China
Class 12-Conclusion and Outlook: The Effect of the Digital Economy on Traditional Economy	Vivendi's Canal Plus

VI. Course Readings

- Readings are located on Courseworks.
- Supplementary Readings are provided on Courseworks for the use of students who want to study topics in greater detail.

VII. Exams

- No midterm exam or final exam.

VIII. Grading

- 5% Class Attendance
- 30% Participation
- 65% Final paper grade

IX. Final Paper Project

The paper is due one week after the last lecture of the course. It should be based on one of the suggested topics below. It should be about 15 pages in length or 20+ pages if done as a team of two.

- Paper Topics:
 1. Produce a business plan for a metaverse company. After describing its business model, discuss how privacy rules affect you, and what you need to do. What are the issues, obstacles, and compliance steps? How can you affect any new regulations, court challenges, and state legislatures?
 2. Plan a retailer's use of a Blockchain payment system such as Bitcoin. After describing the business model, discuss the regulatory issues and obstacles. How does one comply with them? And how one does one use them to competitive advantage?
 3. You are the regulatory compliance officer for a company that provides a social media platform to people around the world. Users of the platform have been posting messages that individuals complain are "hateful" as well as information that some describe as fake news. Governmental agencies have stepped forward with regulatory suggestions. Discuss how your company can deal with the problem, how it can influence the regulation, and how it must organize compliance.
 4. A student's own topic approved by the professors.

A short (1 paragraph) description of your paper topic you plan on pursuing must be submitted no later than February 9th.2023.

X. Course Culture

As is the case for all courses at the Columbia Business School, the School's stated principles of its educational culture are the following:

Attendance: To be in the class, you must be present, on time, and arrive prepared.

Given that the discussions are central to the learning, missing any of the sessions without an excuse will lower your grade

Participation: We expect you to contribute to the learning of your classmates, both through class discussion and feedback during the breakout sessions. Expect cold calling.

Good participation is defined as:

- Actively participate in class discussions, pulling in insights from readings.
- Device usage (phones, laptops) will take away from your participation grade.

XI. Relation to the Core and Prerequisites

There are no prerequisites to the course. The course is multi-disciplinary in approach and exposition, deriving materials and concepts and refreshing them from core courses including Marketing, Strategy Formulation, Global Economic Environment, Managerial Economics, and People Leadership.

XII. Outline of Classes

January 26

1. Introduction to the Course and The Digital Economy

Summary: The emergence of an economy based on information activities. Volume, employment, trends. Nature of regulatory oversight- -digital vs analog. How digitalization impacts economics, and firms/markets/national economies, data flows, and networked globalization.

Class outline:

- a. The Information Revolution as a Control Revolution
- b. From the Post-Industrial/Information/New/Internet Economy to the Digital Economy
- c. The Centrality and Dynamics of Data
- d. Macroeconomic Change: The Nature and Scope of Digital Transformation
- e. Microeconomic Change: Digital Firms, Platforms and Markets
- f. Networked and Datafied Globalization and Value Chains
- g. Strategic Implications for Digitalized vs. 'Born Digital' Firms
- h. The Economics of the Digital Economy

- i. The *Process* of Digital Regulation and how to deal with it.
 - i. The Regulatory Process
 - 1. Managing the Self-Regulation Process
 - 2. Strategic Use of the Regulatory Process
- j. **Case Discussion Segment #1: How Much Should Comcast Invest in the Regulatory Process?**
- k. **Case Discussion Segment #2: Comcast vs. Google**
 - l. Influencing Government and the Public
 - i. Organizing the Lobbying Function and Strategy
 - ii. Public Relations Management
- m. *Substantive policies*: Speech and Net Neutrality in the digital environment and the business implications.
 - i. The Net Neutrality debate.
 - 1. The issue, the history, the parties
 - A. Prioritization/ network management
 - B. Content neutrality
 - C. Usage caps
 - 2. How the regulators proceeded
 - A. USA
 - B. Other countries
 - 3. How the battles are fought. Non-market competition
 - 4. The next round of net neutrality battles
 - A. In Congress and the FCC
 - B. In the courts
 - C. Competitive responses
 - 5. Implications for networks and for applications
 - 6. Non-discrimination, its definition, and its enforcement
 - 7. The emerging information activism
- n. **Case Discussion Segment #3: Net Neutrality—Comcast vs. Google: Playing the System.**
 - i. The Regulation of Digital Marketing and Advertising

- ii. Content Restrictions
- o. Conclusions, Outlook, and Management Takeaways
 - i. **Case Discussion Segment #4 and Summary: Comcast vs. Google-- the Net Neutrality Battles**
 - ii. How is Digital Regulation different From Analog Regulation?
 - iii. Management Implications and Strategies of Dealing with the New Regulation

Class 1 Required Readings:

- *Data is Giving Rise to a New Economy*, The Economist. May 6, 2017, pp. 1–10. (10 Pages)
- BSA | The Software Alliance. *What's the Big Deal With Data?* 2015, pp. 5–16. (9 Pages)
- Organization for Economic Cooperation and Development. *Vectors of Digital Transformation*, OECD Digital Economy Papers, No. 273. January 2019, pp. 5–29. (25 Pages)
- Manyika, James, Susan Lund, Jacques Bughin, Jonathan Woetzel, Kalin Stamenov, and Dhruv Dhringra. *Globalization: The New Era of Global Flows*. McKinsey Global Institute, March 2016, pp. 1–18. (18 Pages)
- Noam, Eli *Entertainment Law and Media Regulation* from Managing Media and Digital Organizations, Springer 2019 (39 Pages)
- Case Material Readings: Comcast vs. Google (14 Pages)
- Kelly, Makena. *Democrats Revive the Fight for Net Neutrality* The Verve. July 28, 2022. (3 pages)

February 2

2. Digital Markets: Industry concentration in the information economy.

Summary: This unit tackles the major issue of market power and media ownership. Fundamental economics, merger rules, anti-trust regulation, ownership structures of various media industries, and cross-ownership issues. The regulatory framework for M&A.

Class outline:

- a. Policy Challenges of the Digital Economy
- b. Governmental Approaches to Market Power in the Media and Online Sector
 - i. US and EU Regulations and Antitrust Actions

- ii. Laws, regulations, and enforcement
 - iii. Major digital examples—US, EU, Mexico
- c. Case Discussion Segment #1: Rupert Murdoch in the Crossfire**
- d. Trends
 - i. Drivers of M&As and of spin-offs
 - ii. Opposition to media mergers
 - iii. Business track record of digital M&A deals
 - iv. Trends of media concentration in different countries and industries.
 - v. Does the transition to Internet-based digital media reduce concentration?
 - vi. Who are the major media owners? Who are the institutional owners?
 - vii. Problem Areas in Online Media Concentration: Google, BRICS, China
 - viii. Regulatory approaches and their track record
- e. Case Discussion Segment #2: Rupert Murdoch in the Crossfire**
- f. Conclusions, Outlook, and Management Takeaways
 - i. Impacts on M&A Strategy
 - ii. Company Strategies to Deal with Governmental Ownership Restrictions
 - iii. **Case Discussion Segment #3: Rupert Murdoch in the Crossfire**
 - iv. The emerging digital market structure

Class 2 Required Readings

- Noam, Eli. *Introduction* in Who Owns the World's Media? Oxford University Press, 2016. (17 Pages)
- Noam, Eli. *Findings: The Questions Addressed from A to Z* in Who Owns the World's Media?, Oxford University Press, 2016. (51 Pages)
- Lande, Robert H. and Sandeep Vaheesan *Ban All Big Mergers. Period.* The Atlantic February 25, 2021. (7 Pages)
- Lee, Edmund. *How Mega-Mergers Are Changing the Way You Watch Your Favorite Shows and Movies.* New York Times, July 27, 2018. (4 Pages)
- Case Readings: Rupert Murdoch (15 Pages)
- Giordano, Philip A. and Paul Washington. *Six Steps CLOs Should Take to Manage Risk in the Era of ESG Initiatives and Stakeholder Capitalism.* The Conference Board July 07. 2022 (10 Pages)

February 9

3. Employment: Creating and Recruiting a Digital Workforce: Public Policies and Private Initiatives.

Summary: The characteristics of a digital workforce. Human resource management in the digital sector. Private and public policies to train a digital workforce. The role of the tech sector. The wider economic and social implications of this transition.

Class outline:

- a. Historical Background: Municipal Challenges to Creating a Digital Workforce
 - i. The Creation of the Committee on Technology and E-Government
 - ii. The Workforce Development System in New York
 - iii. The Rise of Silicon Alley
 - iv. The Role of the Universities in NYC
- b. Initiatives to Address the Problem: NYC and Nationally
 - i. The Function of the New York City Public Schools System
 - ii. The Development of Connected Nation
 - iii. The National Argument Around Digital Literacy
 - iv. CS4All: When Venture Capitalists Get Involved
- c. Case Discussion Segment #1: Per Scholas and Digital Literacy Training**
- d. The Persistent Problem: The Intersection of Access and Socioeconomics
 - i. As the Digital Sector Grows, the Problem Increases
 - ii. Disparities Along Demographic Lines
- e. Case Discussion Segment #2: Solving Accesses and Financial Issues through Non-Profits**
- f. The Rise of For-Profit and Non-Profit Training Programs
 - i. The Founding of Per Scholas: A Focus on Computer Refurbishment
 - ii. The Founding of Knowledge House: A Hyperlocal Focus on Bronx Youth and Digital Employment
- g. Knowledge Management Ramifications
 - i. More Than 20 Years of Effort
 - ii. What Have We Learned?

iii. What Works? What Doesn't?

iv. What Does the Future Hold?

h. Case Discussion Segment #3: Has Per Scholas Worked?

Class 3 Required Readings

- Amandolare, Sarah, Eli Dvorkin, and Charles Shaviro. *Preparing New Yorkers for the Tech Jobs Driving NYC's Pandemic Recovery* Center for an Urban Future, May 2021 (16 Pages)
- "The Lewis Latimer Plan", nul.org/program/lewis-latimer-plan
- Berkowitz, Kelsey. *The Public Workforce Development System and Gig Workers*. New America January 31st 2022. (23 Pages)
- "Exploring Paths to an Inclusive Workforce in NYC", edc.nyc/article/exploring-paths-to-an-inclusive-workforce-in-nyc
- Choudhury, Prithwiraj. *Our Work-from-Anywhere Future*, Harvard Business Review. November-December 2020. (22 Pages)
- "Suddenly Virtual", heldrich.rutgers.edu/work/suddenly-virtual
- Adams, Cai, Grant, Hershbein, and Timmeney. "Evaluation of Per Scholas as an Employee Recruiting Tool for Business", Upjon Institute, September 27, 2019.
- Washington Post Live. *Transcript: Future of Work: Retraining for the Digital Age* Washington Post April 25, 2022. (15 Pages)
- Case Reading: Arnold Ventures *Evidence Summary for Per Scholas Employment Training Program for Low-Income Workers*

February 16

4. National and Local Promotion of the Digital Economy: Lessons from past initiatives

Summary: The observed track record of previous efforts by private industry and governments to incentivize development of the digital economy. Lessons from around the world. Examples of local initiatives. Relevance to accelerated infrastructure funding. Targeting of regions, populations, and industries with priority needs. Managerial use of incentive programs.

Class outline:

- a. Introduction: Increasing Complexity of the Free Market \Leftrightarrow Statist Continuum

- b. National Policy Tools Across Issue-Areas, Old and New
- c. The Technonationalist Turn in Industrial, Innovation and Other Policies
- d. Market-Led National Approaches: Experiences and Controversies
- e. Government-Led National Approaches: Experiences and Controversies
- f. The Special Conditions and Experiences of Developing Countries
- g. How managers can take advantage of national and local programs promoting the digital economy.
- h. Case Discussion Segment #1: European Telecom Operators and Users in the Big Tech/Teleco Battle**
- i. Federal Funding for Local Initiatives
 - i. 2021 Infrastructure Investment and Jobs Act
 - ii. Digital Equity Act
- j. The Federal Broadband Plan and its Aftermath.
- k. Case Discussion Segment #2: US National Broadband Plan and the Growth of the Digital Economy**
- l. State and Local Initiatives around the country
 - i. Track Record
 - ii. The New York Experience
 - 1. Empire State Development and the START-UP NY Program
 - iii. Tennessee and North Carolina
 - 1. EPB and Chattanooga Fiber
 - 2. Building a New Digital Economy in North Carolina (BAND-NC_
- m. Case Discussion Segment #3: New York's Internet Master Plan**
- n. Community Participation and Opposition to Initiatives
- o. Factors of Success in Initiatives
- p. Conclusion

Class 4 Required Readings:

- Noam, Eli M. *Beyond Telecommunications Liberalization: Past Performance, Present Hype, and Future Direction*, in, William J. Drake, ed., *The New Information*

Infrastructure: Strategies for US Policy. New York: The Twentieth Century Fund Press, 1995, pp. 31-54. (24 Pages)

- World Trade Organization. *World Trade Report: Government Policies to Promote Innovation in the Digital Age*. Geneva: WTO, 2020, pp. 6-13, 16-20
- World Economic Forum. *The Global Competitiveness Report: How Countries are Performing on the Road to Recovery*. Geneva, 2020, pp. 5-8, 11-19, 38-42
- Organization for Economic Cooperation and Development. *An Industrial Policy Framework for OECD Countries: Old Debates, New Perspectives*. OECD Science, Technology and Industry Policy Papers No. 127, May 2022, pp. 8-13.
- Case Materials: Axon Partners Group, *Europe's Internet Ecosystem: Socio-Economic Benefits of a Fairer Balance Between Tech Giants and Telecom Operators*, May 2022, pp. 4-21, 40-57. (25 Pages)
- Kessler, Sarah. *New York's Unrealistic Dream of Rivaling Silicon Valley Should End with Etsy's Troubles*. Quartz. May 04, 2017. (5 Pages)
- O'Brian, Chris. *NYC's Beleaguered Startup Scene Looks for a Win with Yext IPO*. VentureBeat. April 12, 2017. (3 Pages)
- Madore, James T. *15 Tech Companies Drop Out of State-Led 'Start-Up NY' Program*. Newsday. July 24, 2017 (9 Pages)
- Cheng, Roger. *New York's Tech Scene: More Melting Pot, Less Silicon Valley*. CNet. August 10, 2015. (7 Pages)

February 23

5. The challenges of online financial transactions.

Summary: This unit covers new financial technologies in the digital economy, including NFTs, Cryptocurrencies, and Blockchain. After discussing the environment in which these new financial instruments and payment rails have emerged, it covers the regulatory field and its effect on their possible success. The class provides a managerial understanding of disruptive financial offerings along with the opportunities afforded, and how to deal with regulators around the world in this emerging field.

Class outline:

- a. The nature of digital financial services and digital money

- i. Technology options
 - ii. The new players and their products
 - iii. Country initiatives
 - iv. The old players, the old cash
 - v. Applications of electronic currencies
 - vi. Risk and liability
 - vii. Consumer Protection
 - viii. Business opportunities and risks in the digital financial sector
- b. Case Discussion Segment #1: The Bitcoin story**
- c. Global DFS: differences between developed and developing world
 - i. Policy Goals: financial inclusion, economic growth
- d. Case Discussion Segment #2: The M-Pesa Story**
- e. Regulators
 - i. Central banks, telecommunications regulators, competition authorities
 - ii. Policy Issues: disruptive nature of DFS on banking system
 - iii. Policy Issues: money laundering and terrorist financing
 - iv. The track record of regulation
 - v. Navigating the regulatory minefield
- f. Conclusions and Management Takeaways
 - i. Risk mitigation strategies in DFS
 - ii. Case Discussion Segment #3: Lessons from Bitcoin and M-Pesa**
 - iii. Outlook of electronic finance

Class 5 Required Readings

- Edelman, Gilad. *The Future of Digital Cash is not on the Blockchain*. Wired. March 28, 2022 (5 Pages)
- Brodtkin, Jon. *Biden Considers Digital Dollar-Here's How it Could Differ from Regular Money*. Ars Technica March 9, 2022. (6 Pages)
- Anonymous. *Battle of the blockchains*. The Economist January 22, 2022. (2 Pages)
- Anonymous. *Adventures in DeFi-land*. The Economist September 21, 2021 (4 Pages)

- Lopatto, Elizabeth. *How Bitcoin Grew Up and Became Big Money*. The Verge January 3, 2019. (8 Pages)
- Lipton, Eric. *Crypto Banking and Decentralized Finance, Explained*. The New York Times September 5, 2021 (6 Pages)
- Smialek, Jeanna. *Fed opens debate over a U.S. central bank digital currency with long-awaited report*. The New York Times January 20, 2022 (2 Pages)
- Beard, Alison. *What Business Leaders Should Know About Cryptocurrency*. Harvard Business Review. December 1, 2020. (19 Pages)
- Case Readings: The Case of M-Pesa (15 Pages)

March 2

6. Intellectual Property and Technology Standards.

Summary: This unit addresses the importance of intellectual property in the digital economy, how to secure, value, and monetize these rights, and what conflicts exist.

Class outline:

- a. Intellectual Assets
 - i. The Rationale for Government Creation and Protection
 - ii. How Companies Organize their IA Management
- b. Case Discussion Segment #1: GE and its Intellectual Assets**
- c. Copyrights
 - i. Copyright Overview and the Digital Challenge
 - ii. How to Get Domestic and International Copyright Protections
 - iii. How to deal with Infringement
- d. Case Discussion Segment #2: GE Copyright Infringements**
- e. Patents
 - i. The Patent System: Overview and Digital Frontiers
 - ii. Getting a Patent and Dealing with the Governmental Patent Office
 - iii. Patent Infringements – Dealing with Rivals and Trolls
- f. The Licensing of Intellectual Property
 - a. How to Value a Firms Intellectual Property
 - b. Strategies to Monetize Intellectual Property

1. Strategic Licensing
2. Sale vs. Lease
3. Exclusivity vs. Open Access

g. Case Discussion Segment #3: GE Patent Infringements

h. Protecting Intellectual Property: How to Deal with Piracy and Infringement

- i. Seeking Governmental Protection
- ii. Private Litigation
- iii. Counter-Attacks
- iv. Technology Fixes
- v. Business Responses
- i. The Changing Environment
 - i. The Open-Source Movement
 - ii. Reform Proposals
- j. Conclusion and Management Takeaways
 - i. Case Discussion Segment #4: GE—Conclusion**
 - ii. How to Manage Intellectual Assets: Outlook and Strategies for Technology and Content Companies.

Class 6 Required Reading

- Noam, Eli. *Intellectual Asset Management* in Managing Media and Digital Organizations. Springer 2019 (58 Pages)
- Diakun, Bridget. *How Mickey Mouse and Darth Vader are helping to grow the Disney brand empire*. World Trademark Review February 8, 2019. (9 Pages)
- Anonymous. *What's Your Intellectual Property Worth? Chances Are You Don't Know*. The One Brief (5 Pages)
- Case Discussion: GE's Intellectual Assets (16 Pages)

March 23

7. How the Tech Sector can Overcome the Digital Divide.

Summary: The concept of the digital divide and its societal and economic implications.

Entrepreneurial approaches to mass connectivity and distribution, and public approaches to market failures.

Class outline:

- a. Background Primer: Decades of Dealing with the Digital Divide
 - i. The Digital Gap in 2022
 - ii. How It Breaks Down as an Urban Problem
 - iii. What it Looks Like as a Rural Problem
- b. It's Harder to Solve than you Think: Google Fiber and the Promise of Ubiquitous High-Speed Internet
 - i. A New Non-Carrier Entrant in Broadband
 - ii. How Google Fiber Exacerbated the Problem Rather than Ameliorated It
- c. **Case Discussion Segment #1: New Entrants in the ISP Realm, Google Fiber and LinkNYC**
- d. It's More Than Providing Technology
 - i. What Good is the Device if You Can't Get on the Network
 - ii. A Primer on Differential Development
 - iii. CODE Next: A Google Social Innovation
- e. The Oncoming of 5G: LinkNYC and ZenFi
 - iii. A Bold Plan to Replace Old Pay Phones
 - iv. Intersection: A Joint Venture of CityBridge, ZenFi and Sidewalk Labs (A Google Company)
- f. **Case Discussion Segment #2: Does Free Wi-Fi Solve the Digital Divide?**
- g. Accelerating the Solution: COSMOS
 - i. Harlem as Testbed for the Next Generation Internet (NGI)
 - ii. A Unique Partnership with NSF and US Ignite
- h. Why is this important from a management perspective?
 - i. The Digital Divide represents an untapped market
 - ii. **Case Discussion Segment #3: Balancing Social Good with Profit**
- i. Conclusion
 - i. Successes and Failures in Attempts to Solve the Digital Divide
 - ii. How the Private Sector has Affected the Digital Divide

Class 7 Required Readings

- Mayor's Office of the Chief Technology Officer. *The New York City Internet Master Plan*. January 2020 (65 Pages)
- La Roche, Julia. *Google CEO: The Digital Divide is 'easier to bridge than most people think'*, Yahoo!Finance. May 24, 2021. (3 Pages)
- Baumgartner, Jeff. *Google Fiber: A Timeline of the Good, the Bad and the Ugly*. Light Reading. February 14, 2019. (5 Pages)
- Sylvain, Olivier. *Network Equality*. Hastings Law Journal. November 26, 2017. (55 Pages)
- Crain's Business. "Alphabet's Sidewalk Labs offshoot is now a unicorn". February 2, 2022.
- Case Reading; Wohlsen, Marcus. *Google Fiber Splits Along Kansas City's Digital Divide*. Wired Magazine. September 7, 2012. (9 Pages)
- Case Reading: Sandoval, Gabriel and Joshua McWhirter. *Big Tech Pays to Supersize LinkNYC and Revive the Broken Promise to Bridge the Digital Divide*. The City. April 27, 2022. (23 Pages)
- Case Reading: Pegoraro, Rob. *LinkNYC Begins Deploying 5G Kiosks – But Not Yet with 5G Inside*. Light Reading. August 8, 2022. (7 Pages)

March 30

8. Privacy and Cyber-Security.

Summary: Data issues of the digital economy. Threats to privacy and cybersecurity, how companies can address them, as well as data regulations that companies need to navigate.

Class outline:

- a. Introduction
- b. Privacy and Tradeoffs
- c. Security
- d. Technologies of Privacy Intrusion
 - i. Privacy Threats
 - ii. Applications
 - a. Data Matching and Profiling
 - b. Location Tracking and more

- e. Security Threats
 - i. Protection strategies
 - ii. Governmental rules and actions on security
 - iii. Making business decisions on security
- f. Economic Analysis of the Cost of Breaches
- g. Case Discussion Segment #1: Optimizing Privacy and Security Investments – Amazon.com**
- h. Industry Self-regulation
- i. Privacy Remedies by Regulation and Legislation
 - i. Government Regulation
 - a. Ad hoc vs. Specialized Agency Approaches
 - b. Right to be Forgotten
 - c. Other Privacy Principles
 - ii. US vs. Europe, and Trade Barriers
- j. Private Remedies
 - i. Company Protective Actions to Enhance Security
- k. Case Discussion Segment #2 Optimizing Protection Investment – Amazon.com**
- l. Technological Protection Tools
 - i. Firewalls, Filters, Encryption
 - ii. Applications to E-commerce
 - iii. Applications to Electronic Cash
 - iv. Applications to Digital Signatures
- m. Markets in Privacy and Security
- n. Conclusions, Outlook, and Management Takeaways
 - i. Case Discussion Segment #3: Optimizing Privacy and Security Policies– Amazon.com**
 - ii. Company tradeoffs, internal procedures, and optimization

Class 8 Required Reading

- Heine, Ilse. *3 Years Later: An Analysis of GDPR Enforcement*. Center for Strategic and International Studies September 13, 2021 (10 Pages)
- Burgess, Matt *How GDPR is Failing* Wired May 23, 2022 (12 Pages)

- Auxier, Brooke et al. *Americans and Privacy: Concerned, Confused, and Feeling Lack of Control Over Their Personal Information* Pew Research Center November 15, 2019. (12 Pages)
- Kerry, Cameron F. *Why protecting privacy is a losing game today—and how to change the game*. Brookings July 12, 2018 (22 Pages)
- Levy, Steven. *Secret of Googlenomics: Data-Fueled Recipe Brews Profitability* Wired May 22, 2009. (15 Pages)
- Hancock, Ben. *What Does GDPR Mean for Senior Management?* BusinessWest March 7th 2018. (3 Pages)
- Case Discussion: Amazon (16 Pages)

April 6

9. Crossborder Data Flows and Global Digital Trade

Summary: Approaches to handling trade among nations in the digital sphere. Managerial responses to protectionism, etc. Economics of digital trade. International trade negotiations, and rulemaking in the WTO, bilateral and multilateral agreements on data and media, impacts, compliance management, violations, company involvement.

Class outline:

- Introduction: An Historical Perspective on National Borders and International Flows
- The Rise of Barriers to Data Flows
- The Rise of Forced Data Localization
 - The EU's General Data Protection Regulation
 - Managing Different Frameworks and Keeping Compliant
- Case Discussion Segment #1: The G20 as Digital Trade Arena**
- The Global Debates on Geoeconomics and Territorial Control
 - Balancing Free Trade with National Security
- The Shift to a Trade Framework for Networks and Electronic Commerce
 - Data Regulation in the Trans-Pacific Partnership (TPP)
 - Data Regulation in the United States-Mexico- Canada Agreement (USMCA)
- Case Discussion Segment #2: Negotiating Trade Frameworks at the G20**

- h. The New Digital Trade Agenda: Multilateral Institutions
- i. The New Digital Trade Agenda: Regional and Plurilateral Institutions
- j. The Concerns and Roles of Business in Digital Trade Policy
 - i. Major Industry Issues in Digital Trade Policy
 - ii. How the Industry Players can Influence National Trade Policy
- k. Case Discussions Segment #3: Corporate Participation and Influence Strategies in the G20 and the World Economic Forum Processes**
- l. Conclusions

Class 9 Required Readings:

- Corey, Nigel. *Cross-Border Data Flows: Where Are the Barriers, and What Do They Cost?* (Information Technology and Innovation Foundation, 1 May 2017), pp. 20–30.
- Casalini, Francesca and Javier López González, *Trade and Cross-Border Data Flows*, OECD Trade Policy Papers, No. 220 (Organization for Economic Cooperation and Development, 2019), pp. 14–35. (21 Pages)
- Reisman, Dillon. “Where Is Your Data, Really?: The Technical Case Against Data Localization,” *Lawfare* (22 May 2017), pp. 1–4. (4 Pages.)
- Drake, William J. *Data Localization and Barriers to Cross-Border Data Flows: Towards a Multitrack Approach – White Paper*. Geneva: The World Economic Forum, January 2018, pp. 5-17. (12 Pages.)
- United States of America, “WTO Agreement on Digital Trade,” INF/ECOM/23 (World Trade Organization, 26 April 2019), pp. 1–9. (9 Pages)
- Case Materials: Salesforce. *Data Beyond Borders: Optimizing Movement and Protection Mechanisms for Crossborder Data Flows in G20 Economies*. 2019, pp. 10-15.
- Case Materials: B20 Italy. *Digital Transformation: Policy Paper*. Rome, October 2021, pp. 21-32. (12 Pages).
- Case Materials: B20 Italy. *Final Communiqué: Policy Recommendations to the G20*. Rome, October 2021, pp. 19-20, 24-25, 27-28, 30-31.
- Case Materials: Drake, William J. *From the Global Digital Divide to the Global Digital Opportunity: Proposals Submitted to the G–8 Kyushu–Okinawa Summit 2000—Report*

of the World Economic Forum Task Force on the Global Digital Divide. Geneva: The World Economic Forum, July 2000, pp. 1-5.

April 13

10. Public Private Partnerships in Digital Economic Development: Factors for Success.

Summary: Arrangements to increase the private sector's involvement in infrastructure, tech entrepreneurship, and beyond. It examines various models and discusses their respective merits and track records, and what the elements of success are.

Class outline:

- a. The Advent of Public-Private Partnerships (P3's): A Means to Advance Digital Economic Development
 - i. Why Should the Government Fund Private Development?
 - ii. Balancing Public Good with Private Profits
 - iii. The Benefits of Participating in a Public-Private Partnership
- b. P3's in New York City
 - i. Civic Innovations Under Mayor De Blasio
 - ii. The NYC Broadband Taskforce
 - iii. Business opportunities in Public-Private partnerships
- c. **Case Discussion Segment #1: COSMOS: A Public-Private Partnership Covering NYC with Advanced Wireless.**
- d. Traditional Government-Led P3's
 - a. The Function of the Economic Development Corporation
 - b. The Office of Strategic Partnership
 - c. DOITT and Its Expanded Vision
- e. The Rise of Private Sector-Led P3's: The New Private-Public Partnership
 - i. Columbia in a Leadership Position
 - ii. The Role of Consortia: Corporate, Academic, Municipal Allegiances
- f. **Case Discussion Segment #2: Why Government Participation is Still Needed in a Mature Industry**
- g. P3's as a model to spin out and commercialize University Innovations

- i. Center for Technology, Innovation and Community Engagement
- h. Case Discussion Segment #3: COSMOS: A Unique Multi-Institutional Collaboration**
 - i. Ramifications for Social Enterprise
 - i. The Resurgence of the Community Technology Movement
 - j. Conclusion
 - i. How Public-Private Partnerships Have Improved the Tech Sector
 - ii. Lessons Learned and How to Improve Public-Private Partnerships
- iii. Case Discussion Segment #4: Has COSMOS Been Effective or Would a Public Option Have Been Better?**

Class 10 Required Readings

- “Public-Private Partnerships and the Future of New York City with Kathryn Wilde”, www.8.gsb.columbia.edu/socialenterprise/news/12594/public-private-partnerships-and-the-future-of-new-york-city-with-kathryn-wilde
- Foley, Rider W., Olivier Sylvain, and Sheila Foster. *Innovation and equality: An approach to constructing a community governed network commons*. Journal of Responsible Innovation. January 12, 2021. (24 Pages)
- Girth, Amanda M. *What Drives the Partnership Decision? Examining Structural Factors Influencing Public-Private Partnerships for Municipal Wireless Broadband*. International Public Management Journal. August 27, 2014. (20 Pages)
- Beckers, Frank and Uwe Stegemann. *A Smarter Way to Think About Public-Private Partnerships*, McKinsey & Company. September 10, 2021. (4 Pages)
- DiMartino, Catherine. *Navigating Public-Private Partnerships: Introducing the Continuum of Control*. American Journal of Education Vol. 120 No.2 February 2014. (23 Pages)
- Case Reading: Teale, Chris. *NYC Research Site Holds Big Promise for Wireless Tech*. Smart Cities Dive. August 27, 2019. (5 Pages)
- Case Reading: Sweeney, Erica. *City-University Partnerships are a Win-Win*. Business Insider. July 25, 2022. (9 Pages)

April 20

11. Openness, Fragmentation, and Governance of the Internet and the Digital Economy.

Summary: Network and regulatory fragmentation, and how businesses can deal with them. Issues like national, multilateral, and multi-stakeholder policies, regulations and standards on internet, the emerging new waves of global rules (competition, market structure, content moderation, domestic content requirements, data, AI, etc., with some EU focus.) The opportunities and challenges from interconnection, interoperability, openness, and cross-border media access.

Class outline:

- a. Introduction
- b. Multilateral Governance of Information and Communication
- c. Multilateral vs. Multistakeholder Internet Governance
- d. The Recent Emergence of New Digital Governance Initiatives
- e. Case Discussion Segment #1: New Internet Regulations Facing Internet Companies.**
- f. Openness vs. Fragmentation: From the Internet to the Global Digital Economy
 - i. Concerns of Fragmenting the Internet
 - ii. Opportunities in a multi-Internet Environment
 - iii. How Interoperability Standards Can Bridge Issues of Fragmentation
- g. The Nature and Economic Impact of Internet Openness
- h. The Rise of Internet Fragmentation
 - i. Russia
 - ii. China
 - iii. Lessons Learned from Fragmentation
- i. Case Discussion Segment #2: Google in China.**
- j. Business Opportunities in a Fragmented Internet
- k. Case Discussion Segment #3: Business Responses to Regional Issues, Google Leaves China**
- l. The Coexistence of Openness and Fragmentation in the Global Digital Economy
- m. Conclusions

Class 11 Required Readings:

- Drake, William J. Introduction: *The Distributed Architecture of Network Global Governance*, in, Drake and Ernest J. Wilson III (eds.), *Governing Global Electronic Networks: International Perspectives on Policy and Power*. The MIT Press, 2008, pp. 11–26 (15 Pages).
- Raustiala, Kal. *Governing the Internet*, *The American Journal of International Law*, 110, July 2016, pp. 491–503. (12 Pages)
- Drake, William J., Vinton G. Cerf and Wolfgang Kleinwächter, *Internet Fragmentation: An Overview – White Paper*. The World Economic Forum, January 2016, pp. 3-19. (16 Pages)
- Organization for Economic Cooperation and Development. *Economic and Social Benefits of Internet Openness*, 2016 Ministerial Meeting on the Digital Economy: Background Report--OECD Digital Economy Papers No. 257. OECD, 2016, pp. 15–32. (17 Pages)
- Case Discussion: Zuckerberg, Mark. *The Internet Needs New Rules. Let's Start in These Four Areas*, *The Washington Post*. March 30, 2019. (3 Pages)
- Case Discussion: Smith, Brad. *The Need for a Digital Geneva Convention*. Microsoft on the Issues. February 14, 2017. (6 Pages)
- Case Discussion: Sheehan, Matt. *How Google Took on China – and Lost*. *Technology Review*, December 19, 2018. (7 Pages.)
- Case Materials: Waddell, Kaveh. *Why Google Quit China—and Why It's Heading Back*. *The Atlantic*, January 19, 2016, pp. 1-4.
- Case Materials: Hamilton, J. Brooke, Stephen B. Knouse and Vanessa Hill. *Google in China: A Manager-Friendly Heuristic Model for Resolving Cross-Cultural Ethical Conflicts*. *Journal of Business Ethics* 86 (2009), pp. 143–157.
- Case Materials: Markovski, Veni and Alexey Trepikhlin. *Country Focus Report: China Internet-Related Policy Initiatives and Laws*. Internet Corporation for Assigned Names and Numbers, GE-010 (updated), January 31, 2022, pp. pp. 10-21.

April 27

12. Conclusion and Outlook: The Effect of the Digital Economy on Traditional Economy

Summary: The transformational aspects of the digital economy, and the ramifications to existing industries. How do markets change? What are managerial responses? What are the opportunities, and how to implement them? What approaches should governments take? What will be the effect on employees and on communities? On national economies? What are the international dimensions?

Class outline:

- a. The Impacts of the Internet
 - i. Jobs in Advanced Countries
- b. Case Discussion Segment #1: Vivendi: Can Canal-Plus Overcome the Hollywood Advantage through Governmental Support Programs?**
- c. Policy Goal #1: Industrial and Technology Upgrade
 - i. Tools
 - ii. Analysis of Success Stories and Failures
- d. Policy Goal #2: Infrastructure Upgrade
 - i. Broadband Policies Around the World
- e. Policy Goal #3: Wireless and Spectrum
- f. Policy Goal #4: Support of National Culture Industries
 - i. Incentives and Subsidies
- g. Policy Goal #5. Governing Global Digital Interdependence and Managing Digitalized Supply Chains in a Fragmenting World
- h. Case Discussion Segment #2: Can Canal Plus Overcome the Hollywood Advantage through Governmental Support Programs?**
- i. Conclusions, Outlook, and Management Takeaways
 - i. Case Discussion Segment #3: Vivendi: Has Government Action Worked?**
 - ii. Support Programs Around the World and their Track Record
 - iii. Is the Policy System Able to Keep Up With Accelerating Change? Implications for Digital Firms
 - iv. How can Firms Operate Under Regulation, and How Can They Use It?
 - v. Conclusions on Government-Business Interaction in the Digital Economy

Class 12 Required Reading

- Terry, Christopher. *10 Years of U.S. Broadband Policy Has Been A Colossal Failure*. Benton Institute for Broadband and Society November 20,2020. (2 Pages)
- Zipperer, Ben et al. *National survey of gig workers paints a picture of poor working conditions, low pay*. Economic Policy Institute. June 1, 2022. (12 Pages)
- McGinnis, Devon. *What is the fourth industrial revolution?* Salesforce.com October 27, 2020 (13 Pages)
- Qureshi, Zia. *How digital transformation is driving economic change*. Brookings Institute. January 18, 2022 (6 Pages)
- Brynjolfsson, Erik and Avinash Collis. *How should we measure the digital economy?* Harvard Business Review. December 2019 (16 Pages)
- Bradbury, John Charles. *What Do Film Incentives Mean for the North Carolina Economy?* CSFE Issue Briefs Volume 2 Issue 1 Fall 2019 (17 Pages)
- Council on Foreign Relations. *Confronting Reality in Cyberspace: Foreign Policy for a Fragmented Internet. Independent Task Force Report No. 80*. New York, 2022, pp. 2-6.
- Case Discussion: Vivendi's Canal-Plus (16 Pages)