

DIGITAL MARKETS INITIATIVE

ANNUAL REPORT

2022



FROM THE DIRECTOR

Welcome to the University of Florida **Digital Markets Initiative (DMI)**. We produce events, educational opportunities, and rigorous and relevant research to transform how scholars, policy makers, companies, and government officials understand the business, regulatory, and antitrust implications of digital markets. We are grateful for the many people whose contributions make DMI successful.

People. We have invested in students and new scholars. Our first student, Palveshey Tariq, is now at Yale University working on quantum blockchain and her Ph.D. in Quantum Computing. Our first post-doc, Peter Wang, continues to work with us on numerous research topics. Our second post-doc, Tejaswi Channagiri, developed research on tech startups that has been widely circulated on Capitol Hill and became a top-ranking paper on SSRN, which is the largest host of social science research papers. Our newest post-doc, Jakub Tecza, has projects on data regulations, radio spectrum auctions, app stores, and the impacts of broadband subsidies on education. We are funding Melissa Rhee, a professor in **Information Systems and Operations Management** and Gabriel Pundrich, a professor in **Accounting** to research fintech issues.

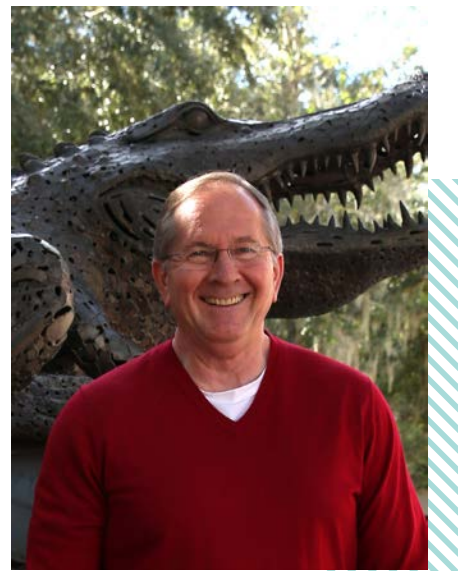
Education and Outreach. We have sponsored or developed numerous educational events for scholars and for government and industry officials. We hosted a former chairwoman of the Federal Communications Commission (FCC) and a current FCC commissioner at the University of Florida to discuss broadband and technology leadership. We developed four events and two podcasts conducted by the American Enterprise Institute examining government funding of broadband expansion, development of the metaverse, and expansion of the Federal Trade Commission's regulatory role. We were also featured in several online events conducted by various think tanks and universities.

Research. Our research is exploring how digitization is affecting business practices and the implications for government policy. Current projects are exploring how broadband impacts entrepreneurship and employment, how app stores impact business success, data regulations in Big Tech, new approaches to antitrust, spectrum auctions, affects of broadband subsidies, and the impacts of online business reviews.

Synergies and Impacts. DMI is working on symposia with Columbia University on metaverse economics, helping the UF business college to connect students with businesses on data analytics projects, assisting the State of Florida on broadband development, and supporting research conferences to address regulatory issues. In addition, we are developing collaborations with other universities and think tanks on ways to help the federal, state, and local governments spend broadband subsidy monies wisely.

Funding. We are grateful to the Charles Koch Foundation for its generous initial funding. We have now gained three industry sponsors – AT&T, Apple, and Facebook. We are actively seeking other sponsors and research grants when possible.

I INVITE YOU TO STUDY THIS REPORT TO LEARN HOW YOU MIGHT ENGAGE IN OUR WORK.



MARK JAMISON
Director

THE DMI TEAM



MARK JAMISON

Director

Dr. Mark Jamison is the director and Gunter Professor of the Public Utility Research Center (PURC) and of the Digital Markets Initiative. Dr. Jamison's research focuses on the nexus between business strategy and government policies, primarily for network and information industries. Current research projects include studies of effects of how innovation increases network value, online entrepreneurship, market power, and antitrust in the online ecosystems. Dr. Jamison is a visiting scholar at the American Enterprise Institute and blogs on technology issues, including net neutrality, universal service, privacy, innovation, competition, and regulatory institutions. Dr. Jamison served on the US Presidential Transition Team in 2015-2016, focusing on the Federal Communications Commission.



PETER WANG

Associate

Peter Wang is an Assistant Professor of Economics at St. Mary's College of Maryland. He was previously a postdoctoral research fellow at the Digital Markets Initiative of the University of Florida. Peter earned his Ph.D. in Economics from Boston University in 2017. His research interest lies at the intersection of the Digital Economy and the Economics of Inequality. Currently he is researching the impact of mobile platform owners' entry into their own app markets and how broadband affects entrepreneurship among women and minorities.



KYUNG SUN (MELISSA) RHEE

Information Systems and Operations Management Faculty

The Department of Information Systems and Operations Management received funding to hire Kyung Sun (Melissa) Rhee, who received her Ph.D. in Information Systems & Operations Management from the University of Washington. Her research interests include sharing economy, social media, and the economics of information systems. She currently has three working papers: "Technology Restriction and Demand Shifts in Transportation Dynamics: Empirical Study" (with Yong Tan, Jinyang Zheng and Youwei Wang), "Social hiring: The Right LinkedIn Connection that Helps You Land a Job" (with Yong Tan and Elina Hwang), and "Recommend Pick-Up Location: The Cure for Driver Retention in On-Demand Ride-Sharing Services?" (with Yong Tan, Jinyang Zheng and Fei Ren).



TEJASWI (TEJAS) CHANNAGIRI AJIT

Associate

Tejas Channagiri Ajit is a researcher for McKinsey & Company. He previously served as a postdoctoral research associate at the Digital Markets Initiative. He earned his Ph.D. in strategic management from the Gatton College of Business & Economics at the University of Kentucky in 2018. His research in the fields of strategic management and entrepreneurship consists of two programs. One applies complexity science to study the context of high-growth entrepreneurship, technology, and innovation, and the other uses cognitive science to study competition and behavioral strategy.

THE DMI TEAM



GABRIEL PUNDRICH

Accounting Faculty

Dr. Pundrich joined Warrington as an assistant professor in accounting. He is in charge of teaching classes and developing research in the area of big data and data analytics for the accounting discipline. He previously served as an assistant professor at Bocconi University in Italy. He has also served as a guest lecturer at the Harvard Business School, a visiting scholar at Massachusetts Institute of Technology, and a visiting scholar at the London Business School. His research focuses on financial reporting quality, auditing, natural language processing, data analytics, big data and machine learning.



JAKUB TECZA

Post-Doctoral Associate

Dr. Tecza has a Ph.D. in Economics from the University of Arizona as well as other degrees in Economics and Business Administration from Goethe University and the University of Mannheim in Germany. He focuses on empirical industrial organization, applied microeconomics, competition economics and contest economics. His research at the DMI includes topics such as competition between digital platforms, relationship between data regulations and market structure, assessing the design of frequency auctions, and the effects of broadband on education.



LILY BOTHWELL

Undergraduate Research Associate

Lily Bothwell is a senior at the University of Florida studying Economics and Statistics. She works with the Digital Markets Initiative on campus, analyzing data on Florida's broadband access with the purpose of increasing access to broadband in the state. Lily is also the co-president and founder of the Women in Economics Club, an organization committed to providing professional and academic resources to students of economics. In her free time, Lily enjoys reading, playing golf, and spending time with friends and family.



LILY PADGETT

Undergraduate Research Associate

Lily Padgett is a senior at the University of Florida majoring in Economics and Mathematics. After she completes her undergraduate education, Lily plans on attending graduate school in Economics. She is currently doing research with the Digital Markets Initiative. On-Campus, Lily is a member of the Student Activities and Involvement Team and is a co-president of Women in Economics. In her free time, she enjoys baking and reading.

RESEARCH SPOTLIGHT

DMI researchers are publishing work on the app ecosystem, antitrust, and regulation of digital markets.

DMI research on competition between the Apple and Google app ecosystems became a working paper for the American Enterprise Institute, was widely circulated on Capitol Hill and received two top ten download awards from the Social Sciences Research Network (SSRN).

This research is being extended to explore how this rivalry affects app developers. Research is also examining how broadband affects entrepreneurship and employment by gender and race. This research also received a top ten download award from SSRN. New research is examining the effects of customer reviews on the success of apps and how vertical integration in app stores affects non-affiliated app developers, We are grateful to Sensor Tower for providing data for these projects and for the research on app ecosystem rivalry.



We are also researching the goals of antitrust and how regulatory mandates for data sharing and interoperability affect competition, investment, and innovation in digital platforms. Finally we are examining the effectiveness of broadband development programs.

2022 BY THE NUMBERS:

32

BLOG POSTS

4

EVENTS

6

NEW PAPERS

3

PODCASTS

5

OP-EDS

RESEARCH GRANTS

DMI's Competitive Research Award Program continues to encourage and sustain active research programs related to deepening our understanding of digital markets and the associated public policies, with priority given to interdisciplinary research.

Search Neutrality and Competition between First-party and Third-party Sellers

Many dominant retail platforms often self-preferentially prioritize their first-party products over third-party competitors' in consumers' search rankings, potentially harming third-party competitors and consumers. Search-neutrality legislations (e.g., EU's Digital Market Act, U.S.'s American Innovation and Choice Online Act) are proposed to forbid such platform self-preference. The regulators and academia have largely ignored the strategic impacts on search neutrality, for example how it will affect the third-party sellers' market entry and the price competition between first-party and third-party sellers. These strategic impacts may unintentionally harm consumers or third-party sellers, for example if search neutrality significantly weakens the price competition or triggers entry deterrence by the platform. This research examines these strategic impacts of search neutrality and their welfare implications, which will help regulators systematically understand search-neutrality regulations.

Reducing Smartphone Users' Tendency to Believe and Share Misinformation

Smartphones' rising popularity has shaped consumer behavior in many ways, but little is known about the role of smartphone use in people's responses to "fake news" or "misinformation", which has become a global problem. Building on previous work, this research tests theoretically relevant interventions that social media platforms can use to improve smartphone users' discernment. According to our theory, smartphone users believe misinformation more than PC users because environmental distractions prevent smartphone users from identifying cues of misinformation (e.g., typos, grammatical errors, logical errors). Hence, we reason that interventions prompting users to process news more carefully (e.g., an alert about fake news at the top of the screen, or a reminder encouraging users to deliberate news deeply) should be able to counteract environmental distractions and enhance discernment.

Towards a Behavioral Theory of Incumbent Repositioning to Disruption Threats

Technological disruption is foundational to digital markets, as evidenced by numerous recent examples, such as artificial intelligence, cryptocurrency, and TV streaming services to name a few. Though technological uncertainty is much discussed in the strategic management literature, it is largely missing in research on technological disruption. Our project seeks to bridge this gap. We build on research in contemporaneous uncertainty to develop novel theory about uncertain technological disruption. Importantly, the theory will consider comparative adjustment, transaction, and opportunity costs to theorize about whether, when, and how incumbents should reposition in response to disruptive threats from entrants in the face of uncertainty.

RESEARCH PAPERS

DMI researchers examine the business and regulatory implications of the growth of digital markets.

PUBLICATIONS AND PAPERS:

Aytug, Haldun, Anuj Kumar, and Xiang Wan. 2022. "Estimating Optimal Recommendation Policy Under Heterogeneous Treatment Effect of Product Recommendation," *Information Systems Research Journal*.

Bandyopadhyay, Subhajyoti. 2022. "The Streaming Games: Analyzing the Revenue Models of Online Media Firms," University of Florida, Warrington College of Business, PURC Working Paper.

Channagiri Ajit, Tejaswi, and Mark Jamison. 2020. "A Tale of Two Platform Ecosystems," University of Florida, Warrington College of Business, DMI Working Paper.

Channagiri Ajit, Tejaswi, and Mark Jamison 2021. "Platform Competition and Differentiation: Business Choices in Mobile Platforms" University of Florida, Warrington College of Business, PURC Working Paper.

Channagiri Ajit, Tejaswi, and Mark Jamison. 2022. "Effects of Conferring Business Resource on Rivals," University of Florida, Warrington College of Business, DMI Working Paper.

Cox, David 2021. "Leveraging Digital Transformation for Capital Markets Development: Closing the Digital Divide" University of Florida, Warrington College of Business, PURC Working Paper.

Dippon, Christian, et al. 2020. "Adding a Warning Label to Rewheel's International Price Comparison and Competitiveness Rankings," University of Florida, Warrington College of Business, DMI Working Paper.

Jamison, Mark. 2019. "Net Neutrality Policies and Regulation in the United States," *Review of Network Economics* 17(3): 151-173.

Jamison, Mark. 2019. "Market-based Policies for Broadband in Florida," *The Messenger*, https://www.jamesmadison.org/wp-content/uploads/2019/09/Journal_Fall2019_04_marketBasedPolicies.pdf.

Jamison, Mark. 2020. "Applying Antitrust in Digital Markets: Foundations and Approaches," American Enterprise Institute working paper; Intellectual Property & Technology Forum Journal at Boston College Law School, <http://bcipf.org/2020/04/applying-antitrust-in-digital-markets>.

Jamison, Mark. 2020. "Towards a Theory of Market Power," *Arizona State University Corporate and Business Law Journal* 1(2): 1-22 <http://cablj.org/wp-content/uploads/2020/06/Ready-Jamison.pdf>.

Jamison, Mark. 2020. "How Politicians Use Your Social Media Data & How to Combat False or Misleading Information Before the Election," University of Florida, Warrington College of Business, DMI Working Paper.

Jamison, Mark. 2020. "Less would be more for tech antitrust," University of Florida, Warrington College of Business, DMI Working Paper.

Jamison, Mark. 2020. "The Regulatory Labyrinth that Inhibits Federal Deregulation," University of Florida, Warrington College of Business, DMI Working Paper.

Jamison, Mark. 2021. "The Biden-era FCC Dilemma: Would Restoring Net Neutrality Regulations Hurt the Poor?" University of Florida, Warrington College of Business, PURC Working Paper.

Jamison, Mark. 2022. "Adapting Merger Guidelines to a Digital Environment" *CPI Antitrust Chronicle*.

Jamison, Mark, and Peter Wang. 2020. "Valuation of Digital Goods During the Coronavirus Outbreak in the United States," *Telecommunications Policy* (forthcoming).

Jamison, Mark, and Peter Wang. 2021. "Effects of Components on Ecosystem Value: The Case of the iPhone and Mobile Broadband" University of Florida, Warrington College of Business, PURC Working Paper.

Kovacic, William, and D. Daniel Sokol. 2021. "Understanding the House Judiciary Committee Majority Staff Antitrust Report" University of Florida, Warrington College of Business, PURC Working Paper

Kury, Theodore. 2022. "What Social Media Regulations Could Look Like. Think of Pipelines, Not Utilities," *The Conversation*.

Li, Gloria. 2020. "Potential Impacts of European AI Regulation on the American Energy Sector," University of Florida, Warrington College of Business, DMI Working Paper.

Li, Xitong. 2022. "How do Product Recommendations Help Consumers Search Products? Evidence of Underlying Mechanisms from a Field Experiment," *Management Science*.

Pereira, Gabriel, and Jacquelyn Gillette. 2020. "Grammatical Violations and Financial Reporting Quality," Warrington College of Business, DMI Working Paper.

Rhee, Kyung Sun, et al. 2019. "Value of Information Sharing and Information-Technology enabled Operations via Transportation Network Company Apps: An Empirical Analysis," Warrington College of Business, DMI Working Paper.

Rhee, Kyung Sun, Eliina Hwang, and Yong Tan. 2019. "Employee Referral Dynamics in Social Hiring," Warrington College of Business, DMI Working Paper.

Yang, Yang, Sang K. Park, and Shunyuan Zhang. 2022. "Mitigating Inequalities Caused by Awareness of Algorithmic Bias," *Journal of Marketing Research*.

ACCESS PAPER ONLINE AT: warrington.ufl.edu/digital-markets-initiative/research

PODCAST EPISODES

THE DMI TEAM APPEARED ON SEVERAL PODCAST EPISODES TO GIVE LISTENERS THEIR KEY INSIGHTS IN SOME OF THE MOST PRESSING ISSUES IN 2022.



THE CHALLENGE OF PUTTING FEDERAL BROADBAND FUNDS TO GOOD USE

Following the passage of the Infrastructure Investment and Jobs Act (IIJA), the National Telecommunications and Information Administration (NTIA) has been tasked with allocating \$42.5 billion of federal broadband infrastructure funding to state and local governments through the Broadband Equity, Access, and Deployment (BEAD) program. This \$42.5 billion is part of a larger \$65 billion sum that the IIJA puts toward broadband infrastructure. How can NTIA and the states ensure the money is spent effectively and that people are held accountable? How can remaining barriers to broadband adoption be overcome without just throwing money at the issue?

FREE SPEECH, HATE SPEECH AND THE ROLE OF GOVERNMENT

In this episode of 'Of Consuming Interest', host Shirley Rooker speaks with Mark Jamison, who discusses the reasons government regulation of what we see on social media is a threat to democracy.

EXPLORING THE METAVERSE

Last year, Facebook rebranded itself as Meta, signaling its shift from traditional social media to a big bet on the so-called metaverse. This network of 3D, online spaces is accessed through virtual reality headsets like Meta's Oculus and promises to revolutionize internet communications. But is there substance behind the hype, or is the metaverse just a fad? And if virtual reality worlds are here to stay, what do policymakers need to know about them?

EVENTS AND PRESENTATIONS

2022 ENGAGEMENTS ON BEHALF OF DMI INCLUDE:

FOLLOW THE MONEY: ENSURING ACCOUNTABILITY IN BROADBAND INITIATIVES

Congress recently earmarked \$64 billion toward ending the digital divide, but this is just a drop in the funding ocean. For this ambition, the US has reserved additional billions across 15 agencies and 133 programs. To help navigate this complex task, the Federal Communications Commission (FCC) released the National Broadband Map in hopes of minimizing inefficiencies. But with so much funding at stake, we must still establish robust mechanisms to monitor and assess these programs. Using the FCC's National Broadband Map and key lessons from previous initiatives, we can ensure these enormous allocations are put to good use. Mark Jamison and an expert panel troubleshoot the best way to evaluate the numerous programs all tasked at ending the digital divide.

CAN BILLIONS OF DOLLARS IN FEDERAL GRANTS SOLVE BROADBAND ACCESS AND AVAILABILITY THROUGHOUT THE US?

On July 21, Commissioner Brendan Carr of the Federal Communications Commission (FCC) joined AEI's Shane Tews and Mark Jamison to discuss how the National Telecommunications and Information Administration's \$42.45 billion Broadband Equity, Access, and Deployment (BEAD) Program could be hampered by misguided priorities and cumbersome regulations. Following the discussion with Commissioner Carr, an expert panel convened.

BIG TECH IS NOT GOING AWAY: NEXT STEPS IN COMPETITION POLICY

Data portability and interoperability have often been promoted as ways to increase competition between digital platforms, but there is a debate on when and how data portability and interoperability could be implemented and how effective they would be in boosting competition and innovation. On June 1 the Bipartisan Policy Center hosted a virtual discussion with the top thought leaders on antitrust and data privacy, including PURC and DMI Director, Mark Jamison.

BACK TO THE FUTURE: HOW NOT TO WRITE A REGULATION

What role do consumer protection rules play according to the Federal Trade Commission (FTC)? When are they appropriate, and what processes and procedures should be used to develop them? On June 1, AEI's J. Howard Beales III and Timothy J. Muris sat down with Baker Botts' Maureen K. Ohlhausen for a panel discussion on the recent efforts for increased rulemaking power in the Federal Trade Commission (FTC). Ms. Ohlhausen was a welcomed guest in this discussion, having led the FTC as acting chairman and commissioner and now chairing Baker Botts' Antitrust and Competition Law practice. PURC and AEI's Mark Jamison moderated the event.

EVENTS AND PRESENTATIONS

HOW SHOULD STATES PUT FEDERAL BROADBAND FUNDS TO USE? A CONVERSATION WITH SEN. DEB FISCHER

The Infrastructure Investment and Jobs Act (IIJA), which became law in 2021, includes more than \$65 billion in federal funding for expanding broadband access in unserved areas, addressing affordability, and strengthening network security. But now the question is: How can that money be put to best use? On April 4, AEI's Ajit Pai hosted a conversation with Sen. Deb Fischer (R-NE) on how states should manage the IIJA's broadband funds and how Congress and NTIA can ensure effective oversight. An expert panel discussion followed, including PURC and DMI Director, Mark Jamison.

GETTING PEOPLE CONNECTED TO BROADBAND

Broadband expansion is on the mind of every public official, broadband provider, and customer. With so many countries testing new solutions and improving traditional approaches to getting broadband into more people's hands, it is important that we compare notes and learn from each other. What are the most economical ways to expand availability? What best helps low-income households? How should governments experiencing budget problems consider broadband as part of their economic development strategies? We partnered with CANTO, the leading authority on ICT in the Caribbean region, to discuss these questions and more.

WHAT HAPPENS IF THE AMERICAN INNOVATION AND CHOICE ONLINE ACT BECOMES LAW?

In January, the Senate Judiciary Committee marked up and approved the American Innovation and Choice Online Act (AICOA) for a main-floor vote. The AICOA would prohibit large tech firms from engaging in well-established, common business practices such as self-preferencing their own products and protecting knowledge assets. This could significantly affect the US tech sector and constrict US ingenuity and global competitiveness. The AICOA becoming law could also have notable consequences for US antitrust policy. DMI and AEI's Mark Jamison hosted an expert panel for a discussion of the AICOA's specific provisions and potential impacts.

OP-ED SNAPSHOT:

- **Here's Why Florida Should Provide Broadband Leadership,** Tallahassee Democrat
- **Congress Could Weaken U.S. Competitiveness with The Two Bills,** The National Interest
- **A New Twitter Is a Threat to Meta, Not to Democracy,** The Hill
- **Russians Need More Access to Internet Content, Not Less. Social Networks Should Re-open There,** RealClearPolicy
- **Rail Regulators Should Heed the Lessons of Aggressive Telecom Rules,** RealClearMarkets



We're proud to be part of the Warrington College of Business and the University of Florida - both rising in the rankings!



Public University
US News & World Report

#8

Public Undergraduate
Finance Program
US News & World Report

#8

Public Executive
MBA Program
US News & World Report

TOP 5

Public Online MBA
Program
*Financial Times, Furtune,
US News & World Report*

#13

Public Undergraduate
Business Program
US News & World Report

TOP 5

Public Undergraduate
Accounting Program
US News & World Report

#8

Public Undergraduate
Marketing Program
US News & World Report

#10

Public Full-Time MBA
Program
US News & World Report

#5

Public Full-Time MBA
Program
The Economist

GET INVOLVED

Our aspiration is to be the leader in transforming how scholars and practitioners understand digital markets. We are establishing a core group of scholars at the university that are dedicated to rigorous research, networking with other leading scholars around the world, developing students who will be tomorrow's leaders, and engaging professionals in business and government. To the extent possible, scholars and professionals in the field will fully understand present and future challenges and will use that knowledge to inform practitioners as they make the decisions that will shape digital markets to come.

We are seeking additional partners to further our efforts and invite you to get involved. We look forward to hearing from you!

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Examine the business and regulatory implications of the growth of digital markets through...

RIGOROUS & RELEVANT RESEARCH,
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