

January 23, 2024

# Frank Nagle

Harvard Business School Boston, MA 02163 Morgan Hall 213 fnagle@hbs.edu

### **EDUCATION**

D.B.A., Technology and Operations Management, Harvard Business School, Boston, MA
 Dissertation: The Digital Commons: Tragedy or Opportunity? The Effect of Crowdsourced
 Digital Goods on Innovation and Economic Growth
 Committee:

Shane Greenstein (co-chair) Marco Iansiti (co-chair) Carliss Baldwin Karim Lakhani Feng Zhu

- 2011 M.S., Computer Science, Georgetown University, Washington, DC Thesis: Quantifying Privacy Breaches in Social Networks
- 2007 M.S., with Distinction, International Business Economics, City University, London, UK Thesis: High-Tech IPO's in the US and Europe Before, During, and After the Dot-Com Bubble
- 2004 B.S., Cum Laude, Computer Science, Georgetown University, Washington, DC

### HARVARD UNIVERSITY

# **Appointments**

2018 – Present Assistant Professor of Business Administration, Strategy Unit

## **Assignments**

2021 – Present	Strategy & Technology Elective
2018 - 2020	MBA Strategy Required Curriculum, Spring
2018 – Present	Executive Education on digital transformation, strategy, and cybersecurity
2018 – Present	Doctoral Seminars (guest lecturer for modules on research methods and user
	communities)

#### OTHER ACADEMIC EMPLOYMENT

2015 – 2018 Assistant Professor, Management and Organization, Strategic Management, University of Southern California, Marshall School of Business, Los Angeles, CA

### TEACHING EXPERIENCE

University of Southern California – Marshall School of Business

- BUAD 497 Strategic Management, 2016-2018.
- Doctoral Research Methods in Strategy and Organizations (Guest lecturer), 2016-2017.
- Doctoral Seminar in Strategic Management (Guest lecturer), 2016-2018.
- Advanced Management Program (Executive Education), 2017.

### Harvard Business School (as a doctoral student)

- Analytics Teaching Fellow for pre-MBA program, 2011 2014. Head Teaching Fellow, 2013, 2014.
- Technology & Operations Management Teaching Fellow for core MBA course, Fall 2013.
- Managing Innovation Teaching Fellow for elective MBA course, Spring 2012.
- Leading Change and Organizational Renewal Facilitator for Executive Education course,
  2011.

### Federal Bureau of Investigation (FBI)

- Network Investigation Techniques for Agents Developer and lead instructor for a required course for all new FBI cyber agents, 2009 2010.
- Wireless Security Lead instructor, 2008 2009.

### Georgetown University

- Computer Hardware Fundamentals Teaching Assistant, Spring 2004.
- Computer Science I Teaching Assistant, Spring 2002 and Fall 2003.
- Computer Science II Teaching Assistant, Spring 2003.
- Introduction to Computer Science Teaching Assistant, Fall 2002.

### **AWARDS AND HONORS**

2021 – Present – Strategy Research Forum, member

- 2019 Best Paper Proceedings, Academy of Management
- 2019 2024 Council on Foreign Relations, Term-Member
- 2018 Best Paper, European Academy of Management (EURAM) Conference, Innovation Strategic Interest Group, Winner
- 2017 LinkedIn Economic Graph Challenge Winner (with Shelley Li, Milan Miric, Pai-Lin Yin, and Noam Wasserman)
- 2017 Best Conference Paper, Strategic Management Society Conference, Knowledge and Innovation Group, Winner
- 2017 Best Conference Paper, Strategic Management Society Conference, Nominated
- 2017 Outstanding Track Associate Editor, International Conference on Information Systems
- 2016 Best Paper, Academy of Management, Technology and Innovation Management Division, Finalist
- 2016 INFORMS TIMES Doctoral Dissertation Award, Runner-Up
- 2016 Grigor McClelland Doctoral Dissertation Award, Finalisti
- 2016 Best Paper Proceedings, Academy of Management
- 2014 Wyss Award for Excellence in Doctoral Research, Harvard Business School
- 2014 Best Conference Paper, Strategic Management Society Conference, Finalist
- 2014 Best Paper Proceedings, Academy of Management
- 2013 Received Excellent / High Pass on HBS Doctoral Qualifying Exam

### FELLOWSHIPS AND GRANTS

- 2022 Linux Foundation Core Infrastructure Initiative Grant (\$500,000 with Karim Lakhani)
- 2022 GitHub Research Grant (\$150,000)
- 2022 Omidyar Network, Senior Fellow
- 2020 Linux Foundation Core Infrastructure Initiative Grant (\$509,000 with Karim Lakhani)

- 2020 Sloan Foundation Grant for "Tracking the Diffusion of High- and Low- Quality Science Through Digital Media" (\$95,353 with Florenta Teodoridis)
- 2018 Linux Foundation Core Infrastructure Initiative Grant (\$500,000 with Karim Lakhani)
- 2017 USC Institute for Outlier Research in Business Funding Grant (\$25,000 with Shelley Li, Milan Miric, Pai-Ling Yin, and Noam Wasserman)
- 2017 National Bureau of Economic Research (NBER) Digitization Grant (\$15,000)
- 2016 Lord Foundation, USC Marshall Seed Funding, Marshall Digitopolis (\$3,000)

#### **PUBLICATIONS**

# **Journal Publications**

- N. Wright, F. Nagle, and S. Greenstein. (2023). "Open Source Software and Global Entrepreneurship." *Research Policy* 52(9), 104846.
- E. Altman, F. Nagle, and M. Tushman. (2022). "The Translucent Hand of Managed Ecosystems: Engaging Communities for Value Creation and Capture." *Academy of Management Annals* 16(1), pp. 70-101.
- F. Nagle. and F. Teodoridis. (2020). "Jack of All Trades and Master of Knowledge: The Role of Generalists in Novel Knowledge Integration." *Strategic Management Journal*, 41(1), pp. 55-85.
- S. Shah and F. Nagle. (2020). "Why do User Communities Matter for Strategy?" *Strategic Management Review*, 1(2), pp. 305-353.
- F. Nagle. (2019). "Open Source Software and Firm Productivity." *Management Science*, 65(3), pp. 1191-1215.
- F. Nagle. (2018). "Learning By Contributing: Gaining Competitive Advantage Through Contribution to Crowdsourced Public Goods." *Organization Science*, 29(4), pp. 569-587.
- S. Greenstein and F. Nagle. (2014). "Digital Dark Matter and the Economic Contribution of Apache." *Research Policy* 43 (4), pp. 623-631. Lead Article.

### **Book Chapters, Conference Proceedings, and Permanent Working Papers**

- F. Nagle and F. Teodoridis. (2019). "Jack of All Trades and Master of Knowledge: The Role of Generalists in Novel Knowledge Integration." *Academy of Management Best Paper Proceedings*.
- F. Nagle. (2018). "The Digital Commons: Tragedy or Opportunity? A Reflection on the 50th Anniversary of Hardin's Tragedy of the Commons." *Harvard Business School Working Paper 19-060*.

- F. Nagle. (2016). "Learning By Contributing: Gaining Competitive Advantage Through Cooperative Contribution to Public Goods." *Academy of Management Best Paper Proceedings*.
- E. Altman, F. Nagle, and M. Tushman. (2015). "Innovating Without Information Constraints: Organizations, Communities, and Innovation When Information Costs Approach Zero." In Oxford Handbook of Creativity, Innovation and Entrepreneurship, pp. 353-378, edited by Michael A. Hitt, Christina Shalley, and Jing Zhou. Oxford University Press.
- F. Nagle and C. Riedl. (2014). "Online Word of Mouth and Product Quality Disagreement." Academy of Management Best Paper Proceedings. Full paper available as Harvard Business School Working Paper 13-091.
- E. Altman, F. Nagle, and M. Tushman. (2013). "Technology and Innovation Management." In Oxford Bibliographies in Management, edited by Ricky W. Griffin. New York: Oxford University Press.

## **Technical Reports and White Papers**

- F. Nagle, J. Dana, J. Hoffman, S. Randazzo, and Y. Zhou. (2022). "Census II of Free and Open Source Software Application Libraries." The Linux Foundation Core Infrastructure Initiative.
- F. Nagle, D. A. Wheeler, H. Lifshitz-Assaf, H. Ham, and J. Hoffman. (2020). "Report on the 2020 FOSS Contributor Survey." The Linux Foundation Core Infrastructure Initiative.
- F. Nagle, J. Wilkerson, J. Dana, and J. Hoffman. (2020). "Vulnerabilities in the Core: Preliminary Report and Census II of Open Source Software." The Linux Foundation Core Infrastructure Initiative.

### **Practitioner-Oriented Publications**

- F. Nagle. (2022). "Strengthening digital infrastructure: A policy agenda for free and open source software." Brookings Institution, May 19, 2022. ii
- F. Nagle. (2022). "How to prioritize the improvement of open source software security." Brookings Institution, March 2, 2022.
- F. Nagle. (2021). "Digital infrastructure is more than just broadband: What the US can learn from Europe's open source technology policy study." Brookings Institution TechStream, November 9, 2021.
- H. Lifshitz-Assaf and F. Nagle. (2021). "The Digital Economy Runs on Open Source. Here's How to Protect It." Harvard Business Review Online, September 2, 2021.
- F. Nagle. (2021). "The Problem of Social Benefit." Stanford Social Innovation Review, Fall 2021, 19(4).

- F. Nagle. (2020). "Why Congress should invest in open source software." Brookings Institution TechStream, October 13, 2020.
- F. Nagle and F. Teodoridis. (2020). "In R&D, Generalists Are More Valuable Than You Think." Harvard Business Review Online, September 28, 2020.
- E. Altman and F. Nagle. (2020). "Accelerating Innovation Through a Network of Ecosystems: What Companies Can Learn from the United Nations." Sloan Management Review, Summer 2020, 61(4).
- F. Nagle and J. Hoffman. (2020). "The Hidden Vulnerabilities of Open Source Software." Harvard Business School Working Knowledge, February 24, 2020.
- R. Kumar and F. Nagle. (2020). "The Case for AI Insurance." Harvard Business Review Online, April 29, 2020.
- F. Nagle. (2018). "Capturing Value from Free Digital Goods." Sloan Management Review, Spring 2018, 59(3), pp. 16-18.
- C. Nutt and F. Nagle. (2010). "Will Laws that Build Upon PCI-DSS Lead to Greater Security?" Secure Times, Spring 2010, 5(1).

## **Working Papers**

- F. Nagle. "Government IT Procurement Policy and Private Firm Behavior: Evidence from a French Open Source Software Policy." Harvard Business School Working Paper 19-103. (Under 2<sup>nd</sup> round review at *Organization Science*).
- F. Nagle, R. Seamans, and S. Tadelis. "Transaction Cost Economics in the Digital Economy: A Research Agenda." Harvard Business School Working Paper 21-009. (Conditionally accepted at *Strategic Organization*).
- S. Li, F. Nagle, and A. Zhou. "Mapping Firm-Level Networks Using Employee-Level Connections Evidence from Digital Professional Networks" Harvard Business School Working Paper 24-010. (Revise and Resubmit at *Strategy Science*).
- M. Hoffman, F. Nagle, and Y. Zhou. "The Value of Open Source Software." Harvard Business School Working Paper 24-038. (Under review at *Management Science*).
- N. Wright, F. Nagle, and S. Greenstein. "Open Source Software and Global Entrepreneurial Growth." (Under review at *Management Science*).
- S. Li, F. Nagle, and A. Zhou. "Employee Connections and Firm Productivity: Evidence from LinkedIn." (Under review at *Strategic Management Journal*).

- F. Nagle, E. Seo, and S. Shah. "A Little Help From My Friends: The Impact of Receiving Assistance on Participation in Online Knowledge-Sharing Communities." (Harvard Business School Working Paper 21-026).
- F. Nagle, and H. Lifshitz-Assaf. "The Impact of COVID-19 on Knowledge Worker Productivity."

## **Work In Progress**

- H. Lifshitz-Assaf and F. Nagle. "Goldilocks and the Three Programmers: Unpacking the Relationship Between Online Contributions and Productivity at Work."
- K. Lakhani, F. Nagle, M. Hoffman, and A. Staub. "Do Programmers Pay to Be Open?"
- S. Boysel, M. Hoffman, and F. Nagle. "Competition and Open Innovation."
- M. Hoffman, S. Boysel, F. Nagle, and S. Peng. "The Impact of Generative AI on Programmer Productivity: Evidence from GitHub Copilot."
- S. Boysel, M. Hoffman, and F. Nagle. "The Impact of Automated Security Audits on Open Innovation."

### **Computer Science Publications**

- F. Nagle. (2013). "Privacy Breach Analysis in Social Networks." In Studies in Mining Social Networks and Security Information, edited by Zeki Erdem, Tansel Ozyer, Suheil Khoury and Jon Rokne. Springer Verlag.
- F. Nagle, L. Singh, and A. Gkoulalas-Divanis. (2012). "EWNI: Efficient Anonymization of Vulnerable Individuals in Social Networks." Proceedings of The 16th Pacific Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2012). Republished in Lecture Notes in Computer Science: Vol. 7302. Advances in Knowledge Discovery and Data Mining (pp. 359-370).
- A. Ramachandran, L. Singh, E. Porter, and F. Nagle. (2012). "Exploring Re-Identification Risks in Public Domains." Proceedings of the Tenth Annual International Conference on Privacy, Security, and Trust (PST 2012). Best Student Paper.
- F. Nagle and L. Singh. (2009). "Privacy in Online Social Networks: Empirical Evidence from Facebook." Proceedings of the 2009 International Conference on Advances in Social Networks Analysis and Mining (ASONAM), Hellenic American University, Greece, July 2009.
- F. Nagle and M. Sutton. (2006). "Emerging Economic Models for Vulnerability Research." Proceedings of The Fifth Workshop on the Economics of Information Security (WEIS 2006), University of Cambridge, England, June 2006. Republished as Chapter 1 in Cyber Fraud: Tactics, Techniques, and Procedures, edited by James Graham, Rick Howard, Ralph Thomas, and Steve Winterfield, 2nd Edition. (2010). CRC Press, Auerbach Publications.

## **Cases, Notes, Teaching Notes:**

- F. Nagle. "Collaborate on the Core, Compete on the Edges," Harvard Business School Module Note 724-453, February 2024 [9].
- F. Nagle, S. Greenstein, M. Roche, N. Langburd Wright, and S. Mehta. "Copilot(s): Generative AI at Microsoft and GitHub," Harvard Business School Case 624-010, November 2023 [26].
- F. Nagle and M. Roche. "Copilot(s): Generative AI at Microsoft and GitHub," Harvard Business School Teaching Note 724-452, February 2024 [20].
- F. Nagle. "Does "Matter" Matter? Interoperability in the Smart Home Industry," Harvard Business School Case 724-431, February 2024 [4].
- F. Nagle, G. Riedel, W. Kerr, and D. Lane. "SolarWinds Confronts SUNBURST (A)," Harvard Business School Case 723-357, October 2022 (Revised September 2023) [20].
- F. Nagle, G. Riedel, W. Kerr, and D. Lane. "SolarWinds Confronts SUNBURST (B)," Harvard Business School Supplement 723-368, October 2022 (Revised September 2023) [6].
- F. Nagle and D. Lane. "SolarWinds Confronts SUNBURST A & B," Harvard Business School Teaching Note 724-368, February 2024 [13].
- F. Nagle. "Free and Open Source Software and Hardware," Harvard Business School Technical Note 724-380, September 2023 [4].
- F. Nagle, E. Altman, and A. Klopfenstein. "Strategic Innovation at the United Nations: A Network of Ecosystems," Harvard Business School Case 722-363, June 2022 (Revised August 2023) [20].
- F. Nagle, E. Altman, and K. Sennaar. "Strategic Innovation at the United Nations: A Network of Ecosystems," Harvard Business School Teaching Note 724-363, August 2023 [16].
- F. Nagle, G. Riedel, W. Kerr, and D. Lane. "Note on Cyberattacks and Regulatory Regimes," Harvard Business School Background Note 723-392, October 2022 [7].
- F. Nagle. "Nexleaf Analytics: Saving the World Using the Internet of Things," Harvard Business School Case 722-414, March 2022 (Revised July 2022) [21].
- F. Nagle. "Nexleaf Analytics: Saving the World Using the Internet of Things," Harvard Business School Teaching Note 724-381, September 2023 [19].
- F. Nagle and A. Sah. "The Wallet Wars: MetaMask," Harvard Business School Case 723-358, August 2022 [19].

#### **PRESENTATIONS**

#### **Invited Presentations**

- 2024 University of Colorado Boulder (scheduled), Harvard Business School.
- 2023 New York University, Harvard Business School, Center for Strategic & International Studies (CSIS), OpenForum Europe, Open Source Security Foundation (OpenSSF).
- 2021 Yeshiva University, Purdue University, White House Office of Science and Technology Policy (OSTP) Networking and Information Technology Research and Development Program (NITRD), National Institute of Standards and Technology (NIST) Information Security and Privacy Board (ISPAB), US Open Source Software Policy Actions Community Workshop, OpenUK Research and Report Workshop.
- 2020 Carnegie Mellon University, University of Pittsburgh, The Linux Foundation Board of Directors, Open Forum Europe.
- 2019 HBS Future Assembly, Boston University, OECD/HBS Business and Policy Perspectives on Digital Conference.
- 2018 Organization for Economic Cooperation and Development (OECD).
- 2017 Federal Trade Commission (FTC), NBER Productivity Seminar, Gould School of Law (USC), Duke Strategy Conference, Boston College, Harvard Business School, Boston University.
- 2016 Annenberg School for Communication (USC), INFORMS TIMES Emerging Scholars.
- 2015 University of California Los Angeles, University of Maryland, Harvard Business School, University of Pennsylvania, University of Southern California, Carnegie Mellon University, McGill University.
- 2014 Columbia University, Bocconi University, IESE Business School, Temple University, University College London, Boston College, NBER Productivity Seminar.

#### **Invited Panel Presentations**

Federal Trade Commission (FTC) "Business Practices of Cloud Computing" (2023)

United Nations (UN) General Assembly "Breaking the Scale Barrier: from SDG Innovation to SDG Achievement" (2023)

AOM Annual Conference "Understanding Organizational Governance in a Digitally Transformed World (PDW)" (2021)

Open Forum Europe "Europe's Digital Decade: Empowered by Open Source" (2020)

SMS Annual Conference "AI, Firm Strategy, and Organization: Cognitive Technologies Beyond the Hype"; Georgetown University John Carroll Weekend "FinTech and the Future"; Harvard Business School Reunion Weekend "Will Robotics and AI Lead Engineers to Rule the World?" (2019)

### **Conference Presentations**

"Labor Competition and Open Innovation." (formerly titled "The Role of Competition in Collaborative Innovation Leading to Public Goods.")

- Strategic Management Society Conference, Toronto, Canada, October 2023
- Center for Economic Studies (CESifo), University of Munich, Munich, Germany, October 2023<sup>iii</sup>

"Government Technology Policy, Social Value, and National Competitiveness."

- Academy of Management, Boston, MA, August 2023
- Munich Summer Institute, June 2021
- Society for Institutional & Organizational Economics (SIOE) Conference, Online, June 2020
- National Bureau of Economic Research (NBER) Summer Institute, Boston, MA, July 2018
- Open and User Innovation (OUI) Conference, New York, NY, August 2018
- Research Conference on Communications, Information, and Internet Policy (TPRC), Washington, DC, September 2018

"Do Programmers Pay to Be Open?"

- Open & User Innovation Conference, Hamburg, Germany July 2023<sup>iii</sup>

"The Value of Open Source Software."

- Harvard Business School Values and Valuation Conference, Boston, MA, March 2023<sup>iii</sup>

"Open Source Software and Global Entrepreneurship"

- OpenForum Academy, Brussels, Belgium, November 2023<sup>iii</sup>
- DRUID Conference, Copenhagen, Denmark, June 2022<sup>iii</sup>
- UN Internet Governance Forum, Katowice, Poland, December 2021<sup>iii</sup>
- Open & User Innovation Conference, Virtual, June 2021<sup>iii</sup>
- SMS Special Conference, Berkeley, CA, March 2020 Cancelled

"The Role of Social Capital in the U.S. Economy: Evidence from Employee-Level Professional Connections from LinkedIn."

- Strategy Research Forum, May 2021
- National Bureau of Economic Research (NBER) Summer Institute, Online, July 2020

"A Little Help From My Friends: The Impact of Receiving Assistance on Participation in Online Knowledge-Sharing Communities."

- Academy of Management Annual Conference, Online, August 2020<sup>iii</sup>
- Strategic Management Society Conference, Minneapolis, MN, October 2019
- Boston College Digital Innovation Workshop, May 2019

"Jack of All Trades and Master of Knowledge: The Role of Generalists in Novel Knowledge Integration."

- Academy of Management Annual Conference, Boston, MA, August 2019
  - Selected for Best Paper Proceedings

"Transaction Cost Economics in the Digital Economy: A Research Agenda."

- AOM Annual Conference, PDW on "Understanding Organizational Governance in a Digitally Transformed World", Online, July 2021.
- AOM Conference on Big Data and Managing in a Digital Economy, Surrey, UK, April 2018<sup>iii</sup>

"Security Investment as a Strategic Response."

- Workshop on the Economics of Information Security, San Diego, CA, June 2017<sup>iii</sup>

"Goldilocks and the Three Programmers: Unpacking the Relationship Between Online Contributions and Productivity at Work."

- Academy of Management Annual Conference, Boston, MA, August 2019
- Organization Science Winter Conference, Park City, UT, March 2018
- Israel Strategy Conference, Haifa, Israel, December 2017<sup>iii</sup>
- Academy of Management Annual Conference, Atlanta, GA, August 2017
- Collective Intelligence Conference, New York University, June 2017

"Learning By Contributing: Gaining Competitive Advantage Through Contribution to Crowdsourced Public Goods."

- European Academy of Management Conference, Reykjavik, IS, June 2018
  - o Best Conference Paper, Innovation Strategic Interest Group, Winner
- Strategic Management Society Conference, Houston, TX, October 2017
  - o Best Conference Paper, Nominated
  - o Best Conference Paper, Knowledge and Innovation Interest Group, Winner
- DRUID Society Conference on Entrepreneurship, Organization, and Innovation, New York University, June 2017
- Workshop on Information Systems and Economics (WISE), Dublin, IE, December 2016
- Academy of Management Annual Conference, Los Angeles, CA, August 2016
  - o Technology and Innovation Management Division Best Paper, Finalist
  - Selected for Best Paper Proceedings
- Open and User Innovation Conference, Harvard Business School, August, 2016
- Strategic Management Society Special Conference, Rome, IT, June 2016
- Organization Science Winter Conference, Park City, UT, February 2016

"The Translucent Hand of Managed Ecosystems: Engaging Communities for Value Creation and Capture."

- Academy of Management Annual Conference, Boston, MA, August 2019
- Wharton Technology and Innovation Conference, April 2019
- Strategic Management Society Conference, Houston, TX, October 2017<sup>iii</sup>
- Academy of Management Annual Conference, Los Angeles, CA, August 2016
- Open and User Innovation Conference, Harvard Business School, August, 2016

- Collective Intelligence Conference, New York University, June 2016<sup>iii</sup>

"Open Source Software and Firm Productivity."

- National Bureau of Economic Research (NBER) Summer Institute, Boston, MA, July 2016
- American Economic Association (AEA) Annual Meeting, Boston, MA, January 2015
- INFORMS Annual Meeting, San Francisco, CA, November 2014
- INFORMS Conference on Information Systems and Technology (CIST), November 2014
- Strategic Management Society Conference, Madrid, Spain, September 2014
  - o Best Conference Paper, Finalist
- 2nd Conference on Knowledge Commons, NYU Engelberg Center on Innovation Law & Policy, September 2014
- Academy of Management Annual Conference, Philadelphia, PA, August 2014
- Harvard Business School TOM Alumni Research Workshop, August 2014
- Open and User Innovation Conference, Harvard Business School, July 2014
- DRUID Society Conference on Entrepreneurship, Organization, and Innovation, Copenhagen Business School, June 2014
- ZEW Conference on the Economics of Information and Communication Technologies, Centre for European Economic Research, Mannheim, Germany, June 2014
- Charles River Conference, Harvard Business School, May 2014
- Consortium on Competitiveness and Cooperation (CCC), Boston University, April 2014

"Innovating without Information Constraints: Organizations, Communities, and Innovation When Information Costs Approach Zero."

- 2nd Conference on Knowledge Commons, NYU Engelberg Center on Innovation Law & Policy, September 2014

"Online Word of Mouth and Product Quality Disagreement."

- Academy of Management Annual Conference, Philadelphia, PA, August 2014
  - Selected for Best Paper Proceedings
- Workshop on Information Systems and Economics (WISE), Orlando, FL, December 2012<sup>iii</sup>
- Workshop on Information in Networks (WIN), NYU Stern, September 2012<sup>iii</sup>

"Us and Them: Predicting Firm Stock Performance via Social Media Sentiment About Competitors."

- Workshop on Information in Networks (WIN), NYU Stern, September 2013
- Academy of Management Annual Conference, Orlando, FL, August 2013
- 11th ZEW Conference on the Economics of Information and Communication Technologies, Center for European Economic Research, Mannheim, Germany, June 2013
- London Business School Trans-Atlantic Doctoral Conference, London, UK, May 2013

"Supply-Chain Based Network Effects in In Information Technology Adoption."

- Academy of Management Annual Conference, Orlando, FL, August 2013<sup>iii</sup>

#### PROFESSIONAL ACTIVITIES

#### **Professional Service**

Strategic Management Society Conference 2023 Extension Co-Organizer – "The Benefits and Challenges of Open Source: Fostering Innovation, Igniting Growth, and the Promise of Equitable Design"

Economics of Open Source Paper Development Workshop Co-Organizer (2023)

Organization Science Editorial Review Board (2022-present)

Ad-Hoc reviewer for Management Science, Organization Science, Strategic Management Journal, Administrative Science Quarterly, Strategy Science, Information Systems Research, Management Information Systems Quarterly, Research Policy, Journal of Law, Economics, and Organizations, Journal of Economics and Management Strategy, Academy of Management Discoveries, Academy of Management Perspectives, Strategic Entrepreneurship Journal, Telecommunications Policy, and Nature Computational Science

Program Committee Member, Workshop on the Economics of Information Security (2019, 2021, 2022)

Grant Reviewer for 2020 Digital Infrastructure Research sponsored by Ford Foundation, Sloan Foundation, Mozilla Foundation, and Open Society Foundation

Mentor for Industry Studies Association (ISA) Professional Development Workshop for Early Career Scholars (2020) and Academy of Management (AOM) Strategic Management Division Doctoral Consortium (2019)

Program Committee Member and Accessibility Chair, ACM Collective Intelligence Conference (2020)

Program Committee Member, ACM Collective Intelligence Conference (2019)

Associate Editor, International Conference on Information Systems (2017)

Program Committee for INFORMS Conference on Information Systems and Technology (CIST 2014 – 2017).

Symposium Session Organizer for Academy of Management (2016, 2017, 2019)

Symposium Session Organizer for Strategic Management Society (2019)

Session chair for Academy of Management (2016) and Strategic Management Society (2016, 2023)

Reviewer for Strategic Management Society Conference (2017, 2019), European Academy of Management (2018), Academy of Management Annual Conference for TIM and OCIS divisions (2013, 2014)

Grant reviewer for Canada Research Chairs (Canadian educational sponsorship program)

Grant reviewer for Social Sciences and Humanities Research Council (Canadian equivalent of the NSF)

Discussant for LBS TADC 2013, ZEW ICT 2013, DRUID 2014, ZEW ICT 2014.

Reviewer for Social Network Mining, Analysis and Research Trends: Techniques and Applications, ed. I-Hsien Ting.

Reviewer for Studies in Mining Social Networks and Security Information, edited by Zeki Erdem, Tansel Ozyer, Suheil Khoury and Jon Rokne.

### **Institutional Service**

Harvard Business School

- Strategy Seminar Series, co-coordinator 2019 2021
- Dissertation Committee Member (first placement): Jeffrey Gortmaker (current), Christopher Eaglin (Duke University, post-doc), Daniel Yue (Georgia Tech)
- Post-Doctoral Advisor: Manuel Hoffman, Samuel Boysel

Marshall School of Business, University of Southern California

- Marshall Digitopolis, school wide initiative supporting research on digital business, co-founder 2016 2018
- Strategy Faculty Recruiting Committee, member 2015 2016
- Seminar Series, coordinator 2016 2018
- Qualifying Exam Committee Member: Jihoon Hong (Marketing)

Harvard Business School (as a doctoral student)

- Student Advisory Group Member of committee that advises the doctoral office on student policies, 2012-2015
- Wyss Mentoring Award Committee Member of selection committee for faculty mentoring award, 2013-2015
- Student Mentor for incoming doctoral students in the TOM unit, 2013-2015
- Panel member for various presentations to incoming and accepted doctoral students at HBS

#### MEDIA COVERAGE AND INTERVIEWS

Media Coverage – Forbes, Politico, The Motley Fool, The Register, The San Diego Union-Tribune, HBS Working Knowledge, TechRepublic, ZDNet, Computer Weekly, Dark Reading, Le Monde Informatique, Security Magazine, DevOps, Enterprise AI, AI Trends

Interviews (Television) – Yahoo!Finance

Interviews (Written Media) - Dark Reading, The New Stack, ReadWrite, ITWeb

Interviews (Podcasts) – HBS Cold Call, CHAOSSCast, Security Ledger, The New Stack, Council on Foreign Relations – The World Next Week

### OTHER WORK EXPERIENCE

- 2018 Present Advisory Board Member, Nexleaf Analytics, Los Angeles, CA (unpaid)
- 2012 Present Technical Advisor, Multiple Big Data Analytics Startups, Various Locations
- 2018 2020 Advisory Board Member, Alphamatician, Boston, MA (unpaid)
- 2008 2011 Senior Security Consultant, Mandiant Inc. (acquired by FireEye), Alexandria, VA
- 2007 2008 Senior Consultant, Federal Security and Privacy, Deloitte & Touche LLP, Washington, DC
- 2005 2007 Assistant Director of Vulnerability Intelligence, iDefense, A VeriSign Company, Washington, DC
- 2003 2005 Security Analyst, iDefense, Inc., Reston, VA
- 2002 2002 Software Engineer Intern, Nokia Mobile Phones, Burlington, MA

### **RESEARCH AFFILIATIONS**

#### Harvard Business School

- Principal Investigator, OpenLab, 2022 present
- Co-Director HBS/Linux Foundation Core Infrastructure Initiative, 2018 present
- Faculty Affiliate, Digital, Data, and Design (D^3) Institute, 2022 present
- Faculty Affiliate, Managing the Future of Work Project, 2018 present
- Faculty Affiliate, HBS Digital Initiative, 2018 present
- Faculty Affiliate, Laboratory for Innovation Science, 2018 present

### Organization for Economic Cooperation and Development (OECD)

- Advisor to the Working Party on Innovation and Technology Policy, 2018 – present

### European Commission/OpenForum Europe

- Board of Experts Member for study on Impact of Open Source on Technological Independence, Competitiveness, and Innovation in Europe, 2019 – 2021

### University of Southern California

- Faculty Affiliate, Annenberg Research Network on International Communication, 2016 – present

- Faculty Affiliate, Annenberg Innovation Lab, 2017 2020 Faculty Affiliate, Lloyd Greif Center for Entrepreneurial Studies, 2016 2018

<sup>&</sup>lt;sup>i</sup> Unable to attend award ceremony, therefore not included on published list of finalists <sup>ii</sup> I received renumeration for this article through the Brookings Institution Center on Regulations and Markets <sup>iii</sup> Presented by a co-author