# Frank Nagle

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### **Education**

#### Harvard Business School, Boston, MA, USA

May 2015 (Expected)

- Doctor of Business Administration in Technology and Operations Management
- Committee: Shane Greenstein (co-chair), Marco Iansiti (co-chair), Carliss Baldwin, Karim Lakhani, Feng Zhu
- Dissertation Title: The Digital Commons: Tragedy or Opportunity? The Effect of Crowdsourced Digital Goods on Innovation and Economic Growth
- Research Topics: economics of digitization, technology strategy, open/user innovation

# Georgetown University, Washington, DC, USA

January 2011

- Master of Science in Computer Science, focus in Information Security
- Master's Thesis Title: Quantifying Privacy Breaches in Social Networks

#### City University, London, UK

September 2007

- Master of Science in International Business Economics, Graduated with Distinction
- Master's Thesis Title: High-Tech IPO's in the US and Europe Before, During, and After the Dot-Com Bubble

# Georgetown University, Washington, DC, USA

May 2004

Bachelor of Science in Computer Science, Cum Laude

### **Peer Reviewed Journal Publications**

• S. Greenstein, F. Nagle. (2014). "Digital Dark Matter and the Economic Contribution of Apache." *Research Policy* 43 (4), pp. 623-631. **Lead Article.** 

# **Working Papers**

- F. Nagle. "Crowdsourced Digital Goods and Firm Productivity: Evidence from Open Source Software." (In preparation for submission to *Management Science*, **Finalist for Best Conference Paper** at Strategic Management Society (SMS) Conference 2014)
- F. Nagle, C. Riedl. "Online Word of Mouth and Product Review Disagreement." (under review, selected for AOM Best Paper Proceedings)
- F. Nagle. "Stock Market Prediction via Social Media: The Importance of Competitors.

# **Work In Progress**

- K. McElheran, F. Nagle, S. Kahl. "Supply-Chain Based Network Effects in Information Technology Adoption." (In preparation for submission to *Strategic Management Journal*)
- F. Nagle. "Enhancing Absorptive Capacity via Contributing to Crowdsourced Digital Goods."

# **Book Chapters**

E. Altman, F. Nagle, and M. Tushman. (forthcoming). "Innovating Without Information Constraints: Organizations, Communities, and Innovation When Information Costs Approach Zero." In Oxford Handbook of Creativity, Innovation and Entrepreneurship, edited by Michael A. Hitt, Christina Shalley, and Jing Zhou. Oxford University Press.

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• E. Altman, F. Nagle, and M. Tushman. (2013). "Technology and Innovation Management." In <u>Oxford Bibliographies in</u> Management, edited by Ricky W. Griffin. New York: Oxford University Press.

# **Computer Science Publications**

- F. Nagle. (2013). "Privacy Breach Analysis in Social Networks." In <u>Studies in Mining Social Networks and Security Information</u>, 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, 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, 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 <a href="Cyber Fraud: Tactics">Cyber Fraud: Tactics</a>, Techniques, and Procedures, edited by James Graham, Rick Howard, Ralph Thomas, and Steve Winterfield, 2<sup>nd</sup> Edition. (2010). CRC Press, Auerbach Publications.

### **Honors and Awards**

- Wyss Award for Excellence in Doctoral Research, Harvard Business School, 2014
- Finalist for Best Conference Paper, Strategic Management Society Conference, 2014
- Selected for Best Paper Proceedings, Academy of Management, 2014
- Selected for participation in Academy of Management BPS Dissertation and Doctoral Consortium, 2014
- Selected for participation in Atlanta Competitive Advantage Conference Doctoral Consortium, 2014
- Selected for participation in the Consortium on Competitiveness and Cooperation Conference, 2014
- Selected for participation in Academy of Management TIM Doctoral Consortium, 2013
- Received Excellent / High Pass on HBS Doctoral Qualifying Exam, 2013

# **Presentations**

- "Crowdsourced Digital Goods and Firm Productivity: Evidence from Open Source Software"
  - o American Economic Association Annual Meeting, Boston, MA, January 2015 (upcoming).
  - o INFORMS Annual Meeting, San Francisco, CA, November 2014.
  - o INFORMS Conference on Information Systems and Technology (CIST), November 2014.
  - o NBER Productivity Seminar, October 2014.
  - Strategic Management Society Conference, Madrid, Spain, September 2014 (Finalist for Best Conference Paper).
  - 2<sup>nd</sup> Conference on Knowledge Commons, NYU Engelberg Center on Innovation Law & Policy, September 2014.
  - o Academy of Management Annual Conference, Philadelphia, PA, August 2014.
  - o Harvard Business School TOM Alumni Research Workshop, August 2014.
  - o 12<sup>th</sup> Open and User Innovation Conference, Harvard Business School, July 2014.
  - o DRUID Society Conference on Entrepreneurship, Organization, and Innovation, Copenhagen Business School, June 2014.
  - 12th ZEW Conference on the Economics of Information and Communication Technologies, Centre for European Economic Research, Mannheim, Germany, June 2014.
  - o Charles River Conference, Harvard Business School, May 2014.

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- o Consortium on Competitiveness and Cooperation (CCC), Boston University, April 2014.
- "Innovating without Information Constraints: Organizations, Communities, and Innovation When Information Costs Approach Zero"
  - o 2<sup>nd</sup> Conference on Knowledge Commons, NYU Engelberg Center on Innovation Law & Policy, September 2014.
- "Online Word of Mouth and Product Quality Disagreement"
  - o Academy of Management Annual Conference, Philadelphia, PA, August 2014 (selected for Best Paper Proceedings).
  - o Workshop on Information Systems and Economics (WISE), Orlando, FL, December 2012.
  - o Workshop on Information in Networks (WIN), NYU Stern, September 2012.
- "Stock Market Prediction via Social Media: The Importance of Competitors"
  - o Workshop on Information in Networks (WIN), NYU Stern, September 2013.
  - o Academy of Management Annual Conference, Orlando, FL, August 2013.
  - o 11<sup>th</sup> ZEW Conference on the Economics of Information and Communication Technologies, Center for European Economic Research, Mannheim, Germany, June 2013.
  - o London Business School Trans-Atlantic Doctoral Conference, London, UK, May 2013.
- "Supply-Chain Based Network Effects in In Information Technology Adoption"
  - o Academy of Management Annual Conference, Orlando, FL, August 2013.

# **Media Coverage and Interviews**

- "Stock Market Prediction via Social Media: The Importance of Competitors"
  - o Guarda, Dinis. "Social Investing and Considerations about the Stock Market Going Social." *The Motley Fool*, August 20, 2012.
  - o Copeland, Dave. "Harvard Researcher Uses Social Media to Predict Stock Market Volume." *ReadWrite*, February 8, 2012.

# **Teaching Experience**

#### Harvard Business School

- Analytics Teaching Fellow for pre-MBA program, 2011 2014. Head Teaching Fellow, 2013, 2014.
- o Technology & Operations Management Teaching Fellow for core MBA course, Fall 2013.
- o 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.
- o Computer Science I Teaching Assistant, Spring 2002 and Fall 2003.
- o Computer Science II Teaching Assistant, Spring 2003.
- o Introduction to Computer Science I Teaching Assistant, Fall 2002.

#### **Professional Service**

- Discussant for LBS TADC 2013, ZEW ICT 2013, DRUID 2014, ZEW ICT 2014.
- Reviewer for INFORMS Conference on Information Systems and Technology (CIST) 2014.
- Reviewer for Academy of Management Annual Conference for TIM and OCIS divisions (2013, 2014).
- Reviewer for Social Network Mining, Analysis and Research Trends: Techniques and Applications, ed. I-Hsien Ting.

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

# **Institutional Service**

- 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

# **Professional Experience**

**Multiple Big Data Analytics Startups** 

Technical Advisor

Mandiant Inc. (acquired by FireEye)

Senior Security Consultant

**Deloitte & Touche LLP** 

Senior Consultant, Federal Security and Privacy

iDefense, A VeriSign Company

Assistant Director of Vulnerability Intelligence

iDefense, Inc.

Security Analyst

**Nokia Mobile Phones** 

Software Engineer Intern

Boston, MA

April 2012 - Present Alexandria, VA

October 2008 – July 2010

Washington, DC

September 2007 – October 2008

Dulles, VA & London, UK

September 2005 – September 2007

Reston, VA

May 2003 – September 2005

Burlington, MA

June 2002- August 2002

# References

#### **Shane Greenstein**

Professor of Management and Strategy Kellogg School of Management Northwestern University 611 Leverone Hall 2001 Sheridan Road Evanston, IL 60208 847-467-5672 greenstein@kellogg.northwestern.edu

### Carliss Baldwin

Professor of Business Administration Harvard Business School 341 Baker Library Soldiers Field Boston, MA 02163 617-495-6673 cbaldwin@hbs.edu

#### Marco Iansiti

Professor of Business Administration Harvard Business School 441 Morgan Hall Soldiers Field Boston, MA 02163 617-495-6643 miansiti@hbs.edu

#### Karim Lakhani

Associate Professor of Business Administration Harvard Business School 433 Morgan Hall Soldiers Field Boston, MA 02163 617-495-6741 klakhani@hbs.edu