

MIT Industrial Liaison Program Faculty Knowledgebase Report

Financial Services Industry @MIT Workshop

April 11, 2017 1:00 pm - 6:45 pm

1:00pm Registration & Introduction

1:30pm IOT, Security, and Risk

Once again, much like in 1994, the world is on the brink of a new worldwide platform. The core idea is simple and transformative, connecting the physical to the virtual, the Internet of Things (IOT). Undoubtedly, a leap forward. However, from a security perspective there are significant challenges.

The recent attack on Ukraine's power grid highlighted the vulnerability of PLCs, SCADA, and industrial control systems, the backbone of industrial production. It was the first known cyber-attack resulting in power outages. Mirai was a more dramatic demonstration. The destructive tactics, techniques and procedures, could be replicated against any industrial control system. The session presents research and emerging trends to strengthen, secure, and quantify risk.

Abel Sanchez
Executive Director, [MIT Geospatial Data Center \(GDC\)](#)



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Dr. Abel Sanchez holds a Ph.D. from the Massachusetts Institute of Technology (MIT). He is the Executive Director of MIT's Geospatial Data Center, architect of "The Internet of Things" global network, and architect of data analytics platforms for SAP, Ford, Johnson & Johnson, Accenture, Shell, Exxon Mobil, and Altria. In cyber security, Dr. Sanchez architected impact analysis of large-scale cyber attacks designing Cyber Ranges for the Department of Defense (DOD). In password security, Dr. Sanchez led the design of a password firewall (negative authentication) for the Intelligence Advanced Research Projects Activity (IARPA) agency. In machine learning, addressing fraud detection, Dr. Sanchez designed a situational awareness framework that exploits different perspectives of the same data and assigns risk scores to entities for Accenture. He led the design of a global data infrastructure simulator, modeling follow-the-sun engineering, to evaluate the impact of competing architectures on the performance, availability and reliability of the system for Ford Motor Company. He has been involved in developing E-Educational software for Microsoft via their I- Campus Program and with establishing the Accenture Technology Academy, an online resource for over 200,000 employees. He has 10 years of experience with learning management systems and has made deployments in America, Asia, and Europe. He teaches MIT courses on cybersecurity, engineering computation, and data science and has produced over 150 educational videos.

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2:20pm

Blockchain for Finance – How Big Will the Impact Really Be?

Blockchain technology—where is it going? What are the business applications? Which country/economies will be “winners” in terms of opportunities, challenges and disruption. What will be the protocol for distributed ledgers-public and/or private? Where will the nodes be? Who will “own” them? Where is the talent? This change in the monetary system and transactions raises the issues of who will regulate, how will policy be formulated, and finally the social issue of financial inclusion.

Simon Johnson

Ronald A Kurtz (1954) Professor of Entrepreneurship,
Professor of Global Economics and Management, [MIT Sloan School of Management](#)



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Simon Johnson is the *Ronald A. Kurtz (1954) Professor of Entrepreneurship* at the MIT Sloan School of Management, where he is head of the Global Economics and Management group. In 2007-08 he was chief economist at the International Monetary Fund, and he currently co-chairs the [CFA Institute Systemic Risk Council](#). In February 2021, [Johnson joined the board of directors of Fannie Mae](#).

Johnson's most recent book, with Daron Acemoglu, [Power and Progress: Our 1000-Year Struggle Over Technology and Prosperity](#), explores the history and economics of major technological transformations up to and including the latest developments in Artificial Intelligence.

His previous book, with Jonathan Gruber, [Jump-Starting America: How Breakthrough Science Can Revive Economic Growth and the American Dream](#), explained how to create millions of good new jobs around the U.S. through renewed public investment in research and development. This proposal attracted [bipartisan support](#).

Johnson was previously a senior fellow at the Peterson Institute for International Economics in Washington, D.C., a cofounder of [BaselineScenario.com](#), a member of the Congressional Budget Office's Panel of Economic Advisors, and a member of the Federal Deposit Insurance Corporation's Systemic Resolution Advisory Committee. From July 2014 to early 2017, Johnson was a member of the Financial Research Advisory Committee of the U.S. Treasury's Office of Financial Research (OFR), within which he chaired the Global Vulnerabilities Working Group.

"[The Quiet Coup](#)" received over a million views when it appeared in *The Atlantic* in early 2009. His book [13 Bankers: the Wall Street Takeover and the Next Financial Meltdown](#) (with James Kwak), was an immediate bestseller and has become [one of the mostly highly regarded books on the financial crisis](#). Their follow-up book on U.S. fiscal policy, [White House Burning: The Founding Fathers, Our National Debt, and Why It Matters for You](#), won praise across the political spectrum. Johnson's academic research papers on long-term economic development, corporate finance, political economy, and public health are widely cited.

"For his articulate and outspoken support for public policies to end too-big-to-fail", [Johnson was named a Main Street Hero](#) by the Independent Community Bankers of America (ICBA) in 2013.

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3:10pm

Networking Break

Fueled by mobility, analytics, social media, cloud computing, and embedded devices, companies in every industry are mapping their way through the digital universe. Yet some firms are far outpacing others in their ability to drive new value from digital technology. Why? Drawing from his new book, *Leading Digital: Turning Technology into Business Transformation*, George shows how effective leaders can transform their businesses – customer engagement, operations, and business models — to continuously create new value from technology. This session will help leaders at all levels develop the skills needed to drive digital transformation in their organizations.

George Westerman

Senior Lecturer, [MIT Sloan School of Management](#)
Founder, [Global Opportunity Forum](#), MIT Office of Open Learning



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Dr. George Westerman is a Senior Lecturer and Principal Research Scientist at the MIT Sloan School of Management. He helps executives understand how to help their companies thrive in a world of fast-moving technological change. As a pioneering research on digital transformation, he co-authored the award winning book *Leading Digital: Turning Technology into Business Transformation*. Another book, *The Real Business of IT: How CIOs Create and Communicate Value*, serves as the basis for the MIT Sloan CIO Leadership Award program, which he co-chairs. His recent research on workforce learning, innovation culture, and AI transformation provides tangible insights to lead successful AI transformation.

George is a digital strategy advisor to the US Library of Congress, Board of Directors member for workforce non-profit WorkCred, and advisor to executives in numerous large corporations. Prior to earning a doctorate in innovation strategy from Harvard Business School, he gained more than a decade of experience in product development and technology leadership roles.

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4:20pm

How Big Data and Predictive and Prescriptive Analytics can Materially Affect the Financial Services Industry

Everyone wants more information. Banks want to know more about their customers, customers want a holistic optimization of all their financial services accounts, and risk managers want to assess the risk of a future breach before it happens. Join Dimitris Bertsimas to explore how predictive and prescriptive analytics can be applied across the financial services industry to optimize the experience for customers and businesses alike.

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Dimitris Bertsimas is the Boeing Professor of Operations Research, the codirector of the Operations Research Center, and faculty director of the Master of Business analytics at MIT. His research interests include optimization, machine learning and applied probability and their applications in health care, finance, operations management, and transportation. Bertsimas has coauthored more than 200 scientific papers and four graduate level textbooks. He is the editor in Chief of INFORMS Journal of Optimization. He has supervised 67 doctoral students and is currently supervising 25 others. Bertsimas is a member of the National Academy of Engineering, an INFORMS fellow, and has received numerous prestigious research and teaching awards. He holds an SM in applied mathematics and a PhD in operations research from MIT.

[View full bio](#)

5:10pm

Fintech Startup Lightning Talks

5:40pm

Networking Reception with Wine & Cheese