

**Charles Jason WOODARD**  
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Date of CV revision: 7 April 2015

**Citizenship:** American

## Education

|             |  |
|-------------|--|
| 1999 - 2006 | Ph.D., Information, Technology and Management<br>Harvard University  |
| 1993 - 1997 | A.B. (summa cum laude), Independent Concentration<br>in Information Technology and Society<br>Princeton University |

## Position(s) Held

|                     |   |
|---------------------|---|
| Jul 2006 - Now      | Assistant Professor<br>School of Information Systems<br>Singapore Management University |
| Jul 2005 - Jun 2006 | Lecturer<br>School of Information Systems<br>Singapore Management University            |
| Jun 2000 - Aug 2000 | Visiting Researcher<br>Software Group Strategy<br>IBM Corporation                       |
| Jul 1997 - Jun 1999 | Program Manager<br>Worldwide Java Marketing<br>IBM Corporation                          |
| Jun 1996 - Aug 1996 | Assistant Programmer<br>Internet Division (Atlanta Olympic Games)<br>IBM Corporation    |
| Jun 1995 - Aug 1995 | Technical Associate<br>Corporate Communications (www.ibm.com)<br>IBM Corporation        |
| Jun 1994 - Aug 1994 | Technical Associate<br>AT&T Bell Laboratories   |

## Thesis

1. "Architectural Strategy and Design Evolution in Complex Engineered Systems", Ph.D. Thesis, Harvard University, May 2006

## Journal Articles (Refereed)

1. "Incorporating Microblogging ('Tweeting') in Higher Education: Lessons Learnt in a Knowledge Management Course", by Thomas MENKHOFF, Yue Wah CHAY, Magnus Lars BENGTTSSON, C. Jason WOODARD, and Benjamin GAN, 2015, *Computers in Human Behavior*, in press
2. "On Empirical Validation of Compactness Measures for Electoral Redistricting and Its Significance for Application of Models in the Social Sciences", by Christine CHOU, Steven O. KIMBROUGH, Frederic H. MURPHY, John SULLIVAN-FEDOCK, and C. Jason WOODARD, 2014, *Social Science Computer Review*, pp. 534-543
3. "Design Capital and Design Moves: The Logic of Digital Business Strategy", by C. Jason WOODARD, Narayan RAMASUBBU, F. Ted TSCHANG, and V. SAMBAMURTHY, 2013, *MIS Quarterly*, pp. 537-564

## Journal Articles (Non-refereed)

1. "Managing Technical Debt: Insights from Recent Empirical Evidence", by Narayan RAMASUBBU, Chris F. KEMERER, and C. Jason WOODARD, 2015, *IEEE Software*, 22-25

## Conference Papers (Refereed)

1. "Modeling the Evolution of Generativity and the Emergence of Digital Ecosystems", by C. Jason WOODARD and Eric K. CLEMONS, 12/2014, *35th International Conference on Information Systems*, Auckland, New Zealand
2. "Orchestrating Service Innovation Using Design Moves: The Dynamics of Fit between Service and Enterprise IT Architectures", by Narayan RAMASUBBU, Jason WOODARD, and Sunil MITHAS, 12/2014, *35th International Conference on Information Systems*, Auckland, New Zealand
3. "Microblogging for Engaged Teaching and Learning", by Thomas MENKHOFF, Benjamin GAN, Jason WOODARD, and Yue Wah CHAY, 10/2014, *11th International Conference Applied Computing (AC 2014)*, Porto, Portugal
4. "Incorporating Microblogging ('Tweeting') in Higher Education: Lessons Learnt in a Knowledge Management Course", by Thomas MENKHOFF, Yue Wah CHAY, Magnus Lars BENGTTSSON, C. Jason WOODARD, and Benjamin GAN, 08/2014, *International Conference on Social Nets and New Media for Learning, Business, Collaboration, Innovation and Sustainable Development*, Nice, France
5. "Managing Complexity Through Selective Decoupling", by C. Jason WOODARD and Eric K. CLEMONS, 08/2014, *Academy of Management Annual Meeting*, Philadelphia, PA
6. "Architectural Control and Value Migration in Layered Ecosystems: The Case of Open-Source Cloud Management Platforms", by Richard TEE and C. Jason WOODARD, 06/2013, *35th DRUID Celebration Conference*, Barcelona, Spain
7. "The Evolution of Platform Architectures", by C. Jason WOODARD and Eric K. CLEMONS, 08/2012, *Academy of Management Annual Meeting*, Boston, MA
8. "Design Capital and Design Moves in Digital Architectures", by C. Jason WOODARD, Narayan RAMASUBBU, F. Ted TSCHANG, and V. SAMBAMURTHY, 08/2012, *Academy of Management Annual Meeting*, Boston, MA
9. "Using Interactive Evolutionary Computation (IEC) with Validated Surrogate Fitness Functions for Redistricting", by Christine CHOU, Steven O. KIMBROUGH, John SULLIVAN-FEDOCK, C. Jason

- WOODARD, and Frederic H. MURPHY, 07/2012, *Proceedings of the 14th Annual Genetic and Evolutionary Computation Conference (GECCO 2012)*, pp. 1071-1078
10. "Modeling Technology Evolution Using Generalized Genotype-Phenotype Maps", by C. Jason WOODARD and Eric K. CLEMONS, 07/2012, *6th Annual Workshop on Evolutionary Computation and Multi-Agent Systems (ECoMASS 2012)*, in *Companion Proceedings of the 14th Annual Genetic and Evolutionary Computation Conference (GECCO 2012)*, pp. 323-330
  11. "Four Perspectives on Architectural Strategy", by C. Jason WOODARD and Joel WEST, 12/2011, *32nd International Conference on Information Systems (ICIS 2011)*, Shanghai, China
  12. "From Primordial Soup to Platform-Based Competition: Exploring the Emergence of Products, Systems, and Platforms", by C. Jason WOODARD and Eric K. CLEMONS, 01/2011, *44th Hawaii International Conference on System Sciences (HICSS)*, Koloa, HI
  13. "Architectural Strategy for Digital Platforms: Technological and Organizational Perspectives", by Jason WOODARD and Joel WEST, 08/2010, *Academy of Management Annual Meeting*, Montreal, Canada
  14. "Strategic Responses to Standardization: Embrace, Extend or Extinguish?", by Jason WOODARD and Joel WEST, 08/2009, *Academy of Management Annual Meeting*, Chicago, IL
  15. "Architectural Dualities in Complex Systems: Components, Interfaces, Technologies and Organizations", by Jason WOODARD and Joel WEST, 06/2009, *DRUID Summer Conference*, Copenhagen, Denmark
  16. "Innovation in the Programmable Web: Characterizing the Mashup Ecosystem", by Shuli YU and C. Jason WOODARD, 12/2008, *2nd International Workshop on Web APIs and Services Mashups (Mashups '08)*, in *Workshop Proceedings of the 6th International Conference on Service Oriented Computing (ICSOC 2008)*, LNCS 5472, pp. 136-147
  17. "Architectural Control Points", by C. Jason WOODARD, 05/2008, *3rd International Conference on Design Science Research in Information Systems and Technology (DESRIST 2008)*, Atlanta, GA
  18. "Individual Capabilities and Institutional Conditions in Strategic Network Formation", by C. Jason WOODARD, 08/2007, *Academy of Management Annual Meeting*, Philadelphia, PA
  19. "Modeling Architectural Strategy Using Design Structure Networks", by C. Jason WOODARD, 05/2007, *2nd International Conference on Design Science Research in Information Systems and Technology (DESRIST 2007)*, Pasadena, CA
  20. "Architectural Control and Value Migration in Platform Industries", by C. Jason WOODARD, 08/2006, *Academy of Management Annual Meeting*, Atlanta, GA
  21. "The Pricing and Profitability of Modular Clusters", by Carliss Y. BALDWIN, Kim B. CLARK, and C. Jason WOODARD, 08/2004, *Academy of Management Annual Meeting*, New Orleans, LA
  22. "Modeling Product Development as a System Design Game", by C. Jason WOODARD, 06/2003, *North American Association for Computational Social and Organizational Science Conference (NAACSOS 2003)*, Pittsburgh, PA
  23. "Strategyproof Mechanisms for Ad Hoc Network Formation", by C. Jason WOODARD and David C. PARKES, 06/2003, *1st Workshop on Economics of Peer-to-Peer Systems (P2PEcon)*, University of California, Berkeley

## Chapters in Books

1. "Strategic Responses to Standardization: Embrace, Extend or Extinguish?", by C. Jason WOODARD and Joel WEST, in *Project-Based Organizing and Strategic Management*, edited by Gino CATTANI et al., *Project-Based Organizing and Strategic Management (Advances in Strategic Management, Vol. 28)*, Bingley, UK: Emerald, 2011, pp. 263-285.
2. "The Architecture of Platforms: A Unified View", by Carliss Y. BALDWIN and C. Jason WOODARD, in *Platforms, Markets and Innovation*, edited by Annabelle GAWER, *Platforms, Markets and Innovation*, Cheltenham, UK: Edward Elgar, 2009, pp. 19-44.

## Published Reports

1. "Using Hadoop and Cassandra for Taxi Data Analytics: A Feasibility Study", by Alvin Jun Yong KOH, Xuan Khoa NGUYEN, and C. Jason WOODARD, *Singapore Management University*, Singapore, 06/2010
2. "Spatio-Temporal Efficiency in a Taxi Dispatch System", by Darshan SANTANI, Rajesh Krishna BALAN, and C. Jason WOODARD, *Singapore Management University*, Singapore, 10/2008
3. "Exploring the Dynamics of High-Technology Product Diversity", by C. Jason WOODARD, *Complex Systems Summer School (CSSS 2002)*, *Santa Fe Institute*, Santa Fe, NM, 07/2002

## Working Papers

1. "The Evolution of Modular Product Architectures and the Emergence of Platform Ecosystems", by C. Jason WOODARD and Eric K. CLEMONS, 01/2013
2. "Local Coordination Under Bounded Rationality: Coase Meets Simon, Finds Hayek", by C. Jason WOODARD, 10/2010
3. "Platform Competition in Digital Systems: Architectural Control and Value Migration", by C. Jason WOODARD, 05/2008
4. "Competition in Modular Clusters", by Carliss Y. BALDWIN and C. Jason WOODARD, 12/2007, Harvard Business School Working Paper No. 08-042

## Conference Presentations

1. "Modeling the Evolution of Generativity and the Emergence of Digital Ecosystems", by C. Jason WOODARD and Eric K. CLEMONS, 11/2014, *INFORMS Annual Meeting*, San Francisco, CA
2. "Value Migration and Architectural Design Choices in Innovation Ecosystems: The Case of Cloud Computing", by Richard TEE and C. Jason WOODARD, 08/2013, *Academy of Management Annual Meeting*, Orlando, FL
3. "The Evolution of Modular Product Architectures and the Emergence of Platform Ecosystems", by C. Jason WOODARD and Eric K. CLEMONS, 07/2013, *Platform Strategy Research Symposium*, Boston, MA
4. "Architectural Control and Value Migration in Layered Ecosystems: The Case of Open-Source Cloud Management Platforms", by Richard TEE and C. Jason WOODARD, 06/2013, *Vienna Conference on Strategy, Organizational Design, and Innovation*, Vienna, Austria

5. "Value Migration and Architectural Design Choices in Innovation Ecosystems: The Case of Cloud Computing", by Richard TEE and C. Jason WOODARD, 03/2013, *Strategic Management Society Special Conference*, Lake Geneva, Switzerland
6. "Innovation and Value Migration in Layered Architectures: The Case of Cloud Orchestration Stacks", by Richard TEE and C. Jason WOODARD, 08/2012, *10th International Open and User Innovation Workshop*, Boston, MA
7. "Why Open Standards Boost Profits: The Simple Economics (and Complex Dynamics) of Value Migration in Layered Architectures", by C. Jason WOODARD, Carliss Y. BALDWIN, and Richard TEE, 08/2012, *Academy of Management Annual Meeting*, Boston, MA
8. "On the Evolution of Platform Architectures: Can Modularity and Loose Coupling Emerge Without Strategic Foresight or Intelligent Design?", by C. Jason WOODARD and Eric K. CLEMONS, 12/2011, *Workshop on Information Systems in Economics (WISE 2011)*, Shanghai
9. "Using Hadoop for Taxi Data Analytics", by Alvin Jun Yong KOH, Xuan Khoa NGUYEN, and C. Jason WOODARD, 05/2010, *CloudAsia 2010*, Singapore
10. "Optimal Routing Policy for Taxi Queuing", by Shih-Fen CHENG, Darshan SANTANI, and C. Jason WOODARD, 10/2008, *INFORMS Annual Meeting*, Washington, DC
11. "Architecture and Control in Digital Innovation Networks", by Jason WOODARD and Joel WEST, 09/2008, *NSF Workshop on Digital Challenges in Information Research*, Temple University
12. "Understanding and Improving a GPS-based Taxi System", by Darshan SANTANI, Rajesh Krishna BALAN, and C. Jason WOODARD, 06/2008, poster session, *6th International Conference on Mobile Systems, Applications, and Services (MobiSys 2008)*, Breckenridge, CO
13. "The Architecture of Platforms", by Carliss Y. BALDWIN and C. Jason WOODARD, 06/2008, *Conference on Platforms, Markets and Innovation*, Tanaka Business School
14. "Architecture and Strategy in Digital Ecosystems", by Anandhi BHARADWAJ, Ramnath K. CHELLAPPA, V. SAMBAMURTHY, and C. Jason WOODARD, 12/2007, *International Symposium of Information Systems (ISIS 2007)*, Indian School of Business
15. "Architectural Strategy for Systems Engineering", by C. Jason WOODARD, 03/2007, *Asia Pacific Systems Engineering Conference (APSEC 2007)*, Singapore
16. "Individuals and Institutions in Strategic Network Formation", by C. Jason WOODARD, 05/2004, *International Conference on Complex Systems (ICCS 2004)*, Boston, MA
17. "Interorganizational Network Formation and the Economics of Strategic Design", by C. Jason WOODARD, 04/2004, *CCC Doctoral Colloquium*, Emory University
18. "Adaptive Strategies for Network Games", by C. Jason WOODARD, 10/2003, *Workshop on Complex Agent-Based Dynamic Networks (CABDyN)*, University of Oxford
19. "Architectural Control and the Strategy of Design", by C. Jason WOODARD, 05/2002, *1st Lake Arrowhead Conference on Computational Social Science and Social Complexity*, Los Angeles, CA

### **Invited Academic Talks, Lectures and Panels**

1. "Unpacking the Dynamics of Platforms and Ecosystems (Discussant)", by C. Jason WOODARD, 08/2014, *Academy of Management Annual Meeting*, Philadelphia, PA
2. "The Processes of Ecosystem Governance (Discussant)", by C. Jason WOODARD, 07/2014, *Platform Strategy Research Symposium*, Boston, MA

3. "The Evolution of Modular Product Architectures and the Emergence of Platform Ecosystems", by C. Jason WOODARD, 07/2013, CMA Innovation Centre, Simon Fraser University
4. "Competition in Modular Clusters", by C. Jason WOODARD, 10/2007, School of Information Systems, Singapore Management University
5. "Architectural Control and Value Migration in Platform Industries", by C. Jason WOODARD, 02/2007, Heinz School of Public Policy and Management, Carnegie Mellon University
6. "Architectural Control and Value Migration in Platform Industries", by C. Jason WOODARD, 10/2006, Centre for Management of Science and Technology, National University of Singapore
7. "Architectural Strategy and Value Migration in Complex Modular Systems", by C. Jason WOODARD, 01/2005, School of Information Systems, Singapore Management University
8. "Architectural Strategy in Platform Industries", by C. Jason WOODARD, 10/2004, Lee Kong Chian School of Business, Singapore Management University
9. "Architectural Strategy in Platform Industries", by C. Jason WOODARD, 10/2004, School of Computing, National University of Singapore

### **Invited Talks**

1. "When and Why Does Technology Matter, and How Can You Contribute to the Business?", Credit Suisse, October 2011
2. "Organizational Challenges for Business Analysis and Engineering", Credit Suisse, March 2011

### **Teaching Cases**

1. C. Jason WOODARD and Christopher DULA, "Green Freight Asia (A): Driving the Adoption of Sustainable Supply Chain Practices" / "Green Freight Asia (B): Navigating Toward a Successful Partnership" / "Green Freight Asia (C): The Road Ahead", Case No. SMU-14-0007, 2014
2. C. Jason WOODARD and Kevin SPROULE, "Sentosa (A): Asia's Favourite Playground" / "Sentosa (B): Creating a Platform for Integrated Customer Engagement" / "Sentosa (C): Advancing Sentosa's Strategy Through Integrated Customer Engagement", Case No. SMU-13-0014, 2013
3. Kevin SPROULE and C. Jason WOODARD, "Circos: Tapping into Social Media" (A, B & C), Case No. SMU-12-0010, 2012
4. C. Jason WOODARD and Narayan RAMASUBBU, "Calypso Shipping Group" (A & B), 2011
5. C. Jason WOODARD, "Terra Firma Medical Systems" (A & B), 2010
6. Jan W. RIVKIN and Jason WOODARD, "Silverado" (A), Harvard Business School Case No. 703-441, 2003

### **Courses Taught - Undergraduate**

1. IS 101: Seminar on Information Systems Management, 2006 - 2014
2. IS 303: Architectural Analysis, 2005 - 2006
3. IS 480: IS Application Project, 2006 - 2014

4. IS 470: Guided Research in Information Systems, 2008 - 2011
5. MGMT 301: Business Study Mission (Silicon Valley), 2007

### **Thesis Student (Ph. D)**

1. Kevin STEPPE, SMU PhD in Information Systems (thesis committee member), 2015

### **Master Student Supervision**

1. OW Jie Wei, SMU MSc in Innovation (capstone project supervisor), 2013

### **Other Teaching**

1. Guest Lecturer, IDIS 603: Complexity and the Art of Public Policy, Master of Tri-Sector Collaboration (MTSC), Singapore Management University, Singapore, 10/2014
2. Guest Lecturer, NTU-Warwick Winter School: Introduction to Complexity and Complexity Science, Nanyang Technological University, Singapore, 02/2014
3. Guest Lecturer, 14th Trento Summer School: Intensive Course in Modularity and Design for Innovation, CEEL Program in Adaptive Economic Dynamics, University of Trento, Italy, 07/2013

### **Editorial Duties**

1. Editorial board member for Journal of Information Technology special issue on Strategic IT Alignment: Twenty Five Years On, 2014
2. Editorial board member for European Journal of Information Systems special issue on Transforming Decision-Making Processes: The Next IS Frontier, 2012
3. Ad hoc reviewer for European Journal of Information Systems, IEEE Transactions on Engineering Management, Information Systems Research, Journal of Institutional Economics, Journal of Management Information Systems, Journal of Product Innovation Management, Journal of Strategic Information Systems, MIS Quarterly, Management Science, Organization Science, Sloan Management Review, Strategic Management Journal and others, 2004 - Now
4. Ad hoc reviewer for Academy of Management Annual Meeting (BPS and TIM divisions), International Conference on Information Systems (ICIS), European Conference on Information Systems (ECIS), Hawaii International Conference on System Sciences (HICSS), 2004 - Now

### **Conference Program Committee and Advisory Services**

1. Associate Editor, E-Commerce track, International Conference on Information Systems, 2014
2. Co-organizer, Professional Development Workshop on "Architectural Strategy and Design Evolution in Business Ecosystems: Research Opportunities and Empirical Challenges, Academy of Management Annual Meeting (TIM Division; co-sponsored by BPS, ENT and OMT), 2013
3. Co-organizer, Showcase Symposium on "Modularity and Innovation: The Digital Revolution and Complex Product Innovation", Academy of Management Annual Meeting (OCIS Division), 2012

4. Associate Editor, E-Business and Competitive Strategy track, International Conference on Information Systems, 2012
5. Member, Scientific Committee, 5th European Conference on Management of Technology (EuroMOT 2011), 2011
6. Member, Program Committee, Digital Technologies, Management and Innovations Track, International Conference on Electronic Commerce (ICEC), 2009
7. Member, Program Committee, International Conference on Industrial Engineering and Engineering Management (IEEM), 2007 - 2008

## **Committees**

1. Member, SIS Undergraduate Programme Committee, SMU, 2008 - 2009
2. Member, Faculty Senate, SMU, 2007 - 2009

## **Other Services**

1. Faculty Advisor, SMU APEX Business-IT Global Case Challenge, 2010 - 2015
2. Technology Sector Coordinator, SMU MBA Programme, 2009
3. Faculty Advisor, Google Online Marketing Challenge, 2008

## **Grants**

1. Infocomm Development Authority of Singapore (IDA), Compute and Storage Resources for Open Cirrus Cloud Computing Research Testbed, March 2010 - June 2010

## **Awards, Recognition and Honors**

1. Best Reviewer Award, TIM Division, Academy of Management, 2014
2. Best Reviewer Award, TIM Division, Academy of Management, 2012
3. Best Reviewer Award, TIM Division, Academy of Management, 2010
4. Innovative Teacher Award, Singapore Management University, 2009
5. Most Promising Teacher Award, Singapore Management University (school nominee), 2007
6. George S. Dively Award, Harvard Business School (for distinguished doctoral research), 2003