July 2012 Confidential

## **Curriculum Vita**

# J. Christopher Westland, PhD CPA

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PROFILE	TECHNOLOGY VALUATION / ENTREPRENEURSHIP AND INNOVATION		
SUMMARY	<ul> <li>Experience bringing a wealth of technical IT, statistical &amp; risk management knowledge to bear in solving project management, security, insurance &amp; business continuation problems</li> </ul>		
Expert testimony and valuation for intellectual property, e-markets and accounting legal ca			
	Certified Public Accountant, specialist in forensics, risk & IT applications, Illinois license		
	Expert on business analytics, Internet marketing, search engine strategy, & e-markets		
	· Author of six books on valuation of technology, e-marketing, innovation & accounting risk assessment		
	Inventor of data mining and valuation methodologies for software costs, intangibles & technology IP		
	Effectively conveys highly technical concepts to non-specialists, directors, managers & investors		
	Executive Education at CEIBS (Shanghai), HKUST (Hong Kong), USC (US), VeMBA (HCMC) and others		

EDUCATION			
1987	Ph.D.	Computers & Information Systems	University of Michigan
			Dissertation: "Semantic Networks: A Stochastic Model of their Performance in Information Retrieval"; Chair:
			Manfred Kochen

1973	MBA	Accounting	Indiana University
1971	ВА	Mathematics (Physics & Chemistry minors)	Indiana University

**BACKGROUND** 

#### **PROFESSIONAL**

#### **BOOKS**

- 1. *Modern Path Analysis & Structural Equation Modeling*, CreateSpace, ISBN-13: 978-1468012187 ISBN-10: 1468012185 (softcover and Kindle e-reader edition)
- 2. Red Wired: China's Internet Revolution, London: Cyan (Marshall Cavendish), 2010 (with S. So)
- 3. *Global Innovation Management: A Strategic Approach* London: Palgrave / Macmillan 2008; Companion Websites at <a href="http://www.palgrave.com/business/westland/">http://www.palgrave.com/business/westland/</a>, Simplified Chinese translation by Chinese University of Science & Technology Press, Hefei, Anhui, China.
- 4. *Financial Dynamics: A System for Valuing Technology Companies*, New York: John Wiley & Sons, June 2003 with *Financial Dynamics software* (versions 1 and 2)
- 5. **Valuing Technology: The New Science of Wealth in the Knowledge Economy**, New York: John Wiley & Sons, 2002
- 6. *Global Electronic Commerce: Theory and Case Studies* (with Ted Clark) MIT Press, 2000, additional printings 2001-2; Chinese (simplified) from Fudan U. Press Shanghai August 2000; Chinese (full stroke) from Best Wise: Taipai, August 2000; republished by Universities Press (India) Limited for distribution in India, Bangladesh, Bhutan, Nepal, Sri Lanka, the Maldives, and Pakistan, paperback English, 2008
- 7. *Information Technology Risk: A Guide for Accountants and Auditors,* Hong Kong Society of Accountants monograph (HKICPA)

#### **EXPERTISE**

Electronic commerce and e-Markets, Innovation strategy, Technology and Innovation Management, Patent Strategy and Law, Technological Competitiveness of Nations, Business Intelligence, Valuation of technology assets and intangibles, Technology Risk Modeling and Valuation, Actuarial Models for Financial Analysis and Internal Auditing; IT Auditing; Audit Sampling; Electronic Medical Records and Medical Malpractice; Social networks and their economics

## CERTIFICATIONS AND ORGANIZATIONS

- Certified Public Accountant (Illinois License 065.035982)
- Illinois CPA Society, Audit & Assurance Services Committee
- Board of Directors, MIT e-Business Center, Boston, MA, USA
- Business Week Board of Advisors (Asia Finance)
- Beta Gamma Sigma (Business Honorary Society)
- Mensa International; American Mensa
- Turnaround Management Association, Illinois Chapter

## CONSULTING (SELECTED PROJECTS)

Research Corporation of University of Hawaii (Innovation strategy)

Forensis (expert testimony in numerous ongoing cases)

Rosenfeld Hafron Shapiro & Farmer LLP (Forensic Accounting)

The Emerging Markets Risk Advisory (technology risk modeling)

External Examiner for MBA programs at Hong Kong University

Borland (IS Governance)

Singapore Manufacturers Association (technology valuation)

Microsoft (Redmond WA; Dublin, Ireland; valuing technology / software cost modeling)

Aerospace Corporation (software cost modeling)

V-Tech (software business modeling and industrial design)

Intel (Rosettanet)

Motorola (mobile Internet markets)

IBM (electronic commerce)

Pacific Bell (software cost modeling and workflow)

#### RECENT KEYNOTE SPEECHES AND CONFERENCES

- Instructor, eBEREA Summer Camp (web site <a href="http://eberea.org/?q=content/summer-camp">http://eberea.org/?q=content/summer-camp</a>), Helsinki Finland, Aug 13-30, 2012
- 2. Keynote, The International Conference on Electronic Commerce 2012, Singapore, Aug 3-8, 2012
- 3. Keynote Speaker: International Conference on Mathematics in Engineering & Business Management, March 9-10, 2012, Chennai, India
- 4. Keynote Speaker, Joint Conference on Electronic Services and Business Intelligence, Chengdu, China, June 4-6, 2010
- Keynote Speaker, International Conference on Electronic-Business Intelligence, Kunming, China, December 16-18, 2010
- 6. Co-chair, 19th Americas Conference on Information Systems, Chicago, USA, August 2013
- 7. Co-chair, The International Conference on Electronic Commerce, Liverpool U.K. August 2011

#### **EXECUTIVE EDUCATION**

New York Institute of Finance, Valuation of Technology Ventures

Kellogg-HKUST, Information Technology Strategy

CIEBS, Information Technology Strategy

Tsinghua, Information Technology Strategy

## **CAREER HISTORY**

2007-Present	Professor, IDS	University of Illinois – Chicago
2007-2009	Head, IDS	University of Illinois – Chicago
2000-2007	Professor, ISMT (Adjunct Professor in 2008-9)	HK University of Science & Technology
2005, Spring	Visiting Professor (on Sabbatical Leave from HKUST)	Tsinghua University, Beijing
2002-2003	Visiting Professor (on Sabbatical Leave from HKUST)	Nanyang Technological University, Singapore
1997-2002	Head, ISMT	HK University of Science & Technology
1996-2000	Associate Professor with Tenure, ISMT	HK University of Science & Technology
1995-1996	Visiting Scholar, ISMT (on Sabbatical Leave from University of Southern California)	HK University of Science & Technology
1994-1996	Associate Professor with Tenure, IOM	University of Southern California
1988-1994	Assistant Professor, IOM	University of Southern California
1985-1988	Assistant Professor, Accounting	Eastern Michigan University
1981-1987	PhD Student, CIS / Accounting	University of Michigan
1977-1981	Database Admin & Security Manager	Rockwell International, Dallas Electronic Operations
1976-1977	IS Audit Manager	Republic Life, Dallas
1975-1976	Accounts Payable / Payroll Manager	Federated Department Stores, Dallas
1973-1975	Auditor, IS Consultant	Touche Ross, Chicago

## RESEARCH

## **EDITORIAL**

- 1. Information and Management (2011)
- 2. Electronic Commerce Research and Applications (Editor, 2006-present)
- 3. Social Science Research Network: Information Systems & eBusiness (2004- present)
- 4. International Review of Management (2004-present)
- 5. Management Science (1995-2002)
- 6. Information Systems Research (1996-2000)
- 7. Electronic Markets (2001-Present)
- 8. Telecommunications Systems (2003-Present)
- 9. International Journal of Online Marketing (2010 present)
- 10. International Journal of Electronic Commerce (1996-Present)

- 11. Electronic Commerce Research Journal (2001-Present)
- 12. Journal of End User Computing (1995-present)
- 13. MIS Review (2009-Present)
- 14. International Journal of Internet & Enterprise Management (2003-Present)
- 15. International Journal of E-Entrepreneurship and Innovation (2011)
- 16. E-Marketing in Developed and Developing Countries: Emerging Practices
- 17. Editor of Special Issue: ICEC 2011, ECRA
- 18. Editor of Special Issue: e-Markets in China, ECRA
- 19. Editor of Special Issue: Social Networks and Web 2.0, ECRA
- 20. Research Grants Council, Hong Kong

#### **COMPUTER LANGUAGES**

C#, C++, C, VB, .NET / WPF, Fortran, Java, SAS, SPSS, R, Mathematica, HTML, XAML

## REFEREED PUBLICATIONS

- Employing Transaction Aggregation Strategy to Detect Credit Card Fraud Expert Systems With Applications, Expert Systems With Applications, ESWA-D-12-00805 forthcoming 2012 (w. Montserrat Guillen and Sanjeev Jha)
- 2. The Adoption of Social Networking Technologies in Cinema Releases; Information Technology and Management, http://www.springerlink.com/content/g23qg84ru0p45122/ 2012
- Affective Technologies in Survey Research; Information Technology and Management, https://springerlink3.metapress.com/content/x52716m719127430/resourcesecured/?target=fulltext.pdf&sid=jahv2wfekzeq2nn4hpdzifyx&sh=www.springerlink.com 2012
- 4. Electrodermal Response in Gaming, Journal of Computer Networks and Communications, vol. 2011, Article ID 610645, 2011. doi:10.1155/2011/610645.
- 5. Lower Bounds on Sample Size in Structural Equation Modeling, Electronic Commerce Research and Applications, Dec 2010, PII:S1567-4223(10)00054-2, DOI: 10.1016/j.elerap.2010.07.003 (with software downloadable from Elsevier) in Top Ten Most Downloaded papers on ECRA
- Divorce Insurance: Mitigating the Adjudication Period Financial Crisis, Journal of Divorce & Remarriage, 52:1–38, 2011, ISSN: 1050-2556 print/1540-4811 online, DOI: 10.1080/10502556.2011.585084 (lead article)Data Mining for Credit Card Fraud, *Decision Support Systems* (with Sid Battacharyya and Sanjeev Jha) 2010 DOI: 10.1016/j.dss.2010.08.008
- 7. Critical mass and willingness to pay for social networks, *Electronic Commerce Research and Applications*, Dec 2009 (lead article, with comment by Andrew Odlyzko)
- 8. Incentives for Mobile-Online Gaming with Competing Electronic Cash Services, *International Journal of Electronic Business* (with E.W.K. See-To), 2009

- 9. Short-run Price-Performance Dynamics in Microcomputer Technologies, *Research Policy* (with E.W.K. See-To) volume 36, Issue 5, Pages 591-806, June 2007
- 10. The IS Core-XII: Positive Research in Information Systems, in *Communications of the AIS*, 2004 in volume 14
- 11. Why is it so difficult to put a value on technology?, *The International Journal of Entrepreneurship Education (IJEE)*, v. 3 (2004)
- 12. The Cost Behavior of Software Defects, *Decision Support Systems*, Volume 37, Issue 2, May 2004, Pages 229-238
- 13. What Electronic Commerce Can Learn from Securities Market Automation, in Tan, F. (ed.) *Advanced Topics in Global Information Management*, Idea Group, 2003 pp. 97-119
- 14. Preference ordering Cash, Near Cash and Electronic Cash, *Journal of Organizational Computing and Electronic Commerce*, 12(3), pp. 223-242, 2002
- 15. Transaction risk in electronic commerce, Decision Support Systems, (33)1 (2002) pp. 87
- 16. Electronic commerce and delays in market matching, *Journal of Organizational Computing and Electronic Commerce*, Volume 12 Number 2, Jun 2002, 121-132
- 17. Systems Complexity and the Cost of Errors in Software Development, Journal of Systems and Software, Volume 62, Issue 1, 1 May 2002, p. 1-10 (lead article)
- 18. Electronic Delivery of Convenience: A Service Innovation at the 7-Eleven Retail Chain in Hong Kong, Journal of Information Technology Cases and Applications (JITCA), 2002 (with Lange, Karl)
- 19. Electronic commerce and delays in market matching, *Journal of Organizational Computing and Electronic Commerce*, 2001
- 20. Ten Lessons that Electronic Commerce Can Learn from the Automation of Securities Exchanges, Journal of Global Information Management, Jan-Mar 2000
- 21. Privatization of Electrical Networks in Chile: A Case Study to Serve as a Model for Information Networks of Today *Journal of Information Technology Cases and Applications (JITCA)*, v. 2 (3) 2000
- 22. Modeling the Incidence of Post-Release Errors in Software, *Information Systems Research, September* 2000
- 23. Customer and Merchant Acceptance of Electronic Cash: Evidence from Mondex in Hong Kong, *International Journal of Electronic Commerce*, v 2(4) Summer, 1998, 5-26
- Impacts of Electronic Marketplaces on Product Prices: An Empirical Study of the AUCNET Case, International Journal of Electronic Commerce, Volume 4, Issue 2 December 1999 Pages: 45 -60 (with H.G. Lee and S. Hong)
- 25. Some Conditions for Cost Efficiency in Hypermedia, *Information Processing and Management*, v.34(2/3), 1998, 309-323
- 26. A Comparison of Shopping Experiences in Three Competing Digital Retailing Interfaces (w/ Grace Au), International Journal of Electronic Commerce, 1998
- 27. The Moscow Stock Exchange and The Shanghai Stock Exchange: Electronic Markets for Voucher Driven and State Managed Privatization of State Owned Enterprises, in *Business Information Technology Management: Closing the International Divide*, P. Banerjee, R. Hackney, G. Dhillon and R. Jain (eds.), Haranand, 1998
- 28. Electronic Cash in Hong Kong *Electronic Markets* v.7(2), p. 3 (with M. Kwok, J. Shu, T. Kwok and H, Ho)

- 29. Automation of China's Securities Markets (1997) Electronic Markets v.7(2), p. 3 (with 23. S.M. So)
- 30. A Rational Choice Model of Computer Network Security, *Journal of Electronic Commerce*, v.1(2), Winter 1996-97
- 31. The COCOMO 2.0 Software Cost Estimation Model, *American Programmer*, Cutter Information Corp., July 1996, and reprinted in Software Management, Fifth Edition, IEEE Computer Society Press, Washington D.C., 1996(with B.Boehm, B. Clark, E. Horowitz, R. Madachy and R. Selby), 1996
- 32. Cost Models for Future Software Life Cycle Processes: *COCOMO 2.0, Annals of Software Engineering,* Vol. 1, Software Process and Product Measurement, J.D. Arthur and S.M. Henry (eds.), J.C. Baltzer AG, Science Publishers, Amsterdam, The Netherlands, 1995, pp. 57-94 (with B. Boehm, B. Clark, E. Horowitz, R. Madachy and R. Selby)
- 33. Bayesian Alternatives to Neural Computing, *IEEE Transactions on Systems, Man and Cybernetics*, November 1994
- 34. Reporting Strategies for 'Events' Accounting, Journal of Information Systems, Fall 1994
- 35. Business Process Reengineering at Pacific Bell, *Planning Review*, May/June, 28-33(with) Housel, Thomas and Christopher Morris)
- 36. Congestion and Network Externalities in the Short Run Pricing of Information Systems Services, Management Science, v. 38(6) July 1992, 992-1099
- 37. CASE as Negotiation: Goals for Systems Design and Management of Group Learning in an Automated Systems Design Process, *Sistemica*, v.1(2), 131-143 (English version) 145159 (Spanish version)
- 38. Cinema Theory, Video Games, and Multimedia Production, in *Multimedia Computing: Preparing for the 21Century*, Reisman (ed.), Middletown, PA: Idea Group Publishing, December 1995
- 39. The Marginal Analysis of Investments in Information Technology, in Strategic and Economic Impacts of Information Technology Investment: Perspectives on Organizational Growth and Competitive Advantage, Mahmood, Banker and Kauffman (eds.), Middletown, PA: Idea Group Publishing, September, 55-81
- 40. Economics and Global Information Technology Education, in *Global Information Technology Education: Issues and Trends*, Lock (ed.), Middletown, PA: Idea Group Publishing, 419-450
- 41. CASE in Business and Administrative Information Systems, in *Computer-Aided Software Engineering:*Issues and Trends for he 1990s and Beyond, Bergin (ed.), Middletown, PA: Idea Group Publishing, 401-427
- 42. Allocated Cost Schedules to Control Equipment Usage `Bottlenecks', in *Tools and Techniques of Cost Estimating and Analysis*, W.R.Greer (ed.), New York: Springer-Verlag, 65-81
- 43. Economic Incentives for Database Normalization, *Information Processing and Management*, v. 28 (5), 647-662
- 44. Problem Vectorizability and the Market for Vector Supercomputing, *Information Processing and Management*, v. 27(5), 499-515
- 45. Collaboration and Productivity in Information Systems Research, *The Information Society* v.7(1), 33-50
- 46. Self-Organizing Executive Information Networks, Decision Support Systems, v.8, 41-53
- 47. Scaling Up Output Volumes Predicted by Information Systems Prototypes, *Association for Computing Machinery/TODS*, v. 15(3), 341-358
- 48. Assessing the Economic Benefits of Information Systems Auditing, Information Systems Research,

- v.1(3), September 1990, 309-24
- 49. Economic Constraints in Hypertext, *Journal of the American Society for Information Science*, v. 42(3),178-184
- 50. Topic Specific Market Concentration in the Information Services Industry: Evidence from the DIALOG Group of Databases, *The Information Society*, v. 6, 127-138
- 51. Parallel Renaissance in Neural Networks: A Bayesian Approach to Neural Learning, *Behavioral and Brain Science*, v.12, 1989,160 (with Manfred Kochen)
- 52. A Net Benefits Approach to Measuring Retrieval Performance, *Information Processing and Management*, v.25(5), 579-581

## **CURRENT EVENTS**

- 1. Review of "Red Wired: China's Internet Revolution" in the Montreal Review Magazine (www.themontrealreview.com), April 30, 2011
- 2. Editor for Electronic Commerce Research and Applications Special Issue on "Social Networks and Web 2.0" (Volume 9, Issue 4&5), with Bin Wang
- 3. Healthcare and the Coming Informatics Revolution, MIS Asia, http://mis-asia.com/opinion\_and\_blogs/bloggers/healthcare-and-the-coming-informatics-revolution-part-1/
- 4. ARRA's Impact on Healthcare Informatics, MIS Asia in <a href="http://mis-asia.com/opinion\_and\_blogs/bloggers/healthcare-and-the-coming-informatics-revolution-part-2/">http://mis-asia.com/opinion\_and\_blogs/bloggers/healthcare-and-the-coming-informatics-revolution-part-2/</a>
- 5. Professor Says Divorce Insurance Possible, by Timothy Kirn, Insurance Journal, December 11, 2009, http://www.insurancejournal.com/news/national/2009/12/11/105912.htm
- Turning instant messaging into a gold mine (Editor's Choice), Global Times [13:04 June 15 2009], with S. So (http://business.globaltimes.cn/industries/2009-06/437042.html)
- 7. Sina's Sino-news formula made it number one, Global Times, 20 Monday May 25, 2009, with S. So (http://business.globaltimes.cn/industries/)
- 8. Google's China odyssey (Editor's Choice), The Global Times [14:01 June 08 2009] with S. So (http://business.globaltimes.cn/editor-picks/2009-06/435364.html)
- 9. Cold Wars and Search Wars, MIS-Asia (China's Internet 36 March 2009 MISASIA) <a href="http://mis-asia.com/opinion\_and\_blogs/bloggers/healthcare-and-the-coming-informatics-revolution-part-1/comment">http://mis-asia.com/opinion\_and\_blogs/bloggers/healthcare-and-the-coming-informatics-revolution-part-1/comment</a>
- 10. Shanda: The art of getting paid, Global Times (Editor's Choice), [18:39 June 22 2009] http://business.globaltimes.cn/editor-picks/2009-06/438710.html

## RESEARCH IN PROCESS

- Complexity-Effect Resolution Trade-off in SEM Path Model Estimation, Journal of Business & Economic Statistics, 2012
- 2. Fisher Information Loss in Likert Mappings, Journal of Business & Economic Statistics, 2012
- 3. Comparison of Password Strength with Western vs. Chinese Character Sets (with Andy Hung and Yang Cheng)
  - J. Christopher Westland

- 4. Market Microstructure and Pricing in Chinese Online Peer-to-Peer Lending (with Zhangxi Lin)
- Note on Lower Bound in SEM when Data is Likert-scaled; SSRN http://papers.ssrn.com/sol3/Papers.cfm?abstract\_id=2043607
- 6. Information Technology Auditing (book with software), Kindle e-book
- 7. Evidence for Experience Curve Management through Analogical Learning in Electronic Cash, *IEEE Transactions on Engineering Management* (EM-09-0394) in second round of reviews (with E. See-to)
- 8. Insuring Trust in e-Markets, to Information Systems Research

#### **TEACHING CASE STUDIES**

- 1. Electronic Delivery of Convenience: A Service Innovation at the 7-Eleven Retail Chain in Hong Kong, 2002 (with Lange, Karl)
- 2. Privatization of Electrical Networks in Chile: A Case Study to Serve as a Model for Information Networks of Today, 2000
- 3. The Moscow Stock Exchange, 1997
- 4. The Shanghai Stock Exchange, 1997 China's Brokerage Rooms, 1997
- 5. Electronic Securities Trading at the Bolsa de Comercio de Santiago, 1994
- 6. Chilgener: Pricing of Network Services, 1994
- 7. Philippines Telephone & Telegraph, 1994
- 8. Information Systems Security at McDonnell Douglas Aerospace Information Systems, February 1993 and videotape by same title, 1993

## SELECTED TRADE PUBLICATIONS

- 1. Valuing Tech, Benchmark, October 2003, Vol. 1, No. 10, p. 34-40
- 2. The Internet's Challenge to Accounting, The Hong Kong Management Accountants, Fall
- 3. Cyberport is the wrong way to promote E-commerce, The Hong Kong Economic Journal, Mar 29, 1999
- 4. Cyber Wet-Markets: an idea whose time has come?, The Hong Kong Economic Journal, May 3, 1999 Knowledge
- 5. Workers and Hong Kong's E-commerce Infrastructure, The Hong Kong Management Accountants, Spring 1999
- 6. E-Commerce Primer, Computer Careers Magazine, 1997
- 7. E-Commerce Success Secrets, Computer Careers Magazine, 1997
- 8. The Office Suites, Computer Careers Magazine, 1997
- 9. Internet Investing, Computer Careers Magazine, 1997
- 10. Taguchi Methods in Software Engineering, USC Computer Science Technical Report
- 11. Competing in the World's Computer Market, Scientific American, November 1990
- 12. Short Circuiting Computers, New York Times, October 30 1990
- 13. Tinbergen Lectures on Organization Theory, Interfaces, v. 19(6), November-December

## PH.D. STUDENTS

- 1. Poornima Krishnan (graduated 2010)
- 2. Sanjeev Jha (graduated 2009), University of New Hampshire
- 3. Kirill Yurov (graduated 2009), Nova University
- 4. Carsten Paasch (graduated 2008) Senior VP Information Security, Standard Chartered Bank
- 5. Wendy Hui, (graduated 2005), Nottingham University
- 6. Eric See-to (graduated 2005).Research Fellow. University of Lancaster Business School, U.K.
- 7. Hilton Chan, (graduated 2000), Hong Kong Police, Head of Special Investigations
- 8. Eric Law, (graduated 1999) CEO, Boncle, Inc. (secure internet platforms) Santa Clara, CA