

FLORENCE D. HUDSON

SVP and Chief Innovation Officer

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Key Information and
Communications
Technology Trends for the
Research & Education
Community:
Appendix, Works Consulted

Works Consulted (Page 1 of 3)

- 3ders.org, "AT Kearney: 3D Printing Market to Grow to \$17.2B by 2020." 25 August 2015.
- ABI Research, "Data Captured by IOT Connections to Top 1.6 Zettabytes in 2020, as Analytics Evolve from Cloud to Edge." 9 April 2015.
- Accenture, "Digital Business Era: Stretch Your Boundaries." 2 February 2015.
- American College & University Presidents' Climate Commitment
- BizTech Reports, "Cognitive Computing Market is Expected to Reach \$13.7 Billion By 2020, Allied Market Research Finds." 22 June 2015.
- The Brookings Institute, "A Cure for Health Care Inefficiency? The Value and Geography of Venture Capital in the Digital Health Sector." 10 September 2015.
- Business Insider, "Billions of Dollars are Set to Flow into These 7 Areas of Tech in 2015." 18 December 2014.
- Business Insider, "The Internet of Everything: 2015." 8 April 2015.
- Carnegie Mellon University News, "CMU Leads Google Expedition to Create Technology for 'Internet of Things'." 9 July 2015.
- 10. Chicago Inno.com, "UIUC Gets \$1M from Google of Fund Mobile Programming and IOT Initiatives." 7 August 2015.
- 11. CIO Journal, "Tech Trends 2015: An Overview." 3 February 2015.
- 12. Cisco, "Cisco Visual Networking Index: Forecast and Methodology, 2014-2019 White Paper." 27 May 2015.
- 13. Cisco IBSG, "The Internet of Things: How the Next Evolution of the Internet Is Changing Everything," April 2011.
- 14. Consultantov.uk, "Smart City Market Revenues to Grow to 2 Trillion by 2020," 27 August 2015.

- Deloitte, "Tech Trends 2015: The Fusion of Business and IT." 3 February 2015.
 Deloitte, "2015 Global Life Sciences Outlook: Adapting in an Era of Transformation." January 2015.
- 18. Deloitte, "Healthcare and Life Sciences Predictions 2020." November 2014.
- 19. Digitalist Magazine, "Gartner's Top 10 Strategic Technology Trends for 2015 [Webinar Recap]." 26 January 2015.
- Edison Electric Institute, "Transforming America's Power Industry: The Investment Challenge 2010-2030." November 2008.
 EDUCAUSE, "Core Data Service Almanac." July 2015.
- 22. EDUCAUSE, "Trend Watch 2015: Influential IT Directions in Higher Education." 20 March 2015.
- 23. EDUCAUSE, "Research Computing in the Cloud: Functional Considerations for Research." 15 July 2015.
- 24. EDUCAUSE, "Top 10 IT Issues, 2015: Inflection Point." 12 January 2015.
- 25. Forbes, "Gartner's Hype Cycle for 3-D Printing, 2015: Medical Products Driving Market Growth." 28 August 2015.
- 26. Forbes, "Self-Driving Cars Compete with the IOT for the Title of Most Hyped Technology, Big Data Out." 18 August 2015.
- 27. Forbes, "The Internet of Things Is About the Data, Not Things." 30 July 2015.
- 28. Forbes, "Internet of Things: IOT Tech Landscape and Rankings New Report." 30 July 2015.
- 29. Forbes, "The Internet of Things: The Great Frontier." 21 July 2015.
- 30. Forbes, "Roundup of Analytics, Big Data, and Business Intelligence Forecasts and Market Estimates, 2015." 25 May 2015.
- 31. Forbes, "2015 Roundup of 3D Printing Market Forecasts and Estimates." 31 March 2015.
- 32. Forbes, "What's the Future of Cognitive Computing? IBM Watson." 23 February 2015.
- 33. Forbes, "6 Predictions for the \$125B Big Data Analytics Market in 2015." 11 December 2014.
- 34. Forbes, "IDC: Top 10 Technology Predictions for 2015." 2 December 2014.
- 35. Forbes, "7 Trends Driving Global Health and Life Sciences in 2015." 14 November 2014.
- 36. Forbes, "Gartner's Top 10 Strategic Technology Trends for 2015." 21 October 2014.
- 37. Forbes, "Gartner Predicts Top 2015 and Beyond Trends for Technology, IT Organizations, and Consumers." 9 October 2014.
- 38. Forbes, "Roundup of Analytics, Big Data; Business Intelligence Forecasts and Market Estimates, 2014." 24 June 2014.
- 39. Forbes, "Smart Cities A \$1.5T Market Opportunity." 19 June 2014.
- 40. Forbes, "Internet of Things Page."



Works Consulted (Page 2 of 3)

- 41. Forrester, "Blog Category: Predictions 2015." 14 December 2014. 42. Frost & Sullivan, "World's Top Global Mega Trends to 2025 and Implications to Business, Society and Cultures." 30 May 2014. 43. Frost & Sullivan, "Top 20 Global Mega Trends and their Impact on Business, Cultures, and Society." July 2014. 44. Frost & Sullivan, "Strategic Opportunity Analysis of the Global Smart City Market." 30 August 2013.
 45. Gartner, "Gartner's 2015 Hype Cycle for Emerging Technologies Identifies the Computing Innovations that Organizations Should Monitor." 18 August 2015. 46. Gartner, "Gartner's Hype Cycles for 2015: Five Megatrends Shift the Computing Landscape." 12 August 2015. 47. Gartner, "Cybersecurity Scenario 2020 Phase 2: Guardians for Big Change," 20 July 2015. 48. Gartner, "Top 10 Strategic Technology Predictions for 2015 and Beyond." 18 February 2015. 49. Gartner, "Top 10 Strategic Technology Trends 2015." 4 February 2015. 50. Gartner, "Agenda Overview for Energy and Utilities, 2015." 5 January 2015. 51. Gartner, "Gartner Says 4.9B Connected 'Things" Will be in Use in 2015."11 November 2014. Gartner, "Gartner Identifies the Top 10 Strategic Technology Trends for 2015." 8 October 2014.
 Gartner, "Smart Grid Key Initiative Overview." 23 April 2014. 54. GreenTechMedia, "Smart Grid Market to Surpass \$400 Billion Worldwide by 2020." 13 August 2013. 55. The Guardian, "GDP Projections from PwC: How China, India and Brazil Will Overtake the West by 2050." 56. thehackernews.com 57. Hewlett Packard, "From the Internet of Things, a Business Intelligence Bounty." April 2015. 58. IBM, "Your Cognitive Future: How Next Gen Computing Changes the Way We Live and Work." January 2015. 59. IDC, "IDC Predicts Key Trends for 2015 - An Explosion of Innovation." 25 February 2015. 60. IDC, "IDC Predictions 2015: Accelerating Innovation – and Growth – on the 3rd Platform." 2 December 2014. 61. IDC, "IDC FutureScape: Worldwide Internet of Things 2015 Predictions." December 2014. 62. IDC, "Thwarting Cyberthreats and Attacks Against Healthcare Organizations." November 2014. 63. IDG, "2015 US State of Cybercrime Infographic." 15 July 2015.
 64. IDTechEx, "Wearable Technology 2015-2025: Technologies, Markets, Forecasts." August 2015. 65. IMS Institute for Healthcare Informatics, "Riding the Information Technology Wave in Life Sciences: Priorities, Pitfalls and Promises." March 2014. 66. Information Age, "Deloitte's Top 8 Business Technology Trends of 2015." 11 March 2015. 67. IOT Solutions World Congress, "Evolving Telemedicine Strategies are Expanding the Boundaries of Healthcare Models." 14 July 2015.

 68. IOT Solutions World Congress, "Utilities May Save 80% Deployment Costs Automating Smart Meter Deployments." 10 July 2015. 69. IOT Solutions World Congress, "IOT/M2M Solutions in Hospitals and Healthcare, and the Importance of Secure Remote Management." 1 July 2015. 70. IOT University, "What's Next for IOT?" 29 September 2015. 71. IOT University, "Internet of Things (IOT): More than Smart Things." 29 September 2015. 72. IOT University, "Internet of Things (IOT) The Third Wave?" 29 September 2015. 73. IOT University, "Connecting the Unconnected. Securing the Internet of Things." 24 July 2015. 74. KDNuggets, "Wikibon Big Data Vendor Revenue and Market Forecast." April 2015. 75. KM World, "Cognitive Computing: Real-World Applications for an Emerging Technology." 1 September 2015.
 - LexInnova, "Internet of Things: Patent Landscape Analysis." April 2015.
 Machine Magazine, "Top 10 Predictions for IOT and M2M in 2015." 2 January 2015.

76. KPMG, "Technology Industry Outlook Survey: A Tale of Two Disruptions: Tech Innovation and Cybersecurity." June 2015.

79. Markets and Markets, "Cyber Security Market Worth \$170.21 Billion by 2020."



Works Consulted (Page 3 of 3)

- 80. Marketwatch, "This 'Smart' City is Completely Wired to Improve Services." 2 September 2015.
- 81. Marketwatch, "3D Printing Marketing is Expected to Grow at a CAGR of 19.3% from 2015 to 2020; Hexa Research Inc." 31 August 2015.
- 82. Marketwatch, "Impact Report on Big Data Analytics Initiatives Unveils ROI, Trends." 1 September 2015.
- 83. McKinsey, "An Executive's Guide to the Internet of Things." August 2015.
 84. McKinsey "Unlocking the Potential of the Internet of Things." June 2015.
- 85. McKinsey, "Disruptive Technologies: Advances That Will Transform Life, Business, and the Global Economy," May 2013.
- 86. MedGadget, "Medical Device Technologies Market: Global Industry, Trends and Forecast, 2015-2025: FMI Estimate." 27 July 2015.
- 87. Microsoft, "Microsoft Business Predictions for 2015: IOT Matures, Cybersecurity Bulks Up, and Machine Learning Gives Business a Big Advantage," 17 December
- 88. Modern Machine Shop, "7 Things to Know About the Internet of Things and Industry 4.0." 1 September 2015.
- 89. National Institutes of Health. "The Precision Medicine Initiative Cohort Program Building a Research Foundation for 21st Century Medicine." September 2015.
- 90. npr.orp
- 91. politico.com
- 92. PwC, "Cybersecurity Takes Center State Yet Progress Is Interrupted, Finds 2015 US State of Cybercrime Survey." 16 July 2015.
- 93. Red Mountain Insights, "3D Printing Market Potential: Changing the Face of Product Development, Sales and Manufacturing." August 2015.
- 94. SDX Central, "If You Think Security Breaches Are Bad Now... Just Wait for IOT to Emerge at Scale." 4 September 2015.
- 95. Software Strategies Blog, "Gartner's Top 10 Strategic Technology Trends for 2015." 22 October 2014.
- 96. spectrum.ieee.org
- 97. Statista.com, "Worldwide Information Technology (IT) Spending Forecast from 2005 to 2015."
- 98. TechCrunch, "6.1B Smartphone Users Globally by 2020, Overtaking Basic Fixed Phone Subscriptions." 2 June 2015. 99. TechCrunch, "The Enterprise in 2015." 25 December 2014.
- 100. technologyreview.com
- 101. Technossus, "The Top 10 Enterprise Technology Prediction Roundups for 2015." 9 January 2015.
- 102. U.S. Department of Agriculture, Economic Research Services, "Projected Real GDP Values." 18 December 2014.
- 103. What it All Boils Down To, "The Distance Between Hype and Adoption, 2015 Edition." 21 August 2015.
- 104. What's the Big Data, "Top 2015 IT Predictions from Forrester Research." 2 December 2014.
- 105. The White House, Office of the Press Secretary, "Fact Sheet: Administration Announces New 'Smart Cities' Initiative to Help Communities Tackle Local Challenges and Improve City Services." 14 September 2015.
- 106. Wikipedia, "Cloud Computing," 30 September 2015.
- 107. The World Bank, "GDP."
- 108. World Economic Forum, "Are You Ready for the Internet of Everything." 15 January 2014.
- 109. ZDNet, "The Internet of Things and Big Data: Unlocking the Power." 2 March 2015.

