Panel: Artificial Intelligence and The Future of Work

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ABSTRACT

Advancement in AI, robotics, machine learning, and automation has started to replace many structured, routine, and repetitive jobs. McKinsey Global Institute's report (2017) estimates that by 2030, automation may displace between 400 million and 800 million individuals and these individuals will need to switch job categories and learn new skills. MIT's Daron Acemoglu and Boston University's Pascual Restrepo (2017) find that each additional robot in the US economy reduces employment by 5.6 workers, and every robot that is added to the workforce per 1,000 human workers causes wages to drop by 0.25 to 0.5 percent. In the past, technology advancement has consistently generated more new jobs than it destroys. Will it be the same this time? The three panelists will present their views on the topic from different perspectives.

Mary Lacity: My coauthors and I have always answered the question, "Will automation technologies like AI kill jobs" with actual data. For the last four years, we have conducted interviews in over 100 enterprises to develop case vignettes and administered seven surveys on the affects of robotic process automation and cognitive automation on employment. Our interviews overwhelming found that only tasks within jobs were automated; most enterprises use these tools to automate dreary, repetitive tasks so that they can redeploy human talent to more value-added tasks. My colleague Leslie Willcocks from the London School of Economics describes the phenomenon as "enterprises use automation to take the robot out of the human". Among our case vignettes, no layoffs resulted from automation; however, scaled implementations did slow recruiting or ratchet down headcount through natural attrition or early retirements. Among our seven surveys of larger sample sizes, the most common uses of Robotic Process Automation (RPA) and Cognitive Automation (CA) were to redeploy labor to value-added tasks within the same work unit, to take on more work without adding more services, or to redeploy employees to other work units. However, our most recent survey did find 22 percent of enterprises laying off employees as a consequence of service automation. These numbers are well below the figures projected by other studies based on modeling. We have not considered all the new jobs that will be created by these technologies, thus the overall effects of AI on employment will not likely be as high as predicted by scholars such as Frey and Osborne. Overall, we believe strongly in human agency; Leaders decide how technologies will be used—technology does not merely happen to them in some pre-determined way. Our research finds that when leaders use technologies to uplift employees, they gain better business outcomes. Our aim is to share these early successes with other thoughtful managers. In this manner, we see academic research as positively influencing practice.

Vicki Sauter: Thirty years ago, AI was disrupting the field in the form of expert systems (also known as knowledge based systems and reasoning systems). The goal was to improve both effectiveness and efficiency of support to decision makers. By today's standards, these early forms of artificial intelligence were simplistic and expensive (they required expensive, dedicated technology). Although some features of expert systems were integrated into Decision Support System (DSS), discussion of, and interest in, expert systems dwindled. Vicki will discuss the historical barriers to adoption of expert systems. She will discuss how those earlier barriers should be revisited in today's environment and from the perspective of business.

Keng Siau: Artificial Intelligence Age is here! In 2016, Google DeepMind's AlphaGo beat 18-time world champion Lee Sedol in the abstract strategy board game Go, which has 300 times the number of plays when compared to chess. Both AlphaGo Zero and AlphaZero have demonstrated the huge advancement and enormous potential of artificial intelligence and deep learning. Further, technologies for self-driving cars, drones, and home robots are advancing exponentially. AI is now part of our everyday life, and its encroachment is expected to intensify. Keng will discuss the short-term and long-term

implications of AI on the future of work and the future of humanity. Keng will also present the issue of trust in AI and the challenges facing higher education in the age of AI.

Keywords

Artificial Intelligence, Robotics, Machine Learning, Automation, Robotic Process Automation, Cognitive Automation, Expert Systems, Trust, Job Loss/Job Gain, Retraining

PANELISTS

1.   MARY LACITY

Mary C. Lacity is Curators' Distinguished Professor at the University of Missouri-St. Louis. She has held visiting positions at MIT CISR, The London School of Economics, Washington University, and Oxford University. She is a Certified Outsourcing Professional ®, Industry Advisor for Symphony Ventures, and Co-editor of the Palgrave Series: Work, Technology, and Globalization. Her research focuses on the delivery of business and IT services through global sourcing and automation using Robotic Process Automation, Cognitive Automation, and Blockchains. She has published 27 books, most recently Robotic Process and Cognitive Automation: The Next Phase (2018), Robotic Process Automation and Risk Mitigation: The Definitive Guide (2017), and Service Automation: Robots and the Future of Work (2016) (SB Publishing, UK, co-author Leslie Willcocks). Her publications have appeared in the Harvard Business Review, Sloan Management Review, MIS Quarterly, MIS Quarterly Executive, IEEE Computer, Communications of the ACM, and many other academic and practitioner outlets.

2.   VICKI SAUTER

Vicki L. Sauter is Professor of Information Systems at University of Missouri - St. Louis. She holds a BSIE, MS, and PhD in Systems from Northwestern University. Her research is in the area of decision support/business intelligence, and systems analysis and design. Over the years, this has included transnational DSS needs, intelligent systems, and visualization in DSS. In the DSS realm, her current research involves understanding of risk perceptions associated with linguistic cues. Her work in systems analysis has addressed testing of development tools. Her current research interests include development methodologies and best practices of systems analysis, and trends of women in computing. She is author of the book, Decision Support Systems for Business Intelligence (John Wiley), and many publications that have appeared in journals such as Omega, Journal of MIS, The Database for Advances in Information Systems, International Journal of Information Technology and Decision Making, and Communications of the ACM. She is also the author of a popular book, You Are Never Too Old to Surf: A Senior's Guide to Safe Internet Use. Dr. Sauter regularly teaches systems analysis and business intelligence at the undergraduate and graduate levels.

3.   KENG SIAU

Keng Siau is Chair of the Department of Business and Information Technology (BIT) at the Missouri University of Science and Technology. Prior to joining Missouri University of Science and Technology in June 2012, he was Edwin J. Faulkner Chair Professor and Full Professor of Management at the University of Nebraska-Lincoln (UNL). He was also Director of the UNL-IBM Global Innovation Hub. He served as the Vice President of Education for the Association for Information Systems from July 2011-June 2014. Keng has more than 250 academic publications. According to Google Scholar, he has more than 10,000 citation counts. His h-index and i10-index, according to Google Scholar, are 50 and 122 respectively. Professor Siau is consistently ranked as one of the top information systems researchers in the world based on h-index and productivity rate. Keng's current research interests include AI, robotics, and automation, business analytics and data science, and HCI and UX.

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