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EDITORIAL

Informing Research: Celebrating 50 Years of Ideas and Science at HICSS

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Progress in scientific fields benefits from institutions that enable researchers to build, support, refine, and sometimes overthrow conceptualizations of the world. Such institutions provide opportunities to reflect on what an academic field knows and offer forums to identify what is worth knowing. They are springboards to critique established perspectives and build foundational new knowledge for the generations of research to follow. In some instances, institutions become “other places,” exhibiting intensity, ambiguities, and transformations. These cultural, technical, and discursive spaces are sites in which *epistemes* collide, and normally distinct categories are juxtaposed, creating multiple and even contradictory meanings and new conceptual terrains (Foucault & Miskowiec, 1986). Such institutions create numerous avenues for “informing-research” on new phenomena, disclose new perspectives on phenomena, and illuminate new research agendas and programs. In this special section, we present some of the most interesting and forward-looking research from one of these institutions.

In January 2017, The Hawaii International Conference on System Sciences (HICSS) marked its 50th anniversary (HICSS-50) as a community for sharing innovative ideas in the information systems (and related) disciplines. HICSS is the oldest systems science conference, having been founded before the term information systems (IS) came into use, and has become a paragon of the IS discipline.

HICSS focuses on phenomena that are inherently multidisciplinary. It has grown from a small niche conference into a discipline-spanning event involving involves 1000+ attendees, 90% of whom are presenting authors. In any given year, scholars from

computer science, informatics, media studies, engineering, and information systems engage in conversations that impact how we study emerging topics such as AI ethics, digital humans, innovation ecosystems, blockchain, and such enduring themes as social media, analytics, collaboration, healthcare, e-government, energy systems, knowledge management, and software engineering. Embedded in these thematic tracks is an ethos of “what is interesting? What is unknown? How do we get there?” The breadth of academic representation enables attendees to experience new ideas from multiple disciplines and to engage in conversations that challenge their own assumptions. Consequently, HICSS serves as an important channel for ideas that cross disciplinary boundaries and that have the capacity to spread throughout the global academic community.

HICSS has introduced technological innovations to our world, fostered groundbreaking social science research, and built bridges connecting the worlds of research and practice. Its 50 volumes comprise more than 19,000 refereed papers, which feature work by award-winning authors and keynotes by renowned practitioners from the information technology industry, as well as first efforts by graduate students to understand new phenomena.

HICSS-50 provided an opportunity to step back and consider our accumulated research in information and systems science to identify research possibilities that have only now emerged. To celebrate five decades of innovative work that has often relocated disciplinary boundaries, the editors of this HICSS 50th anniversary special section present five exemplars of “informing-research” presented at HICSS 2017.

Consistent with Ralph Sprague's forward-looking vision, which set an agenda for emergent streams of research, authors were invited to submit papers in the spirit of: *given what we know, where next?* Our invitation challenged authors to synthesize foundational knowledge and develop perspectives on research that inspire curiosity, provoke new questions, and elicit methods or illuminate directions. We suggested that guidance for this type of forward-looking orientation could be found in descriptions of interesting "box-breaking" research (Alvesson & Sandberg, 2014; Davis, 1971), in revising or presenting new methods (Abbott, 2004; Feyerabend, 1993; Law, 2004), or in challenging orthodoxies (Avison & Malaurent, 2014; Spinoza, Flores, & Dreyfus, 1999). The editors sought research that aligned with the ethos that problematization is as crucial as problem solving (Getzels, 1982), and that research can be a beginning not an end. Thus, we hope the papers selected for this special section open intellectual doors and inspire curiosity, new thinking, and active participation.

To begin, "When Humans Using the IT Artifact Becomes IT Using the Human Artifact," Demetis and Lee investigate—and ultimately warn against—the role reversal created as technological systems become ever more ubiquitous, embedded, and controlling in society. Researchers are, in part, responsible for maintaining the view that people "use" technology and are thus the agents of control. By looking at modern contexts of algorithmic trading, Demetis and Lee reveal that, increasingly, "designers code human decisions out of existence," rendering the power relationship between humans and technologies "emergent indeterminism." Such reconfigurations call for further research into the consequences of decision-making transitions and open "new horizons in the boundary between humans and technology."

In the second paper, "Actors, Avatars and Agents: Potentials and Implications of Natural Face Technology for the Creation of Realistic Visual Presence," Seymour, Riemer, and Kay take role reversal in another direction. Building on "recent technical advances in fields such as gaming, entertainment, and computer graphics," they outline the emerging and potentially transformative ability to literally "face the computer" in a context where computationally generated interfaces cannot be distinguished from images of "real people." They argue that natural face technology (NFT)—either puppeted by a human actor or driven by a computer model—has enormous implications for human-computer interactivity. In setting a vocabulary and establishing basic constructs, Seymour and his colleagues outline the landscape of a specific phenomenon (NFT) and also make visible the humanistic potentials of realistic conversational

agents. They highlight the need for intra- and interdisciplinary approaches to researching a broad agenda with "philosophical and conceptual implications pertaining to the more speculative phenomena of 'living with artificial humans.'" The rapidity with which this broad class of technologies is emerging and the potential for both positive uses and for deception provides enormous potential for impactful research.

In "Digital Probes as Opening Possibilities of Generativity," Jarvenpaa and Standaert investigate digital probes as a means of generating "unprompted, innovative inputs from uncoordinated audiences, whose participation with heterogeneous technological resources generates diverse outputs and opens new possibilities." Illustrating the concept with a rich sports-entertainment case, the authors illustrate how digital probes open research on emotional tensions, blur the boundaries between digital and physical realms, and expand the range of tools "of imagination, emotion, and metaphor to stimulate associative fluency in the realm of possibilities." In illustrating the crossovers between digital and physical worlds in game settings, the authors open new realms of inquiry in the digital innovation space.

Much research has examined the factors that drive innovation as a new product or service first entering the market. But what happens next? In "Extending Digital Infrastructures: A Typology of Growth Tactics," Koutsikouri, Lindgren, and Henfridsson, examine how the second generation of innovation occurs. That is, after a successful or partially successful launch, what factors and actions lead to the second round of innovation? Koutsikouri and colleagues focus on innovation at the boundary between the physical and digital realms in public transportation in Stockholm. They propose an initial typology of four growth tactics (adding services, inventing processes, opening identifiers, and providing interfaces), and explore the ways in which each set of tactics successfully extended the scope of the innovation. They identify two distinct dimensions (organizational control and architectural control) that influence infrastructure extensions that make service delivery durable. In other words, now that we have successfully innovated, where next? How do we develop the next round of innovation?

In our final paper, Beck, Müller-Bloch, and King pause to reflect on how blockchain technologies may evoke a new organizational form—decentralized autonomous organizations (DAO). While much work has focused on developing blockchain applications to improve organizations' performance, in "Governance in the Blockchain Economy: A Framework and Research Agenda," Beck and colleagues again suggest role reversal by illustrating the potential of blockchain technologies to enable DAOs in a way that dramatically departs from established forms of

governance. They argue that DAOs represent a radical realignment of the distribution of decision rights, enactment of accountability, and alignment of incentives when compared to traditional forms of organizing. To further understanding of blockchain technologies' implications for organizations, they present a forward-looking research agenda for researchers interested in understanding how blockchains shift the focus of governance towards decentralization of decision rights. The technical enactment of accountability underscores the importance of incentive alignment, thereby changing how we share information and organize work processes.

Collectively, these papers capture the spirit of HICSS: investigating different world(s) at the intersection of disciplines, provoking new directions for inquiry, and affording opportunities for the next generation(s) of scholars to participate in our shared endeavour of understanding how technologies and systems shape and become the world—and vice

versa. In publishing this special section, the senior editors at JAIS promote the journal's efforts to be "inclusive in its coverage of topics, level and unit of analysis, theory, method, and philosophical and research approaches—reflecting all aspects of information systems research globally."¹ As members of the HICSS community and as editors at JAIS, we look forward to another fifty years of researching our interplay in systems that we design, the processes in which we act, the information which shapes the lives of people, and the blurring of distinctions which, heretofore, had made sense. The papers presented here draw new connections, test boundaries, and explore research landscapes to help us understand *where next?*

¹ <https://aisel.aisnet.org/jais/authorinfo.html>

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Dirk S. Hovorka is an associate professor in the Business Information Systems discipline at the University of Sydney. He holds an MS in geology and an MS in interdisciplinary telecommunications, and received his PhD in information systems from the University of Colorado. His research is centered on: the philosophical foundations of IS research with a focus on theory and theory development; design practices and theory; ethics of the artificial, and researching the future. Dirk is a coauthor of *Secondary Design: A Case of Behavioral Design Research* which received the Association for Information Systems 2011 Best Paper Award and was the Journal of the Association for Information Systems Best Paper for that year. He received the 2018 Professor of the Year award from Beta Gamma Sigma (Sydney) and the 2018 USYD Business School Wayne Lonergan Award for Outstanding Teaching.

Jason Thatcher is the MIS Endowed Professor of Information Systems in the Culverhouse College of Business at the University of Alabama. His research examines how information technology drives value creation for organizations through, for example, cybersecurity, adaptive use of technology, and IT strategy. Dr. Thatcher's work appears in the *Journal of the Association for Information Systems*, *Journal of Management Information Systems*, *MIS Quarterly*, *Information Systems Research*, *Journal of Applied Psychology*, and other outlets. Dr. Thatcher is actively involved in service to the IS discipline. He is a past-president of the Association for Information Systems. He serves as senior editor at *MIS Quarterly*, *Decision Sciences*, *AIS Transactions on Human Computer Interaction* and other refereed outlets. He has also served as an editorial board member of *Information Systems Research*, *Journal of the Association for Information Systems*, and *IEEE Transactions on Engineering Management*. In spare moments, Dr. Thatcher enjoys Crimson Tide football, visiting Copenhagen, and eating dim sum in Ashville.

Alan R. Dennis holds the John T. Chambers chair of internet systems in the Kelley School of Business at Indiana University. The chair was established in honor of John Chambers, the CEO of Cisco Systems, Inc., the leading developer of networking technology. His research focuses on teams, designing technology for the subconscious, NeuroIS, and the Internet. He has written more than 100 research papers, and has won numerous awards for theoretical and applied research. Alan is vice president of the Conferences for the Association for Information Systems and was named a fellow of the Association for Information Systems in 2012. His teaching focuses on business analytics, research methods, and data communications and networking. He has written four books, two on data communications and networking, and two on systems analysis and design. He has developed several software systems and technology start-ups over the years.

Joey F. George is a professor of information systems and the John D. DeVries Endowed Chair in Business in the College of Business at Iowa State University. He previously held endowed chairs at Florida State University and Louisiana State University. His bachelor's degree in English is from Stanford University (1979), and he earned his doctorate in management from the University of California Irvine in 1986. Dr. George's research interests focus on the use of information systems in the workplace, including deceptive computer-mediated communication, computer-based monitoring, and group support systems. He was the editor in chief of communications of the Association for Information Systems from 2006–2009, a senior editor at *MIS Quarterly* in 2005, and a senior editor at *Information Systems Research* from 2009–2013. He is a coauthor of two best-selling textbooks, published by Pearson: *Modern Systems Analysis & Design*, and *Essentials of Systems Analysis & Design*. Dr. George twice received the University of Canterbury Visiting Erskine Fellowship, in 2008 and 2012. In 2014, AIS recognized his work with the LEO lifetime achievement award.

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