Guest editorial

Socially responsible information systems development: the role of AI and business analytics

Introduction

Information systems development (ISD) has been part of the intellectual core of the information systems discipline since the 1970s and historically accounts for almost half of all IS research (Hassan and Mathiassen, 2018; Klein, 2003; Sidorova *et al.*, 2008; Öbrand *et al.* (2019)). During this period, important contributions to advance knowledge about ISD have been made by IS researchers, including in the areas of conceptualising IS and ISD (Davis, 1974; Sprague, 1980; Hirschheim and Klein, 1989), ISD methodologies and method tailoring (Fitzgerald, 1997; Avison *et al.*, 1998; Nunamaker *et al.*, 1990; Nandhakumar and Avison, 1999; Karlsson and Ågerfalk, 2009; Cao *et al.*, 2009; Lee and Xia, 2010), flow (Dennehy and Conboy, 2018, 2019), sociological and psychological factors (Markus, 1983; Myers and Young, 1997; McCarthy *et al.*, 2018; Cao *et al.*, 2013; Maruping *et al.*, 2009), expertise and creativity (Tiwana and McLean, 2005), ISD agility (Van Oosterhout *et al.*, 2006; Sarker *et al.*, 2009), complexity of ISD projects (Xia and Lee, 2005; Jacucci *et al.*, 2006; Benbya and McKelvey, 2006) and controlling ISD projects (Kirsch *et al.*, 2002; Choudhury and Sabherwal, 2003; Gregory *et al.*, 2013; Estevam *et al.*, 2020).

Despite attempts to improve the management of ISD projects, these efforts have not had the desired effect, with failure rates remaining unacceptably high (Baghizadeh *et al.*, 2020; Dwivedi *et al.*, 2015; Goldfinch, 2007; Hughes *et al.*, 2016). Studies that have investigated the failure of ISD projects have focused on specific methods and practices (Fruhling and Vreede, 2006; Hughes *et al.*, 2017; Recker *et al.*, 2017; Kautz *et al.*, 2007), socio-technical design issues (Bostrom and Heinen, 1977a, b; Mumford, 2006; Luna-Reyes *et al.*, 2005), organisational issues (Ein-Dor and Segev, 1978; Niederman *et al.*, 1991; Ewusi-Mensah and Przasnyski, 1994; Lyytinen and Robey, 1999) and people issues (Robey *et al.*, 1993; Myers, 1994; Rezvani and Khosravi, 2019).

A review of the IS literature indicates that the relationship between IS researchers and practitioners has been largely disconnected (Moody, 2000; Rosemann and Vessey, 2008; Gill and Bhattacherjee, 2009), with both communities contributing to this divide. In an applied discipline such as IS, research should be relevant to the needs of the practitioners (Lau, 1999; Rosemann and Vessey, 2008; Gill and Bhattacherjee, 2009). Conversely, IS practitioners contribute to this divide as they generally rely on their industry experience, peers or seek advise from vendors or consultants to solve ISD problems rather than looking to academic research (Moody, 2002). To avoid the repeat of past failures, the position of this editorial is that a synergetic relationship between ISD researchers and ISD practitioners would enable all stakeholders to positively exploit emerging technologies (e.g. artificial intelligence [AI], business analytics, etc) in order to (1) design socially responsible IS, (2) create and deliver economic and social value and (3) ensure both research relevance and rigour is achieved, but not compromised (see Figure 1 below).

More concerning is that ISD methodology research, as a percentage of published articles, has fallen steadily over the last two decades (Sidorova *et al.*, 2013), with claims that the topic continues to lack coverage in the IS top journals (Diegmann *et al.*, 2018). For example,

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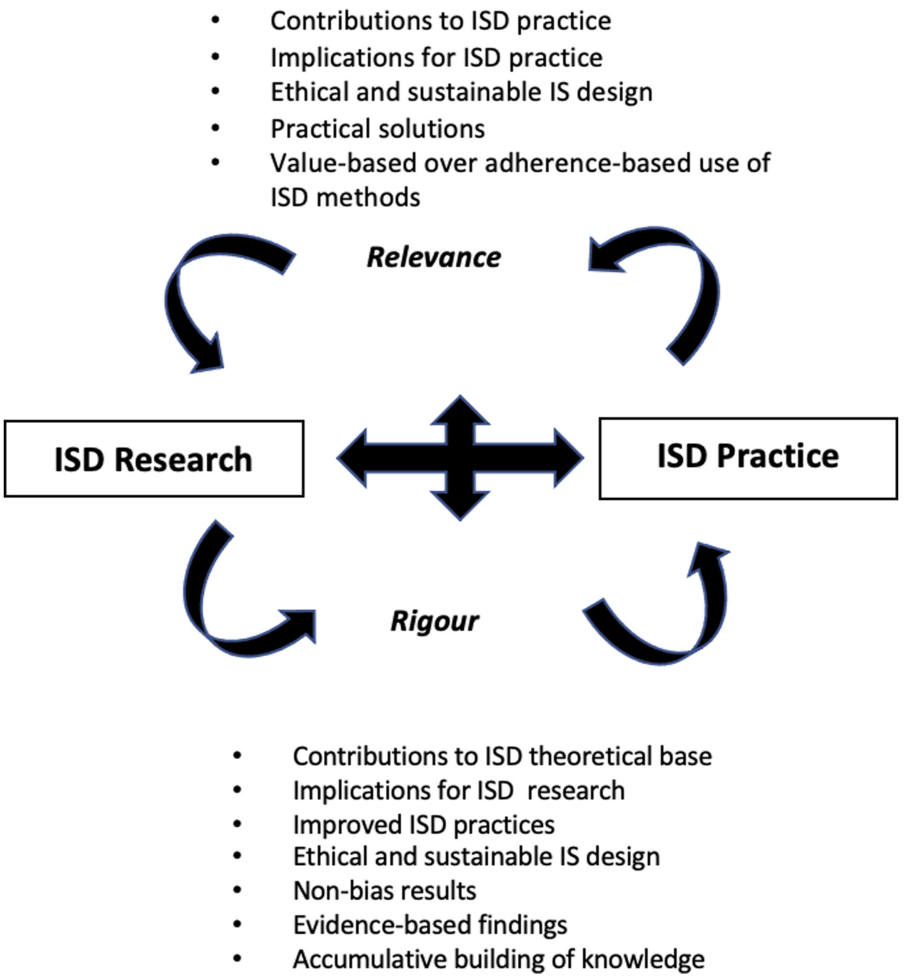

Figure 1.
Synergetic relationship between ISD research and practice

Diegmann *et al.* (2018) used topic modelling to conduct a review of 775 ISD published articles; of which, only 8% were published in top IS journals over the last three decades.

While this trend is concerning for the IS discipline, and specifically for the ISD community, it provides research opportunities to advance understanding of the adoption and integration of emerging technologies in the context of managing ISD projects. Further, it provides an opportunity to contribute to the accumulative building of knowledge of the IS discipline by reflecting on two important questions: First, is the increasing scale, complexity and digitisation of ISD projects challenging ISD scholarship? What is the role of emerging technologies (e.g. business analytics, social media analytics, AI and big data analytics) in the context of managing ISD projects? By answering these questions, we further legitimise the IS discipline, which has previously been tasked with addressing the grand challenges of IS research (Becker *et al.*, 2015; Winter and Butler, 2011).

Recent studies indicate that use of emerging technologies (e.g. AI, business intelligence and analytics) is gaining popularity across the ISD community and that such use can (1) aid in

project selection and prioritisation (Zamani *et al.*, 2021); (2) foster customer relations and better management of end users' expectations (Banerjee *et al.*, 2021), (3) challenge assumptions regarding the relation between requirements quality and requirements priority (Griva *et al.*, 2020) and (4) improve understanding of the dynamics and collective state of complex projects (Davenport *et al.*, 2010). In the context of this editorial, business analytics refers to the technologies, systems, practices, methodologies and applications that are used to analyse critical data so as to better understand business and markets, as well as to make timely decisions (Chen *et al.*, 2012; Lim *et al.*, 2013).

We believe the papers selected for publication in this special issue "*Socially Responsible Information Systems Development: The role of AI and Business Analytics*" contribute to addressing these questions and to the grand challenges that are categorised as (1) socio-technical challenges, (2) IS infrastructure challenges, (3) societal and ecological challenges and (4) social and affective challenges (Becker *et al.*, 2015).

It is worth noting that the appearance of papers in this special issue does not necessarily imply that these articles are the most influential or most important, but rather that they have been selected to showcase the evolution of ISD research over the last five decades.

The selected papers

This *Information Technology and People* special issue was motivated by the need to ensure that ISD researchers, as well as the wider IS discipline, proactively contribute to the responsible design of sustainable information systems for the betterment of all members of society.

We released our Call for Papers for this issue in 2019 with the aim of stimulating academic discourse about the role of business analytics and emerging technologies in the management of ISD projects across various levels of analysis, including individuals and teams involved in projects, portfolios and the wider ecosystem.

The special issue review process involved a number of stages: submission of abstracts to the paper development workshop at the 29th European Conference on Information Systems (June 2020), submission of full papers (September 2020) and a minimum of two rounds of double-blind peer review by domain experts. We actively engaged with the author teams at each of the stages to ensure their studies advanced understanding of the role of emerging technologies in the context of ISD. Here we briefly outline the six manuscripts accepted for this special issue:

(1) "*Understanding Business Analytics Continuance in Agile Information System Development Projects: An Expectation-Confirmation Perspective*" by *Ransome Epie Bawack and Muhammad Ovais Ahmad* examines how expectations from business analytics by members of agile ISD teams affect their perceptions and the continuous use of business analytics in ISD projects. While it is broadly recognised in the ISD literature that IS continuance is contingent on the confirmation of expectations from its users, prior research has not evaluated this claim in the context of business analytics continuance in agile ISD projects. Based on data from 153 respondents, this study shows that "perceived usefulness" and "technological compatibility" are the most salient factors that affect business analytics continuance intention in agile ISD projects. From a practice perspective, the findings highlight that for ISD project managers to generate maximum business value (e.g. agility and performance) from their business analytics investments, they need to ensure that their team members perceive that the adopted business analytics system is useful to their jobs and compatible with all other technologies they use to perform their daily ISD tasks. From a theoretical perspective, this study shows that confirmation of expectations regarding perceived usefulness and technological compatibility is the key determinant of business analytics continuance intentions in agile ISD projects. The

study makes significant contributions by advancing knowledge about business analytics continuance in the context of ISD.

(2) "*Project Management: Openings for Disruption from AI and Advanced Analytics*" by *Fred Niederman* is a theoretical paper that illustrates how project management "pull" and AI/analytics technology "push" are likely to result in incremental and disruptive evolution of project management capabilities and practices. Niederman presents a stimulating and thought provoking essay that juxtaposes AI with contemporary ISD and project management. In summary, the author suggests that while project managers may not need to be concerned with learning the intricacies of AI and advanced analytics, software vendors for project managers may very well enhance their project management offerings with AI-embedded project management tools. Hence, project managers working with AI-powered software will likely need to practice a number of managerial techniques, such as those provided by the interaction processes of CRoss Industry Standard Process for Data Mining (CRISP-DM) or similar methods, while also practicing the best of traditional, agile and other ISD approaches. To this end, traditional project management concerns (e.g. stakeholder relations, risk, estimation) are likely to occur as the ISD and project manager advance their understanding AI and analytical tools.

(3) "*Social media analytics for end-users' expectation management in ISD project*" by *Snehasish Banerjee, Jyoti Prakash Singh, Yogesh K. Dwivedi and Nripendra P. Rana* is an exploratory study that investigates social media users' expectations of digital products that are conceived but not yet launched. The study focuses on the intersection between social media data analytics and ISD project management, a topic that remains under studied. This paper is novel in that it advances knowledge in the context of ISD by examining the degree to which social media posts can be used by marketing teams to inform ISD project managers and development teams for the purpose of end users' expectation management. Using a combination of natural language processing and sentiment analysis, the authors analyse social media microblogs from Twitter about forthcoming smartphones and smartwatches from Apple and Samsung. The authors make a compelling case for the use of social media analytics in ISD (and product development in general), by providing insights into how prospective end users communicate on social media about much-awaited IS products before they are launched, and how such communication could be processed by ISD project management teams to manage expectation. The study contributes to the accumulative building of knowledge by providing a new perspective on social media data analytics, as well as reinforcing the existing theoretical framework of social exchange for understanding online user-generated content. The authors make a compelling case about the importance and value of integrating social media analytics with ISD and project management methods, especially when such digital products and technologies are intended for consumption in society.

(4) "*Sensegiving in Organizations via the Use of Business Analytics*" *by Morteza Namvar, Ali Intezari and Ghiyoung Im* investigates how data analysts generate and use analytical outcomes to influence end users' understanding of the business environment. The authors use sensemaking theory and propose a conceptual model of how data analysts generate analytical outcomes to improve decision-makers' understanding of the business environment. In doing so, the study bridges two distinct activities (i.e. sensemaking and business analytics) and demonstrates how the approaches advocated by both practices could improve analytics applications. Using the interpretive field study approach and thematic analysis, four main sensegiving activities are discovered:

data integration, trustworthiness analysis, appropriateness analysis and alternative selection. The study is based on data from 32 semi-structured interviews with data analysts and consultants in Australia and New Zealand. From a theoretical standpoint, this study provides strong empirical evidence for sensemaking's theoretical development and practice. The authors propose a conceptual model that can help us understand how data flow can be interpreted in a specific context (e.g. ISD) and communicated to ISD management teams. It can also help us better understand sensegiving and sensemaking between IS developers and ISD end users.

(5) "*Designing Antifragile Social-Technical Information Systems (IS) in an Era of Big Data*" by *Roba Abbas and Albert Munoz* explores the value of designing antifragile socio-technical IS in an era of digital technologies (e.g. big data analytics). The article identifies antecedent design features that facilitate performance gains from uncertainty, a concept referred to as antifragility. This study is pertinent to this special issue as socio-technical systems are generally large, complex structures, with increased connectivity, with the requirement to generate, process, analyse and use large datasets. When these systems fail, it affects individuals, organisations and societies due to their inherent complexity and tight linkages between components and structures. Antifragile IS can drive socio-technical systems to respond favourably to uncertainty and stressors. The authors propose a conceptual framework that extends current attempts in ISD to achieve antifragility by design, through architectural and abstract systems design contributions, as well as by using principles-based approaches that rely exclusively on the implementation and/or adaptation of existing IS design philosophies. The study challenges the status quo of design philosophy by viewing uncertainty as a potential pathway for gains and by moving from function preservation utility constructions towards an emphasis on additional functionality across a range of uncertainty settings. The findings show that in order to arrive at a conceptual design framework for antifragile socio-technical IS, IS requires operationalising the identified antecedents as value propositions, design decisions, system capabilities and expected outcomes.

(6) "*Capturing Rich Person-Centred Discharge Information: Exploring the Challenges in Developing a New Model*" by *Nyree J. Taylor, Reeva Lederman, Rachelle Bosua and Marcello La Rosa* is an exploratory study that investigates the likelihood that hospital re-admission can be prevented through the capturing of rich, person-specific information during in-patient care to improve discharge planning and a smooth transition from hospital to home, residential care or somewhere else. The case study is a hospital that provides care for patients with acute coronary syndrome. For the purpose of triangulation, the authors use a variety of data collection techniques (i.e. interviews, focus groups, process mining, patient records). The findings of this study demonstrate that information systems which support patient discharge need to consider models focused on individual patient stressors and that current discharge information capture does not provide the required person-centred information to support a successful discharge. This study advances knowledge on ISD in the context of medical care as prior research had focused on information collection constrained by pre-determined limitations and barriers of system design rather than considering the information generated from multiple sources throughout the patient journey as a mechanism to reshape the discharge process to become more person-centred. The study has implications for research and practice as the authors demonstrate that patient information when collected through multiple channels across the patient care journey may significantly extend the quality of patient care beyond hospital

discharge. This study highlights the importance of responsible design for person-centric information systems.

Outlook and conclusion

While the six papers selected for this special issue are distinctively different, collectively they contribute to contemporary discourse on ISD research and practice, which is critical for the future of the IS discipline and the world at large. Further, they provide a baseline to advance ISD research and practice in the context of a digital and ethical society. Future research could focus on embedding ethical ISD and ethical decision-making within new ISD methodologies in order to empower ISD teams rather than leaving such concerns to professional bodies and organisations. Addressing this gap in knowledge is important as ethical ISD has received limited attention from the IS community in recent years (Smith and Hasnas, 1999; Davison, 2000; Stapleton, 2008; Chatterjee *et al.*, 2009; Vartiainen, 2010; Mingers and Walsham, 2010; Myers and Klein, 2011; Robertson *et al.*, 2019). Future research can examine the role of ISD and emerging technologies (e.g. AI, Big data analytics) in addressing the Sustainable Development Goals (SDGs). Despite previous calls to action to address the grand challenges of IS research (Becker *et al.*, 2015; Winter and Butler, 2011), little has been done by the IS community.

We echo these calls to address the SDGs as the response from the IS community has not just been disappointing (Gholami *et al.*, 2016), it has been dismal and at best marginal (Tan and Neilson, 2021). These concerns warrant the attention of the IS community who are in a privileged position within society to raise awareness about the design, implementation and use of emerging technologies across all sectors of society.

To conclude, we make the call to action for an orchestrated effort within and between the IS discipline, ISD researchers and ISD practitioners to (1) foster ethical and sustainable designed IS, (2) equally distribute the personal, economic and societal benefits offered by IS and emerging technologies, and (3) ensure contributions to the ISD knowledge base and ISD practice.

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References

Avison, D.E., Wood-Harper, A.T., Vidgen, R.T. and Wood, J.R.G. (1998), "A further exploration into information systems development: the evolution of Multiview2", *Information Technology and People*, Vol. 11 No. 2, pp. 124-139, doi: 10.1108/09593849810218319.

Baghizadeh, Z., Cecez-Kecmanovic, D. and Schlagwein, D. (2020), "Review and critique of the information systems development project failure literature: an argument for exploring information systems development project distress", *Journal of Information Technology*, Vol. 35 No. 2, pp. 123-142.

Banerjee, S., Singh, J.P., Dwivedi, Y.K. and Rana, N.P. (2021), "Social media analytics for end-users' expectation management in information systems development projects", *Information Technology and People*, Vol. 34 No. 6, pp. 1600-1614, doi: 10.1108/ITP-10-2020-0706.

Becker, J., Vom Brocke, J., Heddier, M. and Seidel, S. (2015), "In search of information systems (grand) challenges", *Business and Information Systems Engineering*, Vol. 57 No. 6, pp. 377-390.

Benbya, H. and McKelvey, B. (2006), "Toward a complexity theory of information systems development", *Information Technology and People*, Vol. 19 No. 1, pp. 12-34, doi: 10.1108/09593840610649952.

Bostrom, R.P. and Heinen, J.S. (1977a), "MIS problems and failures: a socio-technical perspective. Part I: the causes", *MIS Quarterly*, pp. 17-32.

Bostrom, R.P. and Heinen, J.S. (1977b), "MIS problems and failures: a socio-technical perspective, part II: the application of socio-technical theory", *MIS Quarterly*, pp. 11-28.

Cao, L., Mohan, K., Xu, P. and Ramesh, B. (2009), "A framework for adapting agile development methodologies", *European Journal of Information Systems*, Vol. 18 No. 4, pp. 332-343.

Cao, L., Mohan, K., Ramesh, B. and Sarkar, S. (2013), "Adapting funding processes for agile it projects: an empirical investigation", *European Journal of Information Systems*, Vol. 22 No. 2, pp. 191-205.

Chatterjee, S., Sarker, S. and Fuller, M. (2009), "Ethical information systems development: a Baumanian postmodernist perspective", *Journal of the Association for Information Systems*, Vol. 10 No. 11, p. 3.

Chen, H., Chiang, R.H. and Storey, V.C. (2012), "Business intelligence and analytics: from big data to big impact", *MIS Quarterly*, Vol. 36 No. 4, pp. 1165-1188.

Choudhury, V. and Sabherwal, R. (2003), "Portfolios of control in outsourced software development projects", *Information Systems Research*, Vol. 14 No. 3, pp. 291-314.

Davenport, T.H., Harris, J. and Shapiro, J. (2010), "Competing on talent analytics", *Harvard Business Review*, Vol. 88 No. 10, pp. 52-58.

Davis, G.B. (1974), *Management Information Systems: Conceptual Foundations, Structure and Development*, McGraw-Hill, New York.

Davison, R.M. (2000), "Professional ethics in information systems: a personal perspective", *Communications of the Association for Information Systems*, Vol. 3 No. 1, p. 8.

Dennehy, D. and Conboy, K. (2018), "Identifying challenges and a research agenda for flow in software project management", *Project Management Journal*, Vol. 49 No. 6, pp. 103-118.

Dennehy, D. and Conboy, K. (2019), "Breaking the flow: a study of contradictions in information systems development (ISD)", *Information Technology and People*, Vol. 33 No. 2, pp. 477-501, doi: 10.1108/ITP-02-2018-0102.

Diegmann, P., Dreesen, T., Binzer, B. and Rosenkranz, C. (2018), "Journey towards agility: three decades of research on agile information systems development", *Bridging the Internet of People, Data, and Things: 39th International Conference on Information Systems (ICIS 2018)*, San Francisco, California, USA, 13-16 December 2018.

Dwivedi, Y.K., Wastell, D., Laumer, S., Henriksen, H.Z., Myers, M.D., Bunker, D., Elbanna, A., Ravishankar, M.N. and Srivastava, S.C. (2015), "Research on information systems failures and successes: status update and future directions", *Information Systems Frontiers*, Vol. 17 No. 1, pp. 143-157.

Ein-Dor, P. and Segev, E. (1978), "Organizational context and the success of management information systems", *Management Science*, Vol. 24 No. 10, pp. 1064-1077.

Estevam, A., Dennehy, D. and Conboy, K. (2020), "Using flow tools to enact control in software development projects: a cross-case analysis", *Information Systems Frontiers*, pp. 1-18.

Ewusi-Mensah, K. and Przasnyski, Z.H. (1994), "Factors contributing to the abandonment of information systems development projects", *Journal of Information Technology*, Vol. 9 No. 3, pp. 185-201.

Fitzgerald, B. (1997), "The use of systems development methodologies in practice: a field study", *Information Systems Journal*, Vol. 7 No. 3, pp. 201-212.

Fruhling, A. and Vreede, G.J.D. (2006), "Field experiences with eXtreme programming: developing an emergency response system", *Journal of Management Information Systems*, Vol. 22 No. 4, pp. 39-68.

Gholami, R., Watson, R.T., Hasan, H., Molla, A. and Bjorn-Andersen, N. (2016), "Information systems solutions for environmental sustainability: How can we do more?", *Journal of the Association for Information Systems*, Vol. 17 No. 8, p. 2.

Gill, G. and Bhattacherjee, A. (2009), "Whom are we informing? Issues and recommendations for MIS research from an informing sciences perspective", *MIS Quarterly*, pp. 217-235.

Goldfinch, S. (2007), "Pessimism, computer failure, and information systems development in the public sector", *Public Administration Review*, Vol. 67 No. 5, pp. 917-929.

Gregory, R.W., Beck, R. and Keil, M. (2013), "Control balancing in information systems development offshoring projects", *MIS Quarterly*, pp. 1211-1232.

Griva, A., Byrne, S., Dennehy, D. and Conboy, K. (2020), "Software requirements quality: using analytics to challenge assumptions at Intel", *IEEE Software*. doi: 10.1109/MS.2020.3043868.

Hassan, N.R. and Mathiassen, L. (2018), "Distilling a body of knowledge for information systems development", *Information Systems Journal*, Vol. 28 No. 1, pp. 175-226.

Hirschheim, R. and Klein, H.K. (1989), "Four paradigms of information systems development", *Communications of the ACM*, Vol. 32 No. 10, pp. 1199-1216.

Hughes, D.L., Dwivedi, Y.K., Rana, N.P. and Simintiras, A.C. (2016), "Information systems project failure–analysis of causal links using interpretive structural modelling", *Production Planning and Control*, Vol. 27 No. 16, pp. 1313-1333.

Hughes, D.L., Dwivedi, Y.K. and Rana, N.P. (2017), "Mapping IS failure factors on PRINCE2® stages: an application of interpretive ranking process (IRP)", *Production Planning and Control*, Vol. 28 No. 9, pp. 776-790.

Jacucci, E., Hanseth, O. and Lyytinen, K. (2006), "Introduction: taking complexity seriously in IS research", *Information Technology and People*, Vol. 19 No. 1, pp. 5-11, doi: 10.1108/09593840610649943.

Karlsson, F. and Ågerfalk, P. (2009), "Exploring agile values in method configuration", *European Journal of Information Systems*, Vol. 18 No. 4, pp. 300-316.

Kautz, K., Madsen, S. and Nørbjerg, J. (2007), "Persistent problems and practices in information systems development", *Information Systems Journal*, Vol. 17 No. 3, pp. 217-239.

Kirsch, L.J., Sambamurthy, V., Ko, D.G. and Purvis, R.L. (2002), "Controlling information systems development projects: the view from the client", *Management Science*, Vol. 48 No. 4, pp. 484-498.

Klein, H.K. (2003), "Crisis in the IS field? A critical reflection on the State of the Discipline", *Journal of the Association for Information Systems*, Vol. 4 No. 1, p. 10.

Lau, F. (1999), "Toward a framework for action research in information systems studies", *Information Technology and People*, Vol. 12 No. 2, pp. 148-176, doi: 10.1108/09593849910267206.

Lee, G. and Xia, W. (2010), "Toward agile: an integrated analysis of quantitative and qualitative field data on software development agility", *MIS Quarterly*, Vol. 34 No. 1, pp. 87-115.

Lim, E.P., Chen, H. and Chen, G. (2013), "Business intelligence and analytics: research directions", *ACM Transactions on Management Information Systems*, Vol. 3 No. 4, p. 17.

Luna-Reyes, L.F., Zhang, J., Ramon Gil-Garcia, J. and Cresswell, A.M. (2005), "Information systems development as emergent socio-technical change: a practice approach", *European Journal of Information Systems*, Vol. 14 No. 1, pp. 93-105.

Lyytinen, K. and Robey, D. (1999), "Learning failure in information systems development", *Information Systems Journal*, Vol. 9 No. 2, pp. 85-101.

Markus, M.L. (1983), "Power, politics and MIS implementation", *Communications of the ACM*, Vol. 26, pp. 430-444.

Maruping, L.M., Zhang, X. and Venkatesh, V. (2009), "Role of collective ownership and coding standards in coordinating expertise in software project teams", *European Journal of Information Systems*, Vol. 18 No. 4, pp. 355-371.

McCarthy, S., O'Raghallaigh, P., Fitzgerald, C. and Adam, F. (2018), "Social complexity and team cohesion in multiparty information systems development projects", *Journal of Decision Systems*, Vol. 27 Sup1, pp. 18-31.

Mingers, J. and Walsham, G. (2010), "Toward ethical information systems: the contribution of discourse ethics", *MIS Quarterly*, pp. 833-854.

Moody, D. (2000), "Building links between IS research and professional practice: improving the relevance and impact of IS research", *ICIS 2000 Proceedings*, p. 32.

Moody, J (2002), "Teaching effective listening skills to information systems majors", *Information Science—InSITE—"Where Parallels Intersect"*, pp. 1113-1116.

Mumford, E. (2006), "The story of socio-technical design: reflections on its successes, failures and potential", *Information Systems Journal*, Vol. 16 No. 4, pp. 317-342.

Myers, M.D. (1994), "A disaster for everyone to see: an interpretive analysis of a failed IS project", *Accounting, Management and Information Technologies*, Vol. 4 No. 4, pp. 185-201.

Myers, M.D. and Klein, H.K. (2011), "A set of principles for conducting critical research in information systems", *MIS Quarterly*, pp. 17-36.

Myers, M.D. and Young, L.W. (1997), "Hidden agendas, power and managerial assumptions in information systems development: an ethnographic study", *Information Technology and People*, Vol. 10 No. 3, pp. 224-240, doi: 10.1108/09593849710178225.

Nandhakumar, J. and Avison, D.E. (1999), "The fiction of methodological development: a field study of information systems development", *Information Technology & People*.

Niederman, F., Brancheau, J.C. and Wetherbe, J.C. (1991), "Information systems management issues for the 1990s", *MIS Quarterly*, pp. 475-500.

Nunamaker, J.F. Jr, Chen, M. and Purdin, T.D. (1990), "Systems development in information systems research", *Journal of Management Information Systems*, Vol. 7 No. 3, pp. 89-106.

Öbrand, L., Augustsson, N.P., Mathiassen, L. and Holmström, J. (2019), "The interstitiality of IT risk: An inquiry into information systems development practices", *Information Systems Journal*, Vol. 29 No. 1, pp. 97-118.

Recker, J., Holten, R., Hummel, M. and Rosenkranz, C. (2017), "How agile practices impact customer responsiveness and development success: a field study", *Project Management Journal*, Vol. 48 No. 2, pp. 99-121.

Rezvani, A. and Khosravi, P. (2019), "Emotional intelligence: the key to mitigating stress and fostering trust among software developers working on information system projects", *International Journal of Information Management*, Vol. 48, pp. 139-150.

Robertson, L.J., Abbas, R., Alici, G., Munoz, A. and Michael, K. (2019), "Engineering-based design methodology for embedding ethics in autonomous robots", *Proceedings of the IEEE*, Vol. 107 No. 3, pp. 582-599.

Robey, D., Smith, L.A. and Vijayasarathy, L.R. (1993), "Perceptions of conflict and success in information systems development projects", *Journal of Management Information Systems*, Vol. 10 No. 1, pp. 123-140.

Rosemann, M. and Vessey, I. (2008), "Toward improving the relevance of information systems research to practice: the role of applicability checks", *MIS Quarterly*, Vol. 32 No. 1, p. 3.

Sarker, S., Munson, C.L., Sarker, S. and Chakraborty, S. (2009), "Assessing the relative contribution of the facets of agility to distributed systems development success: an Analytic Hierarchy Process approach", *European Journal of Information Systems*, Vol. 18 No. 4, pp. 285-299.

Sidorova, A., Evangelopoulos, N., Valacich, J.S. and Ramakrishnan, T. (2008), "Uncovering the intellectual core of the information systems discipline", *MIS Quarterly*, pp. 467-482.

Sidorova, A., Evangelopoulos, N., Torres, R. and Johnson, V. (2013), *A Survey of Core Research in Information Systems*, Springer, New York.

Smith, H.J. and Hasnas, J. (1999), "Ethics and information systems: the corporate domain", *MIS Quarterly*, pp. 109-127.

Sprague, R.H. (1980), "A framework for the development of decision support systems", *MIS Quarterly*, December (4:4), pp. 1-26.

Stapleton, L. (2008), "Ethical decision making in technology development: a case study of participation in a large-scale information systems development project", *AI and Society*, Vol. 22 No. 3, pp. 405-429.

Tan and Neilson (2021), "Information Systems and Sustainable Development, Special Issue Call for Papers", *Information Systems Journal*.

Tiwana, A. and McLean, E.R. (2005), "Expertise integration and creativity in information systems development", *Journal of Management Information Systems*, Vol. 22 No. 1, pp. 13-43.

Van Oosterhout, M., Waarts, E. and van Hillegersberg, J. (2006), "Change factors requiring agility and implications for IT", *European Journal of Information Systems*, Vol. 15 No. 2, pp. 132-145.

Vartiainen, T. (2010), "Moral conflicts in project-based learning in ISD", *Information Technology and People*, Vol. 23 No. 3, pp. 265-280, doi: 10.1108/09593841011069167.

Winter, S.J. and Butler, B.S. (2011), "Creating bigger problems: grand challenges as boundary objects and the legitimacy of the information systems field", *Journal of Information Technology*, Vol. 26 No. 2, pp. 99-108.

Xia, W. and Lee, G. (2005), "Complexity of information systems development projects: conceptualization and measurement development", *Journal of Management Information Systems*, Vol. 22 No. 1, pp. 45-83.

Zamani, E.D., Griva, A., Spanaki, K., O'Raghallaigh, P. and Sammon, D. (2021), "Making sense of business analytics in project selection and prioritisation: insights from the start-up trenches", *Information Technology and People*. doi: 10.1108/ITP-09-2020-0633.

Further reading

Bawack, R.E. and Ahmad, M.O. (2021), "Understanding business analytics continuance in agile information system development projects: an expectation-confirmation perspective", *Information Technology and People*, Vol. 34 No. 6, pp. 1551-1569, doi: 10.1108/ITP-10-2020-0681.

Burton-Jones, A., Butler, B.S., Scott, S. and Xu, S.X. (2021), "Next-generation information systems theorizing: a call to action", *Management Information Systems Quarterly*, Vol. 45 No. 1, pp. 301-314.

Deckard, N.S. (1970), "Capturing the development costs of an integrated MIS?", *Journal of Systems Management*.

Iivari, J., Hirschheim, R. and Klein, H.K. (1998), "A paradigmatic analysis contrasting information systems development approaches and methodologies", *Information Systems Research*, Vol. 9 No. 2, pp. 164-193.

Kudaravalli, S., Faraj, S. and Johnson, S.L. (2017), "A configural approach to coordinating expertise in software development teams", *MIS Quarterly*, Vol. 41 No. 1, pp. 43-64.

Namvar, M., Intezari, A. and Im, G. (2021), "Sensegiving in organizations via the use of business analytics", *Information Technology and People*, Vol. 34 No. 6, pp. 1615-1638, doi: 10.1108/ITP-10-2020-0735.

Niederman, F. (2021), "Project management: openings for disruption from AI and advanced analytics", *Information Technology and People*, Vol. 34 No. 6, pp. 1570-1599, doi: 10.1108/ITP-09-2020-0639.

Windeler, J.B., Maruping, L. and Venkatesh, V. (2017), "Technical systems development risk factors: the role of empowering leadership in lowering developers stress", *Information Systems Research*, Vol. 28 No. 4, pp. 775-796.