Editorial

Krisen Moodley

Senior Lecturer, Institute of Resilient Infrastructure, University of Leeds, UK

The development of infrastructure asset management is still seen to be in its infancy in developing a body of knowledge. Although infrastructure was ‘managed’ over the centuries, the formalised knowledge sharing is relatively recent. Asset management has seen major advances over the last three decades. Across the globe there have been advances in standards, models and principles. The development of ISO 55000:2014 created a common phraseology and the Global Forum on Maintenance and Asset Management provides a competency framework and landscape document for infrastructure asset management (GFMAM, 2014). Researchers and practitioners continue to develop our understanding of the field.

The March 2017 issue of the journal provides this blend of practice and research. Dixon (2017) makes the case for using a holistic approach to ‘sell’ the concept of asset management to senior management. Kenn *et al.* (2017) present an asset management methodology for coastal asset management related to the railway sector. Yuan (2017) develops guidelines for deterioration modelling for wastewater systems and the implications for the management of these assets. These papers are a mixture of practice and research that inform our understanding of infrastructure asset management.

Dixon (2017) contends that infrastructure asset management is a multi-disciplinary field and it is difficult to distinguish from good managerial practice in areas such as financial management and risk control. He develops the view that asset management provides a framework to integrate these areas. A view is developed that indicates that asset management has to be ‘sold’ as a concept to organisations. Dixon uses three cases to illustrate how asset management could evolve and emerge as a concept. He suggests that asset management will not justify investment decisions but will provide a mechanism for supporting decisions. The holistic nature of asset management is emphasised. This paper looks at the need for connection with the strategic and operational management levels of organisations and illustrates the need to embed asset management thinking at all levels. It is an ongoing challenge to embed ‘holistic’ asset management thinking within organisations.

Kenn *et al.* (2017) have developed a new coastal asset management methodology for assessing the risks posed by coastal processes to the railway network. The system is developed for an operational railway network. The system has been designed to provide a consequence-based asset risk assessment. This considers the physical condition of the asset in combination with the risk from coastal erosion, wave overtopping and still water level flooding. In order for the coastal asset management plan to be effective over an extended time frame, these risks are analysed in the present day and for three future time epochs: 2025, 2055 and 2115. Analysing the future risk profile allows

the development of a long-range view of likely future maintenance and capital liabilities. The coastal asset management system developed includes a number of innovative data capture, analysis and presentation techniques. These tools simplify large volumes of data relating to complex processes. This paper is timely in that it highlights infrastructure risks on coastlines. Climate change and associated rising sea levels are likely to impact coastal infrastructure. The paper attempts to model future scenarios and indicates some of the future challenges for infrastructure owners. It also provides an insight into the challenges of future-proofing for asset owners.

Yuan (2017) argues that deterioration modelling involves not only the data-driven process that asset managers have traditionally perceived, but also a system analysis that carries the empirical deterioration modelling at the level of performance data up to the level of the performance hierarchy at which decisions are made. In addition, deterioration modelling is an important and integral component of risk analysis, and therefore, the characterisation and quantification of aleatory and epistemic uncertainty become an essential component of deterioration modelling. Moreover, deterioration data includes not only hard data collected from inspection and condition assessment, but also soft data that can be gleaned from expert opinions, design manuals and professional judgements. Although mainly for water and waste water assets, the author suggests the principles, guidelines and model selection flow chart are equally applicable to other infrastructure assets. Deterioration modelling is becoming an increasingly important tool in asset decision-making; its integration with risk modelling helps deliver data-driven asset risk decision-making. There is a paucity of deterioration and life-cycle models that link directly into asset-management frameworks. This paper is timely response in providing a link between deterioration modelling, risk analysis and asset decision-making.

This is my final Editorial as Editor-in-Chief for *Infrastructure Asset Management*. The original intention was to provide a forum for infrastructure asset management research, practice and policy. It also intended to nurture the growing research and practice community in infrastructure asset management. To this extent, the journal has enjoyed three successful years with contributions from Singapore, Hong Kong, Switzerland, Canada, New Zealand, USA, Norway, Nigeria, Japan and the UK. We have received original research articles, review papers, technical notes, case studies and new policy developments to support knowledge development for the emerging infrastructure asset management community.

I would like to acknowledge the efforts of all the members of the journal’s Editorial Panel and reviewers who gave up their time to

support this project. I would also be remiss of me not to thank the authors who contributed to the journal and allowed us to share their intellectual property with the wider infrastructure community. Publication of this journal would not be possible without the unstinting support of the ICE Publishing team who made this project an enjoyable personal journey. Thank you.

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