

TUTORIAL: Design Science Research: A Hands-on Tutorial

John R. Venable

School of Management

Curtin University

Perth, Western Australia

Email: j.venable@curtin.edu.au

Abstract

Design Science Research continues to grow in prominence within information systems, because of its strong emphasis on relevance to practice and its ability to make immediate, practical impact on practice. Despite this, there are commonly misunderstandings about DSR and many experienced researchers are unfamiliar with it, due to the emphasis in their research training on behavioural research methods. New perspectives on DSR continue to evolve and new methods and techniques for conducting and managing DSR projects are being developed and made available.

This is an applied tutorial, aimed at novice and experienced researchers who wish to learn more about Design Science Research (DSR) and/or to develop and progress their own DSR work. During the tutorial, the attendees will be introduced to various DSR concepts and current trends, to create a coherent perspective on DSR and its relationship to other research paradigms. Attendees will also be introduced to several specific and applied techniques for planning and conducting DSR, which were developed or co-developed by the workshop organiser.

Keywords: Design Science Research, Research Methodology, Problem Analysis, Evaluation, Risk Management

1 INTRODUCTION

Design Science Research continues to grow in prominence within information systems, because of its strong emphasis on relevance to practice and its ability to make immediate, practical impact on practice. Despite this, there are commonly misunderstandings about DSR and many experienced researchers are unfamiliar with it, due to the emphasis in their research training on behavioural research methods. New perspectives on DSR continue to evolve and new methods and techniques for conducting and managing DSR projects are being developed and made available.

2 TARGET AUDIENCE

Novice and experienced researchers who wish to learn more about Design Science Research (DSR) and/or to develop and progress their own DSR work.

Maximum number of participants: 25

3 TUTORIAL DESCRIPTION AND ACTIVITIES

Design Science Research continues to grow in prominence within information systems, because of its strong emphasis on relevance to practice and its ability to make immediate, practical impact on practice. Despite this, there are commonly misunderstandings about DSR and many experienced researchers are unfamiliar with it, due to the emphasis in their research training on behavioural research methods. New perspectives on DSR continue to evolve and new methods and techniques for conducting and managing DSR projects are being developed and made available.

3.1 Objectives of the tutorial

Introduce attendees to key DSR concepts and current trends, demystify and create a coherent and straightforward perspective on DSR and its relationship to other research paradigms, introduce practical and applied techniques for planning and conducting DSR, which were developed or co-developed by the workshop organiser, develop understanding and skills in applying techniques covered.

3.2 Format of the sessions:

The tutorial is held over four 1.5 hour sessions as described below. It is possible to divide this into four separate tutorials, in case attendees do not wish to attend all sessions.

3.2.1 Session 1: Foundations of Design Science Research

The first session will introduce the attendees to the DSR research paradigm and to various concepts, issues, and current trends in DSR, in order to create a coherent perspective on DSR and its relationship to other research paradigms. The latter three sessions will each introduce techniques developed or co-developed by the presenter.

3.2.2 Session 2: Problem analysis, ideation, evaluation, and theorising in DSR using CCM4DSR

CCM4DSR: Coloured Cognitive Mapping for Design Science Research (Venable 2014, further enhanced version developed and under preparation for journal submission)

3.2.3 Session 3: Managing risk in DSR using RMF4DSR, TRiDS, and MeRMaiDS

RMF4DSR: Risk Management Framework for Design Science Research (Pries-Heje et al, 2014)

TRiDS: Treatments for Risk in Design Science (Venable et al, 2019)

MeRMaiDS: Methodology for Risk Management in Design Science (unpublished), which incorporates RMF4DSR and TRiDS into a coherent methodology

3.2.4 Session 4: Designing and conducting evaluations in DSR using MEDS

MEDS: Methodology for Evaluation in Design Science: Further enhanced version of FEDS (Venable et al. 2016) developed and under preparation for journal submission.

3.3 Presentation format

During the workshop sessions, the organiser will present materials and engage the attendees in discussion about important concepts, trends, and techniques. Attendees will be invited to apply the concepts to their own research and discuss with the presenter and fellow attendees.

3.4 Ways in which the audience is encouraged to participate

When covering the applied techniques, both to further attendees' learning and to develop their research, attendees will be invited to apply the techniques to their own ongoing, planned, or potential DSR research projects. The organisers have developed workbooks that the attendees can use to carry out practical exercises and take them away afterwards. The workshop organisers will be on hand to assist participants in planning their research and answering questions about the application of the techniques to the participants' own research.

4 REFERENCES

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PRESENTER

Associate Professor John Venable is Discipline Lead for Business Information Systems (BIS) at Curtin University. He is a former Head of School and Director of Research in the School of Information Systems at Curtin. He has held academic positions in Information Systems (IS) and Computer Science in the USA, Denmark, New Zealand, and Australia. He has published extensively in international conferences and journals including *The European Journal of Information Systems*, *Journal of Information Technology*, *Information & Management*, *The Information Systems Journal*, *Information Technology & People*, *Communications of the Association for Information Systems*, *The Scandinavian Journal of Information Systems*, *The Australasian Journal of Information Systems*, *The Journal of Community Informatics*, *Wirtschaftsinformatik*, and *The Electronic Journal of Business Research Methods*. He serves in editorial roles on five international journals and regularly serves as chair, track chair, and program committee member of international research conferences. Dr Venable is an internationally recognised expert in Design Science Research (DSR). His other research interests include IS development and planning methods and practice; organisational, IS, and data modelling; ontologies; problem solving methods; qualitative and critical research; research methods; organisational culture and change management; knowledge management and organisational learning; group support systems and collaborative work; digital library systems; IT support for teaching and learning; the application and management of IS and IT to support not-for-profit organisations; corporate social responsibility; and the application of IS and IT for human benefit.

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