Australasian Conference on Information Systems

ACIS

2017

Australasian Conference on Information Systems

4th - 6th December 2017

WrestPoint Tasmania, Hobart, Australia
## Contents

Welcome from the Conference General Chairs 3  
A Message from the Program Chairs 4  
A Message from the Organising Chair 7  
A Message from the Doctoral Consortium Chairs 8  
General Information for Participants 9  
Social Events 13  
Keynote Speakers 14  
Panels 18  
Tutorials 23  
Workshops 25  
Track Chairs 26  
Reviewers 29  
Conference Daily Program 33  
Full Research Paper Abstracts 39  
Research In Progress Paper Abstracts 62  
Conference Venue Map 81
Welcome from the Conference General Chairs

Welcome to ACIS 2017, the premier conference in the Australasian region for the Information Systems discipline. ACIS 2017 is hosted by the School of Engineering and ICT, University of Tasmania in Hobart, Australia.

This year we mark the 28th year of the conference’s impressive history. The Information Systems discipline still is a relatively young and broadly based discipline that naturally interfaces across a range of disciplinary boundaries. For this year’s ACIS we invite you to think about Data, Knowledge and Decisions. What are our challenges when dealing with the large volume of data currently being generated when thinking about managing, organising and making sense of this data? How can we support the creation of knowledge from information created when managing and organising data? As one of the fundamental roles of Information Systems is supporting decision making, how are we adjusting our current understanding of Information Systems in response to new technology such as social media?

We hope you enjoy the program of ACIS 2017 which has been shepherded by our Program Co-Chairs, Kai Riemer, Marta Indulska and Virpi Kristiina Tuunainen. Please do take some time to enjoy the beauty and hospitality of Tasmania’s capital city Hobart and its surroundings.

Christopher Lueg
University of Tasmania

Leonie Ellis
University of Tasmania
A Message From the Program Chairs

We would like to welcome you to the 28th Australasian Conference on Information Systems – ACIS2017. It has been an absolute pleasure to work with many academics, students and industry practitioners to develop a thought provoking program for the conference and to introduce some new initiatives, which we hope you will enjoy.

In preparing the program, we were motivated to ensure a broad coverage of topics, both traditional and emerging, that relate to Information Systems research. To this end, we invited authors to submit to 16 different tracks at the conference, an indication of the diversity of the topics planned for this year. At the same time, we took a gender-balanced approach to the leadership of the tracks, while also wanting to ensure that early career researchers were involved in the organisation of as many tracks as possible.

We are pleased to note that the conference, through its underlying tracks with diverse track leadership, has received a very high number of submissions this year. In total, 255 paper submissions were received, by authors from 35 countries. These submissions included 169 full research paper submissions and 86 research-in-progress paper submissions. We would like to thank all of the authors for submitting their research for review.

All papers, including research-in-progress papers, underwent a rigorous double-blind review process. Recommendations on papers were then made by track chairs and considered by us across all tracks prior to finalising decisions. We were pleased to also receive several paper submissions from track chairs. We followed the same rigorous process for the review and decisions of these papers, and made sure that they were handled in other tracks to remove completely any conflicts of interest (you will see these papers marked by an * in the program to indicate they were handled in another track). In the end, we accepted 67 full research papers (40%) and 48 research-in-progress papers (55%).
The accepted papers are distributed across 28 sessions over 2.5 days of the conference. One of these sessions, named “controversial papers” reflects our attempt this year to encourage debate around controversial and novel ideas. Sometimes, when a paper receives widely diverging assessments from reviewers, it is not because of disagreements about the paper’s quality, but because the ideas are controversial and elicit vastly different reactions. We think that such papers are worth discussing in the conference. Together with the track chairs we identified three such controversial papers. In the spirit of debate three colleagues have generously agreed to act as discussants for these papers, to provide their insights and kick off the discussions during this session.

Further, we have increased the spotlight on research-in-progress papers to strengthen the developmental nature of the conference. These papers are included in the conference proceedings and presented as posters at the conference. This year we have included a dedicated poster session in the program of the first full day of the conference, complemented by refreshments. We hope this session leads to fruitful discussions of the research-in-progress papers and further feedback and ideas for the authors. In addition, the authors of the top 6 research-in-progress papers were invited to present their work in two dedicated paper sessions. Each of these papers was again assigned a senior colleague as a dedicated discussant who will provide their insights for future development and facilitate a vibrant discussion.

The program is complemented by three carefully selected keynote speakers, notably Professor Suprateek Sarker (University of Virginia), Professor Paul Dourish (University of California, Irvine) and Professor Mardi Dungey (University of Tasmania), who we look forward to hosting in Hobart. The program is further enriched by the inclusion of two tutorials and four panels, including an industry panel dedicated to discussing the main theme of the conference - Data, Knowledge, Decisions - as well as a Q&A-style panel targeted specifically at junior and early career researchers (which everyone is of course welcome to attend). We would like to thank our keynote speakers, tutorial presenters and panel facilitators, as well as panellists, for their contributions to the program.
We would also like to thank all the track chairs and the reviewers for the role they have played in creating a high-quality program for ACIS2017. The track chairs have dedicated significant time and effort into encouraging submissions, managing the review process, making paper recommendations, nominating awards and assisting with the finalisation of the program. The reviewers have generously provided their time and expertise to offer constructive feedback on paper submissions. Overall, the effort involved writing of 604 reviews by 355 Program Committee members! Our thanks also extend to the session chairs and paper discussants, who will ensure a lively, enjoyable and constructive exchange of knowledge and ideas during the ACIS sessions.

We consider the ACIS2017 program to be a collective effort of the above-mentioned individuals and consider it an honour to have worked with all concerned to arrive at the ACIS2017 program. We hope you enjoy the program and leave the conference with new collaborations and full of new ideas. See you again next year!

Best regards,

Kai Riemer
University of Sydney

Marta Indulska
University of Queensland

Virpi Kristiina Tuunainen
Aalto University
A Message From the Organising Chair

With its return to the beautiful state of Tasmania, ACIS2017 offers a depth of academic and natural offerings for you to share, collaborate and innovate during the three days. This year we are delighted to be including MONA as a part of our Conference Dinner, this will be an event not to miss! Monday night will commence with a ride on the MONA Ferry and a chance to view the museum collection before enjoying an evening of celebration, food and music.

It’s not possible to organise a conference like ACIS2017 without a tremendous deal of effort from many people. Firstly, Professor Christopher Lueg and Associate Professor Leonie Ellis have been fantastic in overseeing and supporting the development and running of ACIS2017. Our program chairs, Professor Kai Riemer, Associate Professor Marta Indulska and Professor Virpi Kristiina Tuunainen, have been invaluable in organising the conference program, particularly as this year we received 255 submissions. Professor Deborah Bunker and Professor Henry Linger have worked tirelessly in marketing and organising the Doctoral Consortium.

Thank you to Ms Raelene Nichols and Ms Danielle Stokes for assisting with the many administration details, and to the Wrest Point Tasmania team, headed by Ms Caroline Woolley and to Emily-Rose from MONA, for making sure the venue and catering of ACIS2017 runs smoothly. Thanks to Dr Joel Scanlan and Ms Meredith Castles for recruiting and organising our wonderful team of students. And of course, thank you to our students!

We look forward to meeting you and hope that you experience the natural side of Tasmania whilst you enjoy ACIS2017 in Hobart.

Erin Roehrer
University of Tasmania
A Message From the Doctoral Consortium Chairs

Welcome to the ACIS 2017 Doctoral Consortium (DC). This consortium workshop is designed for Higher Degree Research (HDR) students from Australia, New Zealand and beyond who are in the early to mid-stages of their candidature.

This DC serves as a vehicle for HDR students and Academic Mentors to exchange knowledge and experiences about IS disciplinary history, theories, methodologies and practices, as well as and strategies for undertaking IS research projects and dissertations. It specifically aims to provide constructive feedback on HDR students’ research projects and to assist students with developing their academic career. We are very pleased to have six experienced mentors to facilitate the discussions and plenary sessions this year. We are also fortunate to have Professor Julie Fisher as the keynote speaker, Professor KarlHeinz Kautz who will present a plenary on IS research in the digital economy and A/Prof John Lamp to lead the workshop on journal reviewing.

The DC activities commence with Registration and Introductions late afternoon on Friday 1st December and getting-to-know-you activities and a relaxed dinner. Formal sessions are scheduled all day on the 2nd December, with a dinner in the evening. The formal sessions continue through to mid-afternoon on the 3th of December, followed by the main ACIS conference reception in the evening.

We hope that this consortium will provide you with a friendly, professional and supportive environment that allows you to further develop and accelerate your research program. We look forward to meeting you and sharing research experiences together.

Deborah Bunker
University of Sydney

Henry Linger
Monash University
General Information for Participants

No Smoking
Wrest Point Tasmania is a smoke-free venue. There are designated smoking areas on the outside section of the boardwalk and near the motorcycle parking at the main hotel front entrance. Smoking is prohibited everywhere else on Wrest Point Tasmania property.

Registration and Information Desk
A registration and information desk is located in entrance of the Boardwalk Gallery. The desk will be open:

- Sunday 3\textsuperscript{rd} 5:30pm - 8:00pm
- Monday 4\textsuperscript{th} 8:00am - 4:30pm
- Tuesday 5\textsuperscript{th} 8:30am - 5:00pm
- Wednesday 6\textsuperscript{th} 8:30am - 2:30pm

Lanyards
All delegates and sponsors receive a personalised lanyard on registration. Lanyards should be worn at all times and will serve as identification for entrance all conference sessions, lunches, morning and afternoon tea. Where relevant, your lanyard is marked to indicate attendance for the social events.

Conference Dinner and Receptions
Full conference registration includes admittance to the Welcome Reception, Conference Dinner, Women in IT Reception, lunches, morning and afternoon teas.

Student registration includes admittance to the Welcome Reception, lunches, morning and afternoon teas. The University of Queensland Business School has kindly sponsored student attendance to the Conference Dinner. Students attending the Doctoral Consortium have their dinner attendance included in their registration.
Wine will be provided during the conference dinner until **9:30pm** and then will move to a cash bar. *Spirits and additional alcohol can be purchased separately.*

**MONA Viewing (Before Conference Dinner - Monday 4th December)**

We have been given a wonderful opportunity to view the MONA collection before our Conference Dinner. The viewing is for 40 minutes before the dinner and so if you wish to explore the museum you need to ensure **you are at the wharf by 4:25pm for a 4:30pm departure by Ferry.** Once at MONA proceed directly to the lowest floor of the museum and work your way up. *Staff will start moving through at 5:30pm for a 6pm closure.*

**Accessing Conference Papers**

All papers are available on the conference website [http://www.acis2017.org/](http://www.acis2017.org/)

**Conference Support Staff**

Our conference support staff can be identified by their grey and orange t-shirts with the #ACIS2017 hash tag. Please do not hesitate to request assistance, information or direct any concerns during your attendance.

**Conference Attire**

Dress at the conference, the Welcome Reception and Women in IT Reception is smart casual. Dress at the Conference Dinner is semi-formal.

**Meeting Space**

Need to meet with colleagues to discuss research or catch up with a PhD student? Meeting space can be arranged for this purpose. Please see one of our friend conference support staff to book a room.

**Internet Access**

Complimentary high speed Wi-Fi internet access is available. Access instructions will be available on registration. Responsible use of the network is expected and usage will be monitored.

**Social Media**

Help spread the word and capture what is great about ACIS2017! Use #ACIS2017 and post your picture to Facebook, Twitter or Instagram. A $100 iTunes card will be awarded each day for the best picture.
Drinking Water

A drink bottle and conference map outlining water refill locations has been provided in your delegate bag. Please support us in reducing the use of plastic by using the drinking bottle provided. A water refill station is located next to the registration desk and information desk in the entrance of the Boardwalk Gallery.

Transport

Suggested modes of transport between Wrest Point Tasmania and city locations:

- Buses leave every 15 minutes from Wrest Point to Hobart CBD during the week. Route numbers are 266, 402, 426, 429. The Bus Stop is located on Sandy Bay Road, a two minutes walk from the front main hotel entrance. You can download the Metro Tas App (iOS and Android) to help with trip planning.
- Buses leave every 15 minutes from Wrest Point to Salamanca during the week. Route number is 402.
- Taxi pick-up and drop-off point is the main entrance of Wrest Point Tasmania Hotel Lobby.

Parking

Undercover free parking is available at Wrest Point Tasmania to all conference delegates. Please remember that parking in a disabled parking spot without the required permit will incur a fine. Valet car parking is available to delegates who are staying at Wrest Point Tasmania. Please see one of the Porters Team members on arrival and they’ll take care of you and your vehicle. Daily charges apply for valet car parking.

Liability

The members of the conference committee, the University of Tasmania and Wrest Point Tasmania accept no liability for personal accidents, loss or damage suffered by any participant, accompanying person, invited observer or any other person by whatever means. Neither do we accept liability for any equipment, or software, brought to the conference by the delegate, speakers, sponsors or any other party.
Security
To ensure the safety of personal property such as laptops, tablets, cameras, phones and other valuable items please do not leave them unattended and notify a member of the conference support staff if you notice individuals who appear to be out of place or without a name badge.

Getting around the Conference Venue
The Boardwalk Gallery and Boardwalk Gallery Annex is located right next to the Wellington Room. Spaces for informal meetings or catch ups are located in the Welling Foyer. The Green Room is a 2 minute walk from the Boardwalk Gallery, it is accessible by stairs and a lift. Please see one of our conference support staff if you wish to use the lift. The Riviera and Mezzanine Boardroom is a 4 minute walk from the Boardwalk Gallery and is located in the main hotel. It is accessible by stairs or a lift.

Coffee
There is a coffee cart available with your choice of espresso coffee, hot chocolate and a selection of teas. This service is available to all full, student and doctoral consortium attendees. Visit the registration and information desk to collect your free daily voucher. Additional cups are $3.00 each.
Social Events

Welcome Reception
Sunday the 3rd of December 2017
6pm - 8pm
The Welcome Reception will be held in the Boardwalk Gallery at Wrest Point, 410 Sandy Bay Road, Sandy Bay. The Boardwalk Gallery enjoys a world-class waterfront setting and is located on the Lower Level.

Conference Dinner
Monday the 4th of December 2017
4:30pm Ferry from Wrest Point. Arrive MONA at 5:15pm to explore the museum. Dinner commences 6pm for a 6:30 start. Dress is Semi-Formal.

The Conference Dinner will be held at MONA, 655 Main Road, Berriedale. The Museum of Old and New Art (MONA) is an art museum located within the Moorilla winery on the Berriedale peninsula in Hobart, Tasmania, Australia. MONA perceives art as an experience and boasts local, national and international artists within its collections.

Women in IT Reception
Tuesday the 5th of December 2017
6pm to 8pm
This year’s ACIS Women in IT networking event will be held at Society Salamanca, 22 Montpelier Retreat, Salamanca. Come along to network, share exciting discussions and debate about women’s representation in the fields of IS and IT in a relaxed atmosphere.
This talk is about our discipline and about what it means to be an IS scholar. My starting point is the understanding that sociotechnical perspective is one of the key foundations of the IS discipline and it has contributed significantly to the discipline’s distinctiveness, unity, and expansiveness, and hence to its long-term academic viability. However, a review of the literature suggests that the perspective is not consistent with the way IS research is enacted; indeed informal conversations indicate that many IS scholars are unaware of the sociotechnical perspective while some others tend to ignore it, leading to much confusion regarding what the IS discipline is about. I will argue that the sociotechnical perspective needs to be explicitly acknowledged as the “axis of cohesion” for the IS discipline to ensure its position in the ecology of disciplines, and I will offer ways to adapt the perspective so as to make it acceptable to diverse traditions of IS research. Finally, I will highlight implications for scholars, academic departments, and scholarly journals.

Professor Sarker teaches courses on data management, systems analysis and design, management of IT in organizations, and qualitative research approaches. His research has been published in high ranking journals and his funded by the National Science Foundation, as well as the Institute for the Study of Business Markets. He serves on the editorial boards of a number of journals, and holds visiting professorships at the University of London (United Kingdom) and at Aalto University (Finland).
THE STUFF OF BITS: EXPLORING THE MATERIALITIES OF INFORMATION IN INTERACTION

Much of the language of computation is based on the idea that virtual experiences are, by definition, immaterial. On the other hand, in the context of mobile and ubiquitous computing, we have been reminded of the importance of the physical world, and many over the last decade have been intrigued by the possibilities of new interactive materials.

In this talk, I will explore the range of ways that we might want to grapple with the materiality of information — not just of information infrastructures, or of information-rich objects, but of digital information itself and particularly information representations. I will draw on research from anthropology, philosophy, and science studies to demonstrate how we might incorporate a sense of the material more deeply into the ways that we think about interaction with digital information.

Professor Paul Dourish is the Chancellor's Professor of Informatics and Associate Dean for Research in the Donald Bren School of Information and Computer Sciences at the University of California, Irvine, with courtesy appointments in Computer Science and in Anthropology. His research lies at the intersection of computer science and social science, with a particular interest in ubiquitous and mobile computing and the cultural practices surrounding digital media. Professor Dourish is affiliated with several interdisciplinary initiatives and centers on campus, including the California Institute for Telecommunications and Information Technology, the Laboratory for Ubiquitous Computing and Interaction, the Center for Cyber-Security and Privacy, the Center for Computer Games and Virtual Worlds, and the Institute for Money, Technology, and Financial Inclusion.
Keynote Speakers

Professor Mardi Dungey
University of Tasmania

SOCIAL SCIENTISTS: WHAT DO THEY WANT? BIG DATA AND DECISION-MAKING WHEN KNOWELDGE INFLUENCES THE OUTCOMES.

The problem for much of social science is that the participants in the systems being studied are entities which learn and react and it is difficult, if not impossible in many circumstances, to undertake controlled experiments. For example the forecasting problem is complicated by individual and group reactions to the knowledge of the forecast. For example, forecasts of firm profits change the behaviour of investors towards that firm, and directly affect the actual profitability. This is totally unlike systems such as weather where the short-term changes in behaviour of the forecast user (such as grabbing an umbrella) does not influence the weather outcome. Consequently the problem for the social scientist in using big data systems for decision-making analysis is to model the behavioural interactions as evidenced in the data generating process. This presents both the social scientist and the information technologist with a particularly interesting communication problem in resolving the design and analysis of data collation and collection. This talk will examine key principles of effective interaction between data science and economic decision-making, drawing on key experience in working with information systems and economic decision makers at individual level (for example choosing a mortgage), firm level (for example choosing how much electricity to produce), and government level (for example forecasting future output). In addition the talk will discuss the differences in how questions around the utilisation and adaption of systems which may be designed to improve efficiency from the perspective of one player (usually the developer) are addressed in the social sciences.
Mardi Dungey is Professor of Economics and Finance at the University of Tasmania, a Senior Research Associate at the Centre for Financial Analysis and Policy at the University of Cambridge and Adjunct Professor at the Centre for Applied Macroeconomic Policy at the Australian National University. Professor Dungey’s research interests combine the empirical sides of finance and economics, particularly in her interests in the effects of financial crises on open economies and policy assessment. She is responsible for developments in modelling frameworks for open economies and for applications to Australian and other economies. Professor Dungey is an expert in contagion effects during financial crises and is actively working in high frequency financial econometrics.
Panels

Panel: Data, Knowledge, Decisions
Stephen Cahoon, Sense-T, University of Tasmania

An industry panel consisting of four senior executives of Tasmanian companies, chaired by Associate Professor Stephen Cahoon, will explore how they have adopted and are planning to use data and technology to enhance their business decision making. The focus on data, knowledge and decisions will ask the senior executives to reflect on how this has changed over the last 5-10 years, what practices have already been adopted in their businesses, and how they are preparing for the next 5-10 years of digital disruption. This thought provoking session covering transport, small to medium businesses, agriculture and aquaculture will provide an industry edge and perspective on how data and technology is shaping contemporary businesses.

Panel: New Educational Directions for Complex IS in a Fast-paced Digital World
Corina Raduescu, University of Sydney

Contemporary higher education is changing in today’s dynamic environment. Our role as educators is to prepare a future agile workforce that can address problems in an increasingly complex world and an often-uncertain future. To do this we have to embrace several challenges. We need to collaborate closely with practitioners and other key stakeholders, to ensure that the focus of our learning remains relevant in a rapidly changing world. We need to impart to our graduates a diverse skill tool-set which includes problem-solving, communication, agility, design thinking, critical thinking, leadership, self-management, curiosity, and imagination. We need to embrace increasing complexity in the means our educational practices, to include for example MOOCS, blended and flipped learning.
We also need embrace this complexity in the content we impart to students, as information systems develop to include new technologies such as, social networks, cloud computing, virtual reality, big data, and artificial intelligence, all of which operate within large, complex information infrastructures. The aim of this panel is to engage in discussion on innovative and effective strategies for Information Systems (IS) curriculum, course design, pedagogy and practice required in the Digital era. We will explore the following topics:

In a rapidly evolving job market, how do we equip our graduates with new types of skills and abilities (e.g., agility, complex problem solving, creativity, innovation, inter-disciplinary knowledge), and how do we assess the attainment of such skills?

What do we need to successfully teach complex concepts, processes, systems and infrastructures within dynamic socio-technical organisations and environments?

Do the current structures of our degrees (narrowly focused courses and siloed majors) support this need for inter-disciplinary education? Is there a way forward to changing these archetypal structures to break down the silos?

How can we leverage learning environments, MOOCs, virtual reality, artificial intelligence and other technologies for teaching and learning, e.g. with automated assessment or virtual-reality-based interactive case studies?

What incentives, structures, and processes do we need to successfully collaborate and engage in co-design and Work-Integrated Learning (WIL) with industry partners? The focus of the traditional University model is research engagement, but what do we need in place to successfully set up long-term education engagement?
Panel: What should I be researching? (And can I actually do that?)
Mike Seymour, University of Sydney

This panel will discuss the issues that face researchers and students as they explore an academic research program in Information Systems. It will explore the major areas of research, publishing, and the relationship of research to industry. Specifically, the panel will address the following questions, among others:

- What should I research?
- Do journals reflect our interests or define them?
- Who are these reviewers anyway and aren’t they themselves facing the same issues I do?
- Does my research need to have real-world relevancy for actual people?
- Can publishable research be fun?

An international panel of senior, as well as young career academics, will debate and answer these questions in the style of the ABC’s Q&A program. Rather than a series of formal presentations, we will explore and debate the issues facing someone considering a research agenda in Information Systems.

Attendees will hear from our experienced panellists about: how to decide what to research, how to create significant and impactful research, publication tricks and how this all relates to actual business.

Some aspects of the panel discussion will apply to interdisciplinary education and/or research. Broad issues such as: the types of research, relevance, how to explore research that is interesting to you and the world. This panel discussion builds on last year’s 2016 successful panel with the same format.
Panel: Improving data analytics in the health sector
David Deacon, Tasmanian Health Service

Technology advances are now challenging the traditional paper or best-of-breed systems approach used by healthcare providers. As healthcare costs continue to spiral, administrators and clinicians look for new ways of using information to assist in improving and providing more evidence based patient care. As more and more electronic systems are implemented, there has been an explosion in data and rapid development of analytical tools and techniques. This, when combined with increasing demand for Commonwealth compliance and national benchmarking, is bringing about a “perfect storm” in the healthcare industry.

The panel will reference experience with the Statewide Clinical & Financial Analytics Unit in the Tasmanian Health Service as it looks to explore and debate these issues. The panel seeks to address the following questions:

• Should analytics be decentralised to the clinical level or centralised in data analytic centres?

• What are the drivers and requirements for change in analytics (eg big data, visual analytics)?

• How would access to high end analytics enable clinicians to better serve their patients and the whole community?

• Can new or smarter models of care be driven by centralised analysis?

• Patient care or analytics, which one is the driver?

The panel members will share their knowledge; provide information around opportunities and barriers, and illicit responses that are intended to provide direction. It is our aim to foster and encourage constructive dialogue and discussion between participants and panel members, examining how to accelerate and progress improvement across the data and information space.
Panel: Research and business intelligence: Driving an improvement agenda across education sectors

Professor Natalie Brown, University of Tasmania

The transformative power of education is widely recognised. A more robust national evidence base for effective policy and program development will assist in meeting national education objectives and lift national productivity. Yet, collecting the data and building the evidence base with meaningful information to support decision making is mired in complexity. The panel will reference a small-scale pilot in a regional Tasmanian community to facilitate engagement in a discussion of the broader challenge for researchers, policy makers, and education systems.

A multidisciplinary panel of senior government and university leaders, as well as experienced and early career researchers will share their perspectives on the impediments and opportunities to leverage data to develop a robust evidence base in Australia. Rather than a series of formal presentations we will encourage a constructive dialogue and discussion between participants and panel members to examine how to drive an improvement agenda across education sectors.
Tutorials

Tutorial: Smart Internet of Things Ecosystem for Smart Cities: State-of-the-art for IS researchers and practitioners
Arkady Zaslavsky, Data61, CSIRO

The Internet of Things (IoT) is part of Future Internet and will comprise many billions of Connected Smart Objects (CSO) or “things” where things can sense, communicate, compute and potentially actuate as well as have intelligence, multimodal interfaces, physical/virtual identities, attributes. The IoT will enable many information services, applications and systems while at the same time it will challenge traditional approaches to designing, developing and implementing information systems, the ways users will interact with smart things. The Internet of Things (IoT) brings opportunities to create new services and products, reducing costs for societies, and changing how services are sold and consumed.

IoT-produced big data will challenge the traditional approaches to data management. Some of the typical areas that produce big data are smart cities, meteorology, genomics, physics, simulations, biology and environmental science. Some of the potential application areas of big data analytics include smart homes, finance, log analysis, security, traffic control, telecommunications, search quality, manufacturing, trade analysis, fraud and risk. Smart cities is an emerging paradigm which is characterized by high diversity of applications, interoperability challenges, policy issues, data availability, big data and data access openness, challenges of deploying IoT infrastructure, diverse and heterogeneous data sources, cross-domain analytics and many other challenges.

Tutorial participants will be presented with the state-of-the-art in IoT, IoT-generated big data, IoT-enabled smart cities, and various IoT enablers, including reasoning engines, context-awareness and mobile analytics.
The tutorial will focus on context-awareness as the major contributor to smartness of IoT and enabler of real-time decision support. Participants will learn about one of Data61, CSIRO, Australia projects in IoT and smart cities, namely, the EU Horizon-2020 project bIoTope (www.biotope-project.eu) - building IoT Open Innovation Ecosystem for connected smart objects. The primary focus of bIoTope is on enabling Smart City applications with smart ecosystem. Some of the pilots include cities of Helsinki, Lyon and Brussels, as well as a major car manufacturer. The tutorial will conclude with presenting the bIoTope ecosystem with demos of use cases and core components.
Workshops

Workshop: Design Science Research: A Hands-on Tutorial

John Venable, Curtin University

This workshop 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 workshop, 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 four specific and applied techniques for planning, conducting, and managing DSR, which were developed (often co-developed with others) by the workshop presenter. As time permits, they will also be introduced to a web-based tool (DScaffolding, also co-developed by the presenter) that supports learning and conducting DSR.

The workshop will be held over three 1.5 hour sessions over the course of one day:

Part 1: Introduction to Design Science Research and CCM4DSR - Coloured Cognitive Mapping for DSR Problem Analysis and Solution Identification (with DScaffolding support)

Part 2: MEDS - The Methodology for Evaluation in DSR (with DScaffolding support)

Part 3: RMF4DSR - The Risk Management Framework for DSR (with DScaffolding support) and TRiDS - Treatments for Risks in Design Science

When covering 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 presenter 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.
Track Chairs

Digital Business Innovation
Lubna Alam, *Deakin University*
Michel Avital, *Copenhagen Business School*
John Campbell, *The Australian National University*

Social Media in Organisations and Society
Rodney J. Clarke, *University of Wollongong*
Ana Hol, *Western Sydney University*
Christian Ehnis, *The University of Sydney*

Design and Design Science in IS
Dirk Hovorka, *University of Sydney*
John Venable, *Curtin University*
Silvia Schacht, *Karlsruhe Institute of Technology*

Diversity, inclusion and cross cultural issues in IS
Jenine Beekhuyzen, *Adroit Research and Deakin University*
John Lamp, *Deakin University*
Armin Stein, *University of Münster - ERCIS*

Alternative Approaches and Genres in IS
Karlheinz Kautz, *RMIT University*
Ella Hafermalz, *The University of Sydney*
Tina Blegind Jensen, *Copenhagen Business School*

Agile, Project Management and IS Development
Sharon Coyle, *The University of Sydney*
Diane Strode, *Whitireia Polytechnic*
Mali Senapathi, *Auckland University of Technology*
Information and knowledge management for decision making
Rosemary Van Der Meer, University of Wollongong
Nelly Todorova, University of Canterbury
Markus Bick, ESCP Europe

Data Analytics and Visualisation in Decision Making
William Yeoh, Deakin University
Ida Asadi Someh, The University of Melbourne
Olgerta Tona, Lund University

IS Philosophy and Research Methods
Mary Tate, Queensland University of Technology
Sebastian Boell, The University of Sydney
Bill Doolin, Auckland University of Technology

Human Computer Interaction, the User Experience, and Human-centred IS
Julie Fisher, Monash University
Mike Seymour, The University of Sydney
Anushia Inthiran, Canterbury University

Service Science, Management and Innovation in IS
Axel Korthaus, Swinburne University of Technology
Christoph F Breidbach, The University of Melbourne
Aileen Cater-Steel, University of Southern Queensland

IS Education, Training and Learning Technologies
Corina Raduescu, The University of Sydney
Christine Van Toorn, University of New South Wales
Pedro Isaias, University of Queensland
Babak Abedin, University of Technology Sydney
Health Informatics - Translating Data to Knowledge with Technology for Healthcare Decisions
Frada Burstein, Monash University
Sophie Cockcroft, University of Queensland
Don Kerr, University of the Sunshine Coast

Green IS and Sustainability
Vanessa Cooper, RMIT University
Craig Parker, Deakin University
Cathy Dwyer, Pace University

IS Security Management and Privacy
Sean Maynard, The University of Melbourne
Atif Ahmad, The University of Melbourne
Dragana Calic, Defence Science & Technology Group
Robert Willison, University of Newcastle

General Track
Mark Toleman, University of Southern Queensland
Sabine Matook, The University of Queensland
Helana Scheepers, Swinburne University of Technology
Manuel Wiesche, Technical University of Munich
Reviewers

Ahmad Abarshi
Bashar Abboodi
Mumtaz Abdul Hameed
Thomas Abraham
Marc Adam
Carlos Andres Agudelo
Atif Ahmad
Khairulliza Ahmad Salleh
Maulidyati Aisyah
Amani Al-Jaafreh
Ahmed Al-Kalbani
Kholoud Al-Kayid
Moneer Alshaikh
Ayed Alwadain
Chadi Aoun
Nalin Asanka Gamagedara
Arachchilage
David Arnott
Marjan Aslanzadeh
Michael Axelsen
Abdul Babar
Seyedehsaba Bagheri
Abayomi Baiyere
Wasana Bandara
Shankhadeep Banerjee
Peter Bellström
Emilia Bellucci
Rohan Bennett
Katrin Bergener
Benedikt Berger
Jean-Gregoire Bernard
Samadrita Bhattacharyya
Sara Bilal
Scott Bingley
Gudlaugur Ellert Birgisson
Gro Bjerknes
Jacqui Blake
Till Blesik
Malcolm Blumberg
Boyan Bontchev
Indranil Bose
Rachelle Bosua
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John Bowman
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Vince Bruno
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Jim Buchan
Deborah Bunker
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Pavel Castka
Joseph Cazier
Dubravka Cecez-Kecmanovic
Leela Cejnär
Mehmood Chadhar
Johnny Chan
Musa Chemisto
Adela Chen
Chris Chen
Anitha Chennamaneni
Yen Cheung
Prem Chhetri
Clemen Chiang
Monica Chiarini
Tremblay
Sophie Cockcroft
Sue Conger
Jacqueline Corbett
Carlos Costa
Jocelyn Cranefield
Stefan Cronholm
Jacob Cybulski
Mark Dale
Naomi Dale
Farhad Daneshgar
Duy Dang
Kenan Degirmenci
Pari Delirhaghigh
Hepu Deng
Nancy Deng
Sinan Deniz
Daswin Desilva
Antonio Diaz Andrade
Martin Dick
Stuart Dillon
Andreas Drechsler
Karen Druffel
Signe Dyrby
Rebekah Eden
Christian Ehnis
Kirsten Ellis
Fahame Emamjome
Amjad Fayoumi
Julie Fisher
Rebecca Fleming
Lauren Flutey
Bardo Fraunholz
Jessica Frawley
Odd Fredriksson
Thomas Friedrich
Francis Gacenga
Caddie Gao
Tom Gedeon
Ahmad Ghazawneh
David Gibson
David Goad
Sigi Goode
Elena Gorbacheva
Mary Ellen Gordon
Geoffrey Greenfield
Shirley Gregor
Janine Hacker
Abdul Hafeez-Baig
Ella Hafermalz
Petri Hallikainen
André Hanelt
Natalie Hardwicke
Catherine Hardy
Adrian Hargreaves
Helen Hasan
Syahida Hassan
Igor Hawryszkiewycz
Jon Heales
William Hefley
Andreas Hein
Pirkkalainen Henri
Alan Hevner
Allen Higgins
Anders Hjalmarsson
Ninh T.U. Ho
Friedrich Holotiuk
Craig Horne
Md Zakir Hossain
Zahra Hosseinifard
Luke Houghton
Shun-Wen Hsiao
Jack Hsu
Ali Intezari
Soyiri Ireneous
Tomayess Issa
Hamed Jafarzadeh
Stephanie James
Lech Janczewsaki
Christian Janiesch
Marko Jäntti
Stark Jeannette
Christian Jentsch
Thorhildur Jetzek
David Johnstone
Osden Jokonya
Gustaf Juell-Skielse
Anna-Katharina Jung
Miranda Kajtazi Vogel
Henrik Kämpling
Sittimont Kanjanabootra
Stan Karanasios
Kia Kashi
Erol Kazan
Gohar Feroz Khan
Sam Kirshner
Dale Kleeman
Mathias Klier
Farzan Kolini
Piet Kommers
Niklas Kuehl
Tyge-F. Kummer
Michael Kyobe
Ramesh Lal
Michael Lane
Reeva Lederman
Cheng-Siong Lee
Jenny Leonard
Nelson Leung
Linda Levine
Mengxiang Li
Wenli Li
Sherlock Licorish
Eric Lim
Sebastian Lins
Gloria Liu
Lili Liu
Na Liu
Paul Lowry
Ariel Lui
Dale MacKrell
Rob Macredie
Maria Madlberger
Monika Magnusson
Tim Mahlberg
Osama Mansour
Matti Mantymaki
Diana Mao
David Marshburn
Malte Martensen
Nigel Martin
Attila Marton
Kenan Matarwia
Sean B. Maynard
Natasha Mazey
Agata McCormac
Craig McDonald
Tanya Mcgill
Elspeth McKay
Brad McKenna
Christine McLachlan
Stuart Mcloughlin
Asgarkhani Mehdi
Michael Mehmet
Rob Meredith
Christian Meske
Shah Jahan Miah
Nicholas Micallef
George Mickhail
Annette Mills
Milad Mirbabaie
Kristijan Mirkovski
Deepthi Mishra
Kaveh Mohajeri
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<tr>
<td>ACIS2017 Reception (Boardwalk Gallery at West Point, 410 Sandy Bay Road, Sandy Bay)</td>
<td>5:30-8pm</td>
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Sunday 3rd December 2017
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<td>8:45-9:00</td>
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<tr>
<td>9:00-12:30</td>
<td>Keynote address: The Sociotechnical Perspective as an Art of Coordination for the IS Discipline: An Assessment and a Way Forward</td>
<td>Wellington 2 (Boardwalk Gallery)</td>
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<td>Speaker: Tony Van Vliet (University of Auckland)</td>
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<tr>
<td>13:10-13:30</td>
<td>Morning tea (Boardwalk Gallery)</td>
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<td>PANEL Panel title: Data, Knowledge, Decisions</td>
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<td>Panel facilitator: Stephen Cotton (University of Tasmania, Australia)</td>
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<td></td>
<td>PANEL Paper title: Strategies and Influence of Social Media in 2017 German elections</td>
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<tr>
<td></td>
<td>Authors: Florian Budhan (University of Queensland, Germany)</td>
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<td>13:50-14:05</td>
<td>TUTORIAL TUTORIAL title: Smart Internet of Things Ecosystem for Smart Cities: State-of-the-art for IS researchers and practitioners</td>
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<tr>
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<td>Presenter: Arkady Zaslavsky (Data61, Australia)</td>
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**Monday 4th December 2017**

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<thead>
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<th>Room</th>
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*Note: The table contains placeholders for actual content.*
## Tuesday 5th December 2017

### 9:00-10:00
**Keynote address: The Stuff of Bits: Exploring the Materialities of Information in Interaction**
Paul Dourish (Wellington Room - Wellington 1 & 2)

### 11:15-12:15
**Panel: New Educational Directions for Complex IS in a Fast-paced Digital World**

**Panel Facilitator:** Corina Radulescu (University of Sydney, Australia)

**Panelists:**
- Donald Kerr, Panel member (University of the Sunshine Coast)
- Jenny Leonard (University of Sydney, Australia)
- Christine Van Toan (University of New South Wales, Australia)
- Doug Vogel (Harbin Institute of Technology, China)

### Boardwalk Gallery Annex
**Session Chair:** Kai Biemer (University of Sydney)

- **Paper 264**
  - The Interface of IT Capabilities and Disruptive Innovations
  - Abayomi Baiyere (Copenhagen Business School, Denmark)

- **Discusant:** Karlheinz Kautz (RMIT University)

### Green Room (2 minute walk)
**Session Chair:** Sean Maynard (University of Melbourne)

- **Paper 74**
  - Understanding Organisational Approach towards End User Privacy
  - Avantika Senarath (The University of New South Wales, Australia) and Nalin Asanka Gamagedara Arachchige (The University of New South Wales, Australia)

### Mezzanine Boardroom (4 minute walk)

### TUTORIAL

**Design Science Research: A Hands-on Tutorial**

**John Vyasable**
(Curtin University, Australia)
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<tr>
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**Panel Discussion: DevOps in a Modern End-to-End Environment**
- Peter Chen (University of Technology, Australia)
- Julie Frost (University of Technology, Australia)
- Mike Tabor (University of Technology, Australia)
- Qi Wang (University of Technology, Australia)

**Lunch Break**

**Session 8**

<table>
<thead>
<tr>
<th>Time</th>
<th>Venue</th>
<th>Session</th>
<th>Talk Title</th>
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<tbody>
<tr>
<td>09:00-10:00</td>
<td>Wellington 1</td>
<td>Session 8</td>
<td>Paper 125: Advanced DevOps: A Comprehensive Guide to DevOps Best Practices</td>
<td>John R. Vreede (Curin University, Australia) and Richard L. Bradshaw (Curin University and George State University, United States of America)</td>
</tr>
<tr>
<td>10:00-10:30</td>
<td>Wellington 2</td>
<td>Session 8</td>
<td>Paper 147: Streamlining the Development Process with DevOps for a High-Tech Environment</td>
<td>Abdul Wali (University of Technology, New Zealand) and John Vreede (Curin University, Australia)</td>
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<tr>
<td>10:30-11:00</td>
<td>Wellington 3</td>
<td>Session 8</td>
<td>Paper 119: DevOps in the Cloud: Best Practices for Cloud-Reliable Development</td>
<td>John Vreede (Curin University, Australia) and Abdul Wali (University of Technology, New Zealand)</td>
</tr>
</tbody>
</table>

**Panel Discussion: DevOps in a Modern End-to-End Environment**
- Peter Chen (University of Technology, Australia)
- Julie Frost (University of Technology, Australia)
- Mike Tabor (University of Technology, Australia)
- Qi Wang (University of Technology, Australia)

**Lunch Break**

**Session 9**

<table>
<thead>
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<th>Time</th>
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<th>Session</th>
<th>Talk Title</th>
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<tbody>
<tr>
<td>11:00-11:30</td>
<td>Wellington 1</td>
<td>Session 9</td>
<td>Paper 126: Designing User Interfaces for the Elderly: A Systematic Literature Review</td>
<td>Connor O'Dwyer (University of Newcastle, Australia) and Ruphin Arunade (University of Newcastle, Australia) and Mark Adam (University of Newcastle, Australia)</td>
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<td>11:30-12:00</td>
<td>Wellington 2</td>
<td>Session 9</td>
<td>Paper 148: An Experience with DevOps in the Digital Factory - The Empowered Role of the Software Team</td>
<td>Mark Adam (University of Newcastle, Australia) and Alexander Richter (University of Zurich, Switzerland)</td>
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<td>12:00-12:30</td>
<td>Wellington 3</td>
<td>Session 9</td>
<td>Paper 127: An Experience with DevOps in the Digital Factory - The Empowered Role of the Software Team</td>
<td>Mark Adam (University of Newcastle, Australia) and Alexander Richter (University of Zurich, Switzerland)</td>
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**Panel Discussion: DevOps in a Modern End-to-End Environment**
- Peter Chen (University of Technology, Australia)
- Julie Frost (University of Technology, Australia)
- Mike Tabor (University of Technology, Australia)
- Qi Wang (University of Technology, Australia)
Full Research Paper Abstracts

Paper # 8: The importance of school leaders for deploying and integrating ICT in schools: From the perspective of Catholic rural school leaders.
Steven Vella, Oliver Burmeister, Andrew Barnden and Arnela Ceric

In an era of unprecedented funding in education, a proportion of the billions of dollars being spent will influence the deployment and integration of Information and Communication Technology (ICT) in schools. School leaders will be one of many roles within schools accountable for the effective and efficient use of ICT in these environments. This paper reports the findings of a study to help understand more about the role of school leaders for the deployment and integration of ICT. The study used an online survey of a sample of principals, assistant/associate principal and leaders/head teacher/coordinators who volunteered to participate and then followed up those who agreed to be interviewed to further investigate findings. Analysis used basic statistics and qualitative interpretation to help understand why all participants thought their role was considerably, or critically, important for the integration of technology, but ranged from not important, to critical importance for deployment.

Paper # 16: IT Service Management: The Alignment of ITIL Practitioner with Service-Dominant Logic
Stefan Cronholm, Kaimar Karu, Hannes Göbel, Philip Hearsum and Peter Hero

The application of a service-oriented perspective in the IT sector has become the paradigm, making managers highly aware of the importance of being service oriented and customer focused. In the IT sector, a service-oriented perspective is encompassed in the widespread field of IT Service Management (ITSM). However, while ITSM practitioners are, to a certain degree, becoming aware of the benefits of the contemporary Service-Dominant Logic perspective, the primary market view still adheres to Goods-Dominant Logic. The majority of IT organisations around the globe rely on the ITSM framework ITIL in order to adopt and adapt a service perspective. The purpose of this paper is to examine how the ITIL Practitioner (the latest ITIL book) complies with Service-Dominant Logic. The paper discusses findings in relation to four codes: Definition of service, The role of the service provider, Value and value propositions, and Co-creation.
Paper # 24: Summer hot, Winter not! - Seasonal influences on context-based music recommendations
Andreas Drechsler
This paper explores artefact generativity as a novel conceptual frame to inform information system (IS) artefact design beyond designing for artefact utility at the time of an artefact’s introduction or implementation. The paper draws on three recently developed generativity conceptualizations and applies the findings to IS artefact design. Artefact generativity captures the notions that 1) sustained artefact utility may require potentially continuous artefact changes over its lifetime, 2) (re-)designers need to enact these changes within a design system, and 3) continuous artefact use may lead to further generative transformations in the artefact’s social and technical environment. IS design science researchers can draw on this paper’s findings to inform future artefact design decisions that address these three notions by drawing on the established and growing foundations of IS and social science theories that underlie the established generativity perspectives.

Paper # 31: The Formation Process towards Conglomeration of Digital Ecosystems: A Hybrid Organizing Perspective
Wenchi Ying and Suling Jia
Although many enterprises have been pursuing an ecosystem strategy to facilitate larger and more diverse ecosystems in recent years, there are few successful examples of conglomeration of digital ecosystems through leveraging IT/IS capabilities to align and combine diverse ecosystems. Hybrid organizing is a sound guiding theory that we adopt to examine the nature of formation process of the conglomeration. We construct a theoretical lens aligning hybridization approaches with forms of ecosystems through an organization design based on IT/IS capabilities. Guided by this lens, we conduct an in-depth case study of a successful company in China. This study reveals a process model which consists of dismissing, separating, and cumulating phases. Our findings contribute to existing body of literature, in the field of digital ecosystems and hybrid organizing. Core firms of ecosystems can use the model to design and develop digital ecosystems with rational deliberation and planning.

Paper # 36: Investigating the impact of ICT tutorial strategies to promote improved database knowledge acquisition
Aaron Bere and Elspeth McKay
Retention of students in IT courses has become a problem in South Africa. This paper employs a Rasch item response model to examine the effectiveness of utilising ICT tutorial tools in database knowledge acquisition within the South African higher education context. The study applied a 2X2 factorial quasi-experimental design. Data was analysed quantitatively using the QUEST Interactive Test Analysis estimate. Results indicate that utilisation of ICT tutorial tools positively impacts on students’ performance. Furthermore, instructional support using the Blackboard learning management system was more effective than mobile learning using WhatsApp instant messaging. The significance of this paper lies in its potential to provide insights for possible alternatives that have potential to improve Science, Technology, and Engineering (SET) instructional outcomes. Such enhanced cohort retention could reduce persistent SET skill job market shortages. The major implication of the study involves encouraging adoption of ICT tutorial tools.
Melinda D'Cruz, Jason Watson and Greg Timbrell

Government organisations worldwide are adopting digital strategies to enhance service delivery, gain efficiencies and meet the evolving and growing expectations of business and society in a digital world. Yet, current academic literature fails to provide a framework for digital government strategy derivation to harness the benefits of recent digital advances. We employed the case study methodology to examine the way two government organisations approached digital strategy derivation. We propose an adapted, design-led innovation (DLI) framework to aid digital government strategy derivation, and explore its applicability by retrospectively mapping the activities undertaken by the case organisations in deriving a digital strategy to the adapted framework. Our study finds that public organisations may iterate through the quadrants in the adapted DLI framework to formulate a digital strategy, underpinned by a clear value proposition that is identified through reframing situations. This research will enrich e-government literature, and guide digital government strategy derivation.

Paper # 43: Customer Agility Capabilities at EuroBank: The Role of ICT and Organizational Routines
Petri Hallikainen, Hilkka Merisalo-Rantanen and Amany Elbanna

Knowledge management (KM) plays a prominent role in IT and software development companies. It is often introduced as part of larger organizational change processes that aim at improving their software development processes. Process improvement in the IT sector has led to the establishment of the software process improvement (SPI) discipline. We present the conceptual basis for investigating how software companies can ground their improvement activities on knowledge management through a study of the KM and SPI literature. We identify two archetypes of knowledge organizations which we label exemplary and situational and two approaches to process improvement, which we call normative and reflective. Our analysis of the relationship between KM and SPI leads to a proposal for a balanced theory of KM in SPI and provides valuable insights into how meaningful KM can be conducted for process improvements in IT and software organizations.

Paper # 47: Exploring the ACIS Community through the Analysis of Co-authorship across Institutions
Duy Dang Pham Thien and Karlheinz Kautz

This research employs a social network analysis (SNA) approach to study the longitudinal changes in co-authorship and affiliations of authors, who published in the Australasian Conference on Information Systems (ACIS) from 2001 to 2011. The research explores the structural patterns of co-authorship at the institution and individual author levels, and found research collaboration tend to occur between authors in the same regions and institutions. Descriptive findings further revealed key authors with rich and diverse co-authorship ties, as well as the tendency of authors to collaborate in silos within institutions. A longitudinal SNA method was performed to statistically deduce the changing patterns of co-authorship and affiliations from a sample of the authors in this 11-year period, which complements the descriptive findings. The discussion of our findings results in recommendations to improve the ACIS community’s productivity and directions for future studies concerning the applications of SNA in examining research collaboration.
Manjula Devananda, Stephen Cranefield, Hywel Llyod and Michael Winikoff

Current patient information models are able to support individual patient-level analysis. However, population-focused care is gaining importance due to an increase in the number of people with long-term conditions. A population-focused care addresses the care needs of a group of patients who share a common trait. Primary health care (PHC) being the first point of contact with a health system, our previous work aims to predict and analyse this population-level workload at a PHC centre. As a part of this work, we identified that current patient information models lack the ability to support population-level analysis. In this paper, we discuss an extended ontology of patient information models to support population-level workload analysis. We describe the three cycles of Design Science Research (DSR) applied to develop our ontology. Then, we discuss the existing health data models. Thus, this paper makes a domain-specific application of DSR to develop a patient information model that supports population-level analysis.

Paper # 57: A Serious Game Design: Nudging Users’ Memorability of Security Questions
Nicholas Micallef and Nalin Asanka Gamagedara Arachchilage

Security questions are one of the techniques used to recover passwords. The main limitation of security questions is that users find strong answers difficult to remember. This leads users to trade-off security for the convenience of an improved memorability. Previous research found that increased fun and enjoyment can lead to an enhanced memorability, which provides a better learning experience. Hence, we empirically investigate whether a serious game has the potential of improving the memorability of strong answers to security questions. For our serious game, we adopted the popular “4 Pics 1 word” mobile game because of its use of pictures and cues, which psychology research found to be important to help with memorability. Our findings indicate that the proposed serious game could potentially improve the memorability of answers to security questions. This potential improvement in memorability, could eventually help reduce the trade-off between usability and security in fall-back authentication.

Paper # 60: Segmenting an Online Reviewer Community: Empirical Detection and Comparison of Reviewer Clusters
Samadrita Bhattacharyya, Shankhadeep Banerjee and Indranil Bose

Online review communities thrive on contributions from different reviewers, who exhibit a varying range of community behaviors. However, no attempt has been made in the IS literature to cluster behavioral patterns across a reviewer population. In this paper, we segment the reviewers of a popular review site (Yelp) using two-step cluster analysis based on four key attributes (reviewer involvement, sociability, experience, and review quality), resulting in three distinct reviewer segments - Enthusiasts, Adepts, and Amateurs. We also compare the propensity of receiving community recognition across these segments. We find that the Enthusiasts, who show high involvement and sociability, are the most recognized. Surprisingly, the Adepts, who are high on review quality, are the least recognized. The study is a novel attempt on reviewer segmentation and provides valuable insights to the community managers to customize strategies to increase productivity of different segments.
Paper # 74: Understanding Organizational Approach towards End User Privacy
Awanthika Senarath and Nalin Asanika Gamagedara Arachchilage

End user privacy is a critical concern for all organizations that collect, process and store user data as a part of their business. Privacy concerned users, regulatory bodies and privacy experts continuously demand organizations provide users with privacy protection. Current research lacks an understanding of organizational characteristics that affect an organization’s motivation towards user privacy. This has resulted in a “one solution fits all” approach, which is incapable of providing sustainable solutions for organizational issues related to user privacy. In this work, we have empirically investigated 40 diverse organizations on their motivations and approaches towards user privacy. Resources such as newspaper articles, privacy policies, and internal privacy reports that display information about organizational motivations and approaches towards user privacy were used in the study. We could observe organizations to have two primary motivations to provide end users with privacy as voluntary driven inherent motivation, and risk driven compliance motivation. Building up on these findings, we developed a taxonomy of organizational privacy approaches and further explored the taxonomy through limited exclusive interviews. With his work, we encourage authorities and scholars to understand organizational characteristics that define an organization’s approach towards privacy, in order to communicate regulations that enforce and encourage organizations to consider privacy within their business practices.

Paper # 80: Understanding the Formation of Information Security Climate Perceptions: A Longitudinal Social Network Analysis
Duy Dang-Pham, Karlheinz Kautz, Siddhi Pittayachawan and Vince Bruno

This research employed a longitudinal social network analysis (SNA) method, called stochastic actor-oriented modelling (SAOM), to analyse the inter-relationship between the employees’ socialisation and information security (IS) climate perceptions which are the employees’ perceptions of their colleagues and supervisors’ IS practices. Unlike prior studies, we conceptualised socialisation in the form of six networks: the exchange of work advice and of organisational updates, the provision of personal advice, interpersonal trust in expertise, the provision of IS advice, and support for IS troubleshooting. The adoption of the SAOM method enabled not only analysis of why an employee chooses to interact with or to send a network tie to another employee, but also how an employee’s perception of IS climate is affected by the ties that they possess in the network. This research suggests new directions for IS behavioural research based on the adoption of SNA methods to study IS-related perceptions and behaviours, while findings about the selection and influence mechanisms offer theoretical insights and practical methods to enhance IS in the workplace.
Paper # 81: A SECI-Based Knowledge Conversion Model of Business Process Capture
Diane Strode, Adrian Hargreaves and Jech Chung
Business process capture is a first step in the larger endeavour of business process management. In this paper, we view business process capture as a knowledge conversion process. We explore the conversion of knowledge when business analysts capture information about business processes from domain experts. We identify seven process capture activities in an analysis of comments made by business analysts in response to open-ended questions in an online survey. The seven activities are combining, confirming, engaging soft skills, involving, simplifying, tailoring, and training. We show how these activities involve the transfer of tacit and explicit knowledge between the business analyst and the domain expert and how the transfer conforms to the SECI modes of knowledge conversion, well known in the research domain of knowledge management. The paper contributes a SECI-based knowledge conversion model of business process capture and insight for business analysts about business process capture activities.

Paper # 83: A Model for Enhancing Human Behaviour with Security Questions: A Theoretical Perspective
Nicholas Micallef and Nalin Asanka Gamagedara Arachchilage
Security questions are one of the mechanisms used to recover passwords. Strong answers to security questions (i.e. high entropy) are hard for attackers to guess or obtain using social engineering techniques (e.g. monitoring of social networking profiles), but at the same time are difficult to remember. Instead, weak answers to security questions (i.e. low entropy) are easy to remember, which makes them more vulnerable to cyber-attacks. Convenience leads users to use the same answers to security questions on multiple accounts, which exposes these accounts to numerous cyber-threats. Hence, current security questions implementations rarely achieve the required security and memorability requirements. This research study is the first step in the development of a model which investigates the determinants that influence users’ behavioural intentions through motivation to select strong and memorable answers to security questions. This research also provides design recommendations for novel security questions mechanisms.

Paper # 88: Empirical study of user experience on mobile data collection for chronic low back pain
Tian Yu Goh, Frada Burstein, Pari Delir Haghighi, Flavia Cicuttini and Donna Urquhart
Design of mobile, personalised healthcare information systems facilitate a paradigm shift in management of chronic conditions. They provide an infrastructure for creating personalised treatment plans that are evidence based. This is especially important in chronic pain, which is a long-term condition and requires self-management by the patient. In this paper, we use a mobile accessible, web based system to collect daily reports on chronic low back pain. Based on this data a pain trajectory is generated to provide a report for patients to track their pain. We present an empirical study exploring the experiences of the participants, the usability, and issues that encompass frequent data collection using such systems in chronic low back pain.
Paper # 89: Revisiting McFarlan’s Risk Model for IS Implementation Success - Does Culture Matter?
Ada Yip, Lars Brehm and Christian Wagner
The majority of all IS implementation projects fails. McFarlan (1981) identified risk factors associated with organizational IT projects and created a model to predict project risk. The McFarlan Risk Model (MRM) provides a useful approach for the diagnosis and mitigation of IT project risks but can be improved in its predictive ability. In this paper, we suggest to augment the model, beyond its original three dimensions. Based on recent literature, which points to the importance of culture, specifically corporate culture, we develop an extension to McFarlan’s model and assess the added value of this extended model through the evaluation of two business cases. Expert evaluations using the Extended McFarlan Risk Model (EMRM) indicate higher predictive power in the differentiation of project success and failure, based on differences in the model’s culture dimension.

Paper # 94: Beyond 2D Product Presentation in E-commerce: A Literature Review
Wanxian Zeng and Alex Richardson
Product presentation in e-commerce has gained substantial attention from disciplines including information systems, marketing, psychology and management. Many studies compare newly emerging technologies and innovative presentation formats to traditional use of two-dimensional text and pictures. However, the emergent nature of these new technologies, like consumer focused virtual reality, results in instability of form and function in three-dimensional environments. This literature review synthesises the findings of extant literature, discusses important theoretical foundations and identifies the most popular research theories and research methods utilised. Additionally, it classifies constructs used to capture characteristics of presentation formats, consumers’ reactions and performance, as well as marketing-related effects (e.g. attitudes to product and purchase intention). Furthermore, some potential misinterpretation of terms used to describe product presentation have been identified. The literature review concludes with a discussion of implications and suggestions for future research of product presentation in e-commerce contexts.

Paper # 95: Value Creation in Digital Service Platforms
Osama Mansour and Ahmad Ghazawneh
Value creation is increasingly relevant for owners of digital service platforms. These owners have two vital goals: increase their service base and sustain their service offerers. A key element in continuously accommodating these goals is value creation. While the literature on digital service platforms is growing, there is a paucity of knowledge on the value creation process in these platforms. Drawing on a qualitative study of Uber drivers in Denmark and Sweden, we synthesize Schumpeter’s theory of value creation to develop an understanding of the value creation process in digital service platforms from the perspective of service offerers. As such, our study proposes and contributes a value creation framework for digital service platforms that identifies 8 value sources and highlights resource combination and exchange in the process of value creation.
Paper # 99: Open innovation in IT clusters: A comparative study of Indian IT organisations
Srimannarayana Grandhi, Prem Chhetri and Alemayehu Molla

Open innovation is built on the core principles of interactions, interdependence and exchange of knowledge. Clusters are believed to support organisations’ efforts to explore and source external knowledge, commercialise internal innovations and cause externalities through commercial activities. Early research on the innovation capabilities of regional clusters in Europe provides limited understandings of these cluster-based effects through which open innovation is fostered. This study investigates the role of clusters on open innovation practices relating to exploration and exploitation of external knowledge, knowledge sharing, acquisition and sale of IP rights of Indian IT organisations. The results reveal that organisations within a close geographic proximity actively participate in inbound and outbound activities and perform better in terms of innovation performance compared to the organisations outside the cluster. The findings are relevant to both the IT clusters and the IT innovation literature as this study sheds light on the role of clusters in improving an organisation’s innovation capabilities through open innovation.

Paper # 102: A Survey of Simulation Research in Information Systems Discipline
Yancong Xie

Simulation is a research method that abstracts real-world phenomena into laboratory experiments, through computational modeling. Despite its widespread adoption in natural sciences, simulation is less prevalent in social sciences, and rare in Information Systems (IS). To facilitate IS simulation research, this study conducts a content analysis, focusing on the use of simulation methods in IS. Coding schemes are developed to characterize literature from the AIS basket-of-eight plus Information & Management. Results demonstrate the adoption of simulation method is limited in IS, in amount, geographic range, topic-spread, and techniques employed. At the same time, findings too suggest strong simulation research into certain topics and in multi-level theorizing.

Paper # 103: Conceptualising and Understanding User Behaviour in Enterprise Social Networks: A Qualitative Analysis
Janine Hacker and Freimut Bodendorf

Along with the increasing number of companies introducing Enterprise Social Networks (ESN) in recent years, research on ESN user behaviour has proliferated. Yet, a detailed analysis of factors driving ESN user behaviour, that is, how users participate in ESN, is missing. Addressing this gap, in this paper, we explore ESN user behaviour and factors influencing usage in an Australian professional services firm. Based on a case study including 14 interviews with regular users of the case company’s ESN, we identify and characterise six general dimensions of ESN user behaviour. In addition, our analysis indicates ESN user behaviour to be influenced by a mix of individual factors and organisational factors. The contributions of this paper include a conceptualisation of user behaviour as well as a set of factors shaping ESN usage. For the management of ESN communities, our findings are hoped to inform initiatives aiming at reinforcing user engagement over time.
Paper # 113: Oral History in Information Systems Research: a reconsideration of a traditional tool  
Janet Toland

Oral history is a little used research technique in information systems, however even though it may seem a rather traditional tool, it is one that is worthy of reconsideration. Information technologies have now been around for over 60 years and scholars have begun to investigate the lessons that can be learned from studying their history. Despite the ready availability of online data, personal oral histories can add insights and a context that is missing elsewhere. This paper outlines the potential of oral history for information systems researchers, and explains how it differs from other interview techniques. Research was carried out with curators of relevant oral history repositories and the potential their collections offer for researchers is discussed. Examples are also given of research projects based on the use of oral history. The paper concludes by exploring the possibilities for wider use of this research method in the discipline.

Paper # 115: Understanding the Role of Social Media in the Assessment of Retailer-Hosted Consumer Reviews  
Bernhard Lutz, Nicolas Pröllochs and Dirk Neumann

Consumer reviews on retailer-hosted platforms present an internal source of information for customers before considering the purchase of a product. While related literature has established a strong link between review ratings and retailer sales, research that integrates external sources is still in its infancy. This is particularly true for the role of social media, in which user actions can induce other users to behave in a similar way. This paper thus examines the role of social media in the assessment of product reviews on retailer-hosted platforms. We find that a higher deviation of a review rating from a product’s social media popularity has a positive effect on the perceived helpfulness of the review. Moreover, we see that negative reviews are more likely to receive a helpful vote if the product enjoys substantial popularity on social media, we observe the opposite effect for products with low popularity.

Paper # 118: Coordination in Distributed Agile Software Development: A Systematic Review  
A B M Nurul Afser Talukder, Mali Senapathi and Jim Buchan

Agile methods incorporate many techniques that support coordination in co-located software development teams. However, these benefits do not necessarily transfer to a distributed context. Even though research on coordination in distributed agile software development is growing, there is limited rigorous research on its application in context. Further the extant literature is fragmented, with little cohesive building of cumulative knowledge on coordination in distributed agile software development. This study investigates the scientific evidence between 2006 and 2016 by conducting a systematic review of the literature on coordination in distributed agile software development. The search strategy resulted in 178 studies, of which 50 were identified as primary studies relevant to this research. The studies were classified using three high-level categories: (i) theoretical foundation and application, (ii) tools and techniques, and (iii) challenges. This study provides a structured overview of the current state of knowledge on coordination in distributed agile development, and identifies opportunities for future research.
Paper # 122: A Model of Business Intelligence Systems Use in Chinese Organizations
Yuri Song, David Arnott and Caddie Gao
The transferability of many Western-based information system theories to other cultures is under-researched. Business intelligence (BI) has topped CIOs’ technology priority list for years and BI is currently the largest IT spend. Chinese BI markets have great potential based on its fast-growth economy. Unlike the West, China adopts a different culture and a different management philosophy. This paper investigates whether Chinese culture changes our understanding of BI systems use. Guanxi and constructs from the unified theory of acceptance and use of technology (UTAUT) are applied in two large Chinese organizations, where UTAUT constructs cannot explain Chinese managerial BI use. A model of Chinese BI use (MCBIU), consisted of a foundation, an alignment, and an outcome layer, is proposed to fill this gap. This model is the major theoretical contribution of this paper. This paper also contributes to practice by improving Chinese managers’, BI consultants’ and developers’ understanding of the topic.

Paper # 125: Mining the Mind - Applying Quantitative Techniques to Understand Mental Models of Security
Nik Thompson and Tanya Mcgill
Mental models, informal representations of reality, provide an appealing explanation for the apparently non-rational security decisions of information technology users. Although users may be attempting to make secure decisions, the use of incomplete or incorrect information security mental models as a shortcut to decision making may lead to undesirable results. We describe mental models about viruses and hackers drawing on data from a survey of 609 adult IT users and link these to security behaviours and perceptions. We find that there are potentially just a small number of common security beliefs and suggest that accommodating mental models during security design may be more beneficial to long-term security than expecting users to change to accommodate security requirements.

Paper # 126: ‘Anti’-Social Media: Narcissism and Self-Control as Predictors of Facebook Self-Disclosure
Kathryn Parsons, Christopher Brittain, Dragana Calic and Mary Brushe
The personal information shared on Facebook can expose individuals to increased risk such as cybercrime and identity theft. While the perception of risk associated with online self-disclosure is increasing, this may not translate into risk management behaviours. This study explored why individuals choose to self-disclose on Facebook, often in spite of the risks. It was hypothesised that a personality style accentuated by impulsive and anti-social behaviour would help to explain this risk-behaviour dichotomy. In other words, individuals who are more narcissistic with less self-control were predicted to expose themselves to more risk on Facebook. An online questionnaire was completed by 263 Australians. This study found that individuals who had less self-control and higher narcissism exposed themselves to significantly more risk on Facebook. Hence, this study found that narcissism and self-control play a meaningful role in the risk-behaviour dichotomy.
Paper # 131: Online mediated sobriety: a conceptualization of the peer to peer social support mechanisms in an online “Stop Drinking” community
Mythreyi Velmurugan and Jason Watson
Online communities allow problem drinkers to seek help anonymously without the judgement present in the face-to-face world. This article investigates peer to peer online support in an online community of self-identified problem drinkers. A content analysis was performed on a “Stop Drinking” Reddit.com community and 26 themes of interaction, belonging to 9 categories were identified as key interactions likely to provide value to those seeking to instantiate or maintain sobriety. These themes were arranged into a conceptual model consisting of three dimensions of interaction namely: goal-based interaction; relationship-based interactions; and platform-interactions. The conceptual model created by this research should help those in recovery utilize online communities more effectively and provide insight into how peer to peer online social support can be deliberately utilized to promote sobriety.

Paper # 132: Towards a dynamic model of IT innovation in organisations.
Justin Thurley and Paul Turner
This research paper presents a multi-case study investigation of organisational approaches and experiences in IT innovation. It aims to extend the existing understanding of IT innovation by incorporating broader elements of contemporary innovation theory informed by an empirical investigation of real world IT innovation practice. The research methodology involved nine organisational cases being purposefully selected because of their involvement in the development, implementation and/or use of IT as part of self-reported IT innovation. Across the nine cases, four cases were selected from the IT producing sector and five from the IT user sector. The key findings associated with this investigation are presented in the form of a dynamic model of IT innovation, grounded in data relating to nine organisational case studies of IT innovation. This model emphasises the importance of mechanisms that combine domain knowledge with new and existing IT assets and capabilities to create platforms for continuous innovation.

Paper # 140: Digital Preservation of Cultural Heritage: An Ontology-Based Approach
Cokorda Pramartha, Joseph Davis and Kevin Kuan
The project aims to design and build a digital portal which will document, organise, and preserve aspects of Balinese cultural heritage and related knowledge for the benefit of the wider community and the younger generations in particular. We present the details of our research dealing with one aspect of Balinese culture, the Balinese traditional communication system (kulkul), undertaken in the Indonesian island of Bali. This knowledge is held largely in tacit form in the Balinese community and tends to be poorly documented and fragmented. A basic ontology of key kulkul-related concepts and terms and their interrelationships was developed to support the semantic searching and browsing of the online portal and related resources. Much of the content for the portal was acquired through community-based crowdsourcing. We also discuss the procedures employed evaluate the digital portal prototype.
Paper # 141: Analysis of the Total Cost of Ownership for Cloud Computing Technology Adoption: A Case Study of Regional Municipal Government Sector
Omar Massoud Salim Hassan Ali and Anup Shrestha

One of the key drivers of cloud computing adoption is usage-based IT service delivery alternative to on-premises IT infrastructure. Existing research supports the role of cloud computing for cost savings. We employed a mixed-method two-staged study to investigate the total cost of ownership of cloud computing in the local government sector of Queensland, Australia. The first qualitative study included 21 in-depth interviews of IT managers to understand the cost elements associated with cloud computing. This was followed by a quantitative study that analysed survey data collected from 480 IT staff across 47 local government organizations to investigate the impact of specific cost elements on cloud computing adoption. We found that cloud computing is perceived to save costs and more specifically for IT capital investments. However specific cost elements for training and operational costs may not reduce as expected. Research findings may assist to make investment decisions on cloud computing adoption.

Paper # 144: Value co-creation in the digital factory - The empowered role of shop floor workers
Shahper Richter, Matthias Trier and Alexander Richter

The current wave of digitalization has important implications for many organizations. In this article, we study how manufacturing companies can apply value co-creation as a comprehensive approach to embrace the potential of digitalization trends. By means of two case examples, we show the potential of better integrating shopfloor workers in the shaping of digital solutions and managerial actions. The improved consideration of cognitive needs and the provision of opportunities for social connection to a community of workers makes them feel more valued, confident, empowered and integrated. This can balance other forms of frustrations and negative emotions, leading to a better perception of the overall relationship experience at the shopfloor.

Paper # 146: Designing User Interfaces for the Elderly: A Systematic Literature Review
Connor Dodd, Rukshan Athauda and Marc Adam

A globally ageing population is more frequently required to utilize information systems as caregiving agencies and government policies adapt newer technologies to sustain efficiency. This unique user group commonly has difficulty with the solutions presented to them, and recent studies have focused on establishing the causes of these difficulties and possible solutions to them. However, these approaches are spread over a variety of technology domains (e.g. Mobile, Web, Desktop) and there seems to be little alignment between them, despite some obvious overlaps. In this paper, we conducted a systematic literature review to provide a structured overview of the current state of the literature regarding user interface development for elderly users over a variety of domains. Possibilities for future research and significant findings are also discussed.
Paper # 147: Issues of Implied Trust in Ethical Hacking
Georg Thomas, Oliver Burmeister and Greg Low
This paper discusses the issues of implied trust in ethical hacking. Ethical hackers are considered to be professionals and experts in their field. It is well documented that there is an implied trust toward professionals who are entrusted to undertake a task. Like many similar professions, such as ICT and computer forensics, there is no uniform or mandated code of ethics that an ethical hacker must adhere to. Given the nature of hacking and the potential for misuse and access to sensitive and confidential information, the need to ensure professionalism is maintained through ensuring competence and ethical behaviour is critical.

Paper # 149: Ethical issues around crowdwork: How can blockchain technology help?
Mary Tate, David Johnstone and Erwin Fielt
Crowdwork involves paid work organised through online platforms. As a relatively new form of employment, a range of issues have emerged around work practices and contractual arrangements between the three parties: task requesters, crowdworkers, and platform owners. In this paper we examine some of the issues associated with workers’ experience of crowdwork that have been raised in recent years. We then outline how the affordances offered by another emerging technology, blockchain, could be used to address some of those issues. Based on a conceptual, scenario-based exercise, we argue that there is considerable potential for blockchain technology to manage the transaction-based aspects of crowdwork processes and contractual arrangements to make them fairer and more transparent, but without necessarily incurring excessive overhead costs. However, despite the claimed “democratizing” effect of blockchain, some structural issues associated with managing work are not likely to be improved by blockchain-based solutions.

Paper # 152: Towards the Development of a DSS Supporting the Integration of Crowdsourcing in Theory Testing: Conceptual Framework and Model
Ijeoma Enwereuzo, Pedro Antunes and David Johnstone
The information systems (IS) discipline has not accorded the same attention to theory testing as it has to theory building. Further, crowdsourcing presents rich opportunities for the theory testing process that have not been fully explored. This paper builds on previous work, employing a design science research (DSR) paradigm in order to develop a decision support system artefact that will help early career researchers identify viable theory testing approaches, and how crowdsourcing can help facilitate the testing process. As part of the DSR build/evaluate cycle, this paper presents a conceptual framework and model of theory testing in IS, and the problem frame in which they are situated is evaluated using Schön’s theory of reflective practice and problem/solution framing. Data collected from PhD students revealed an incomplete level of knowledge of theory testing, and a lack of awareness of the possibilities provided by adopting a crowdsourcing strategy.
Paper # 162: An Exploratory Study Into the Use and Value of Environmental Enterprise Systems
Giang Hoang, Alemayehu Molla and Pak-Lok Poon

Environmental enterprise systems (EES) are an emerging type of integrated enterprise-grade software developed for environmental sustainability. This paper reports an exploratory investigation into the use and value of EES based on case studies of an EES vendor, four organisations that have adopted EES and an organisation that has yet to adopt EES in Australia. Two levels of EES usage are found: basic and advanced (in a relative sense). The basic level spurs the development of EES best practice and systemic competence in terms of environmental data capture, integrated energy, waste, emission and water database and ability to generate different reports with ease and high level of quality, thereby leading to environmental operational value. The advanced level, however, goes beyond basic EES affordances, to create EES-enabled distinctive capabilities such as innovation in terms of energy optimisation of assets, risk management and analytics for achieving environmental strategic value. Based on the findings, this paper highlights a pathway for harvesting environmental value from EES without affecting the economic aspect of an organisation.

Eui Dong Kim, Kevin K. Y. Kuan, Milan Vaghasiya, Naren Gunja, Jonathan Penm and Simon Poon

For technology to improve productivity, efficiency, and safety in healthcare setting, an essential prerequisite is utilization by its users. Existing theories about technology acceptance mostly deal with voluntary systems, but many systems used in healthcare settings are mandatory systems, so other outcomes rather than the usage or use itself need to be considered in applying existing models to mandatory health information systems. Thus, the focus is moving on user satisfaction. Also, there is a need to see if the technology acceptance leads to the organisational benefits because investments on the technology should show a return as other investments normally do. This research assumes that major constructs of UTAUT (Unified Theory of Acceptance and Use of Technology) increase user satisfaction and organisational benefits, and aims to integrate existing theoretical frameworks to explain user’s evaluation of mandatory information systems and its impacts in healthcare setting.

Paper # 175: An Information Systems PhD by Artefact and Exegesis?
Dale MacKrell, Craig McDonald and John Gammack

In this conceptual paper, we speculate on the possibility that a PhD by Artefact and Exegesis (A&E) may be legitimate in the Information Systems (IS) discipline. Research, as creative process and product with the intention of yielding new knowledge, takes many forms across the spectrum of academic disciplines. Other disciplines, particularly in the humanities’ fields of arts and design, have artefacts as a discrete part of their PhD product accompanied by an exegesis of one form or another. It may be that some research in the IS discipline lends itself to the A&E approach. This paper considers A&E PhDs in Humanities and practice-related research more generally. We investigate how A&E might apply to IS research through comparison with the design science approach. We suggest tentative impacts on candidates, supervisors and examiners then conclude with critical issues and open questions raised by our investigations.
Paper # 176: Practice of Design Science Research in a Developing Country: Circumscription Knowledge Informed by the Socio-cultural Context
Mallika Robinson, Ahmed Imran and Michael Barlow

Technology-mediated participatory systems facilitate collaborative effort by citizens, enhancing the opportunities to address large-scale problems such as those arising out of climate change. Following a design science research (DSR) methodology, we present and instantiate a design framework in a developing country, India. Results from instantiation and analysis of participant interviews reveal a critical aspect to the practice of DSR: in contexts with minimal circumscription knowledge, meta-requirements informing the design can be extracted not only from kernel theories, but also be revealed from investigating their fit to the local context. This study expands the domain of research in information systems (IS) by addressing a novel theme - the provision of information and communication technology (ICT) resources for community collaboration and highlighting the innovation for its design based on socio-cultural context. We also extend ICT for development by illustrating how the reconstitution of IS innovation within the context occurs: locally understood and negotiated socio-cultural mores interacting with ICT, giving rise to an ‘emergent’ culture.

Paper # 180: Convergence Behaviour of Bystanders: An Analysis of 2016 Munich Shooting Twitter Crisis Communication
Deborah Bunker, Milad Mirbabaie and Stefan Stieglitz

Previous research on the use of social media during crises has examined Volunteered Geographic Information (VGI), which describes the intentional communication of information to organisations or individuals in an attempt to influence their convergence behaviour in order to impact the event outcome. These convergence behaviours can be categorised into archetypes which have two different role types: (1) active crisis involvement (returnees; helpers, exploiters; detectives or manipulators); or (2) passive crisis bystander (anxious; curious; fans (or supporters); and mourners). Until now, little has been known about the use of social media crisis communications to influence convergence behaviour especially that of passive crisis bystanders. To investigate this phenomenon we conducted an analysis of the 2016 Munich Shooting social media crisis communications (Twitter) by collecting 672,871 tweets in connection to the shooting. We examined 1,651 tweets containing GPS data and firstly classified their authors into convergence behaviour archetypes identified from the literature, as well as those that additionally emerged from our data analysis. We then analysed the tweet location, frequency and the subject of each tweet i.e. the tweet content, by convergence behaviour archetype. Our findings revealed that across all convergence behaviour archetypes both active and passive (apart from one i.e. the impassive) tweet volumes increased the further individuals were from the event. The close proximity of the impassive to the event, however, saw an increase in their tweet volume with a focus on personal, location and other news content. This implies that this bystander archetype may have the ability to impact and influence an event, as a passive and rational “eye-witness” by gathering and sharing information close to where the event is occurring.
Paper # 181: Intelligent Medical Case Based e-Learning System
Saleem Ameen, Soyeon Han, Yingru Lin, Minjae Lah and Byeong-Ho Kang
Educational theory has purported the notion that student-centric modes of learning are more effective in enhancing student engagement and by extension, learning outcomes. However, the translation of this theoretical pedagogy of learning into an applied model for medical training has been wrought with difficulty due to the structural complexity of creating a classroom environment that enables students to exercise full autonomy. In this paper, we propose an intelligent computational e-learning platform for case-based learning (CBL) in Medicine that enriches and enhances the learning experiences of medical students by exposing them to simulated real-world clinical contexts. We argue that computational systems in Medicine should not merely provide a passive outlay of information, but instead promote active engagement through an immersive learning experience. This is achieved through a digital platform that renders a virtual patient simulation, which allows students to assess, diagnose, treat and test patients as they would in the real-world.

Paper # 183: The shifting sand of program coordination effort: lessons from IT-enabled transformation programs
Muhammad Rasheed Khan, Walter D. Fernandez, James J. Jiang and Gary Klein
This paper reports on a study of major Australian organisations that are using programs to achieve strategic transformation of their work. While the program management literature has focused on the coordination of the multiple projects and related operational activities within the programs, little is known about how these programs deploy efforts to coordinate activities in response to contextual pressures. This exploratory, multi-case study asserts that a significant effort is needed to coordinate responses to factors external to the program. In addition, this study shows the key internal and external forces that combine in shifting the locus of effort in coordinating and integrating multiple activities and projects in major transformation programs.

Paper # 184: Scaling Agile at the Program Level in an Australian Software Vendor Environment: A Case Study
Ramesh Lal and Tony Clear
Set in the context of an Australian software vendor for a global enterprise product, this paper explores the roles and practices that have evolved as the company scales from its already well established agile software teams, to agility at the enterprise level. With a focus on roles and practices at the program level within a Disciplined Agile Delivery framework, this study adds to the limited body of research into the process and impact of scaled agile approaches in software vendor environments.
Paper # 194: Developing a Framework towards Design Understanding for Crowdsourcing Research: A Content Analysis
Shah Jahan Miah, Najmul Hasan, Don Kerr and John Gammack

Whilst IS academics have increasingly recognised the essence of Crowdsourcing systems for producing information from a large group of people, relevant knowledge of such solution design is still underdeveloped. Existing studies on the Crowdsourcing literature reveal that of the further research directions outlined, none discuss the investigation of Crowdsourcing from an IS design perspective. Through a systematic literature review of over 14 premier IS journals (2010-2017), we found 255 articles of which 63 were suitable for our analysis. From these papers, we identified the gaps in application areas and design issues. We suggest that IS research techniques will demonstrate models, issues, approaches and gaps to inform future research. We identify five application purposes and ten design issues, from the stakeholders and development techniques involved. The analysis suggests Crowdsourcing is an emerging field to which design science could be particularly appropriate.

Paper # 196: An Analysis of Design Science Research Adoption in Doctoral Projects in Australia
Aileen Cater-Steel, Mark Toleman and Mohammad Mehdi Rajaeian

In the Information Systems (IS) discipline, Design Science Research (DSR) is distinctive; creating knowledge through the design of novel or innovative artefacts, and analysing the artefacts’ use or performance. We present an analysis of DSR doctoral theses published in Australia for the period 2006-2017. Our purpose is to understand the extent and diversity of DSR applied by the Australian IS community in particular by doctoral candidates. We selected the theses from the Australian national repository and analysed their content. The findings suggest that 1) DSR is evolving and maturing in this cohort, 2) DSR theses have resulted in various artefacts and scholarly publications, 3) candidates’ ability to theorize about their work remains a challenge, and 4) nomenclature in DSR remains a problem and the whole IS community should strive for consistency. This paper contributes towards our understanding of DSR as a research approach and offers recommendations to the DSR community.

Paper # 197: Contribution in Information Systems: Insights from the Disciplinary Matrix
Dirk Hovorka and Sebastian Boell

Contribution in Information Systems (IS) research is a significant concern for authors, reviewers and editors. We argue that the criteria of novelty and utility are insufficient to evaluate the contribution of a research paper. We expand upon Kuhn’s disciplinary matrix of shared commitments to symbolic generalization, exemplars and model/theory as the background to which every contribution is oriented. Cogency or persuasiveness of research is the result of logic, dialectic, rhetoric, and social-institutional argumentation in relation to the disciplinary matrix. We use three examples of published research to illustrate how these elements can be combined to frame research as a contribution in relation to the wider IS field. Lastly we discuss the implications for IS when contribution is understood in relation to a disciplinary matrix.
Paper # 198: Readmission risk prediction for patients after total hip or knee arthroplasty
Isabella Eigner, Lukas Tajak, Freimut Bodendorf and Nilmini Wickramasinghe
Hospital readmissions are an important quality measure in healthcare, as they can indicate issues in treatment, rehabilitation, or discharge management. Furthermore, readmissions are often associated with increased costs resulting from penalties and regulations enforced by policy makers and insurers. Several studies have been conducted in order to identify patients at high risk of readmission, especially focusing on the initial diseases addressed in the Hospital Readmissions Reduction Program (HRRP), acute myocardial infarction (AMI), heart failure (HF), chronic obstructive pulmonary disease (COPD), and pneumonia (PN). Since elective primary total hip arthroplasty and total knee arthroplasty (THA/TKA) procedures are added later to the HRRP, research on risk prediction in that area is still quite scarce. This study focuses on total hip arthroplasty and total knee arthroplasty procedures. Based on a dataset from a not-for-profit Australian healthcare group, 10,872 admissions from 2011 to 2015 are utilized to build several predictive models for readmissions after THA/TKA procedures. The structure and application of these models are presented and benchmarked against current hospital risk scores, resulting in a good prediction power to identify patients at 28-day risk of readmission.

Stefan Stieglitz, Florian Brachten, Björn Ross and Anna Jung
So-called ‘social bots’ have garnered a lot of attention lately. Previous research showed that they attempted to influence political events such as the Brexit referendum and the US presidential elections. It remains, however, somewhat unclear what exactly can be understood by the term ‘social bot’. This paper addresses the need to better understand the intentions of bots on social media and to develop a shared understanding of how ‘social’ bots differ from other types of bots. We thus describe a systematic review of publications that researched bot accounts on social media. Based on the results of this literature review, we propose a scheme for categorising bot accounts on social media sites. Our scheme groups bot accounts by two dimensions - Imitation of human behaviour and Intent.

Paper # 207: Strategies and Influence of Social Bots in a 2017 German state election
Florian Brachten, Stefan Stieglitz, Lennart Hofeditz, Katharina Kloppenburg and Annette Reimann
As social media has permeated large parts of the population it simultaneously has become a way to reach these masses e.g. with political messages. One way to efficiently reach this goal is the application of automated computer programs that aim to simulate human behaviour - so called social bots. These bots are thought to be able to potentially influence users’ opinion about a topic. To gain insight in the use of these bots in the run-up to the German Bundestag elections, we collected a dataset from Twitter consisting of tweets regarding a German state election in May 2017. The strategies and influence of social bots were analysed based on relevant features and network visualization. 61 social bots were identified. Possibly due to barriers in language as well as the elections regionality, identified bots showed no signs of collective political strategies and low to none influence. Implications are discussed.
Paper # 210: Knowledge Sharing and Innovative Work Behaviour: A Case Study from Vietnam
Van Dong Phung, Igor Hawryszkiewycz, Daniel Chandran and Binh Minh Ha
This study aims to examine the influence of environmental and personal factors on knowledge-sharing behaviour (KSB) and whether more leads to superior innovative work behaviour (IWB) at tertiary level in Vietnam. Our case is Hanoi University (HANU), one of the Leading Public Universities in Vietnam. This study applies the structural equation modelling (SEM) to investigate the research model based on social cognitive theory. Based on a survey of 320 academic staff at HANU, the results show that two environmental factors (subjective norm, trust) and three personal factors (knowledge self-efficacy, enjoyment in helping others, and reciprocity) significantly influence KSB. The results also indicate that employee willingness to share knowledge enable the organisation to promote IWB. It is hoped that academic staff and university leaders from other countries may find the case study useful for deeper understanding of the effects of social influences, personal perceptions and KSB on IWB in the future.

Paper # 211: Design Principles (DPs) for Building Social Media Enabled Collaborative Learning Environments (SMECLEs)
Cathal Doyle, David Sammon, Karen Neville and Kristijan Mirkovski
Twenty years ago, it was proclaimed that collaborative technologies were able to impact the learning environments of educational institutions. Despite research indicating that these collaborative technologies could impact the learning environments in a positive way, no change occurred. Twenty years later, the same claims are being made, where a new collaborative technology, social media, is being proclaimed to be able to impact the learning environments of education institutions, by changing, and possibly improving, the learning approach. However, while these calls are being made, there is currently a lack of understanding on whether social media platforms are effective at enabling collaborative learning. To address this lack of understanding, it is first necessary to create prescriptive knowledge on how we can build collaborative learning environments with the platforms of social media, which this study does.

Shah Jahan Miah, Rashadul Hasan, Najmul Hasan and John Gammack
Healthcare service systems require care follow-up procedures using clinical practice guidelines targeting specific patient groups. Studies have introduced various methods for providing patient care, but system design for follow-up support remains limited to a few specific types of disease management. A general need is identified in a climate of increased demand on fewer doctors, for which mobile systems can provide solutions. In this paper, we present a post-treatment follow-up Decision Support framework for use by patients and physicians. The proposed care support is cloud-based and offers online and asynchronous Patient-Physician interaction, with a ratings system designed to ensure continuing improvement in outcomes. Using a design science research process the solution framework has been prototyped and evaluated with representative physicians and users. Our framework provides a model for extending care service systems to inform better follow-up decision-making.
Sander Paul Zwanenburg
The literature on the development of measurement help researchers consider two broad issues: the qualitative tasks of conceptually modelling constructs and operationalizing them in a set of indicators and the more quantitative issues of using estimation procedures to convert their data into estimates. While these issues are interdependent, these two streams of literature have been largely separate. We aim to contribute toward the establishment of integral guidance on measurement development. We propose a conceptual framework that should connect more explicitly the qualitative issues of measurement design with its quantitative issues. By analysing common sources of error, we show how it can be used to identify the sources of error specific to a measurement. We further provide initial guidelines on how problematic indicators can be remedied. Finally, we suggest how future research could take a next step in synthesizing qualitative with quantitative issues to provide more integral guidelines.

Paper # 225: Is FinTech a Disruption or a New Eco-system? An Exploratory Investigation of Banks’ Response to Fintech in Australia
Osemwonyemwen Oshodin, Alemayehu Molla, Stan Karanasios and Chin Eang Ong
The emergence of FinTech companies has drawn much speculation about their potential to disrupt incumbent financial institutions and take as much as 20% of their earnings by 2020. While time will tell about these predcitions, one emerging reality is that FinTech is creating a new ecosystem where the structure has incumbents, start-ups and tech firms forming alliances, partnerships, and investments. This paper investigates how Australian banks are assessing and developing initiatives within the FinTech ecosystem. We draw from the concepts of sensing and responding to analyse more than 3000 news articles, reports, and press releases covering the period 2008-2014 from four Australian Banks. Within the limitations of the method, our findings indicate that Australian Banks are actively embracing FinTech by creating mechanisms for inbound FinTech knowledge flows, monitoring and facilitating FinTech activities of start-ups, crowd-sourcing FinTech ideas, launching hubs to encourage internal FinTech innovations, modernizing their platforms with the adoption of technologies commonly associated with startups and investing in Fintech start-ups. These findings indicate banks’ continuous adaptive behaviour and open avenue for future research.
Paper # 229: A Critical Analysis of Inter-Coder Reliability Methods in Information Systems Research
Alireza Nili, Mary Tate and Alistair Barros
Qualitative researchers in business and management information systems fields often need to employ a method of inter-coder reliability to test the trustworthiness of the findings of their content analysis. A suitable method for checking the inter-coder reliability enables researchers to rigorously assess the degree of agreement among two or more independent qualitative coders. By employing this method, researchers can identify mistakes in the content analysis before the codes are used in developing and testing a theory or a measurement model and avoid any associated time, effort and financial cost. However, little guidance is available on what method of inter-coder reliability check should be used. In this paper, we present a critical analysis of these methods that are suitable for qualitative business and management IS research, and provide an example of how we employed the most rigorous method among these methods for a qualitative behavioural IS study.

Paper # 234: Effect of Self-efficacy and Emotional Engagement on Introductory Programming Students
Geetha Kanaparan, Rowena Cullen and David Mason
High failure rates appear to be a norm in introductory programming courses. Many solutions have been proposed to improve the high failure rates. Surprisingly, the solutions have not brought significant improvements to the performance of students in introductory programming courses. Instead, there appears to be a gap in understanding the relationship between self-efficacy, emotional engagement and the performance of students in introductory programming courses. Enjoyment, interest, and gratification were identified as three emotional engagement factors in introductory programming courses from prior literature and from focus groups. An online survey on 433 students in introductory programming courses showed that the students' programming self-efficacy beliefs had a strong positive impact on enjoyment, while gratification and interest had a negative impact on programming performance. These findings have implications for course instructors who design and deliver introductory programming courses.

Paper # 238: Organisational Cyber Resilience: research opportunities
Seyyedehsaba Bagheri and Gail Ridley
Cyber resilience is a new discipline that has emerged in recent years to help organisations and other communities to deal with cyber problems that cannot be addressed by traditional cyber security solutions. This study first identified the scattered literature on organisational aspects of cyber resilience, and then analysed its nature by categorizing the publications found using Linkov et al.'s (2013a) framework for cyber resilience matrix. Three approaches were identified among the studies. This research found that the organisational aspects of cyber resilience have been given less attention when compared to technical topics. Limited investigation into organisational cyber resilience was found. The findings also challenge the passive assumption of cyber resilience that appear to underlie many of the publications, which followed a cyber security approach. The limited work found, gaps in research subtopics and the underlying assumptions of organisational cyber-resilience, point to many research opportunities for researchers.
Debbie Bowman and Dirk Hovorka

The challenges and opportunities presented by digital technologies are placing growing pressures on present-day businesses to be increasingly innovative. With these pressures, tensions become visible between organisations as engines of efficiency and organisations as entrepreneurial innovators. In this analysis, we look at how routine and stability as core requirements for business practice and competitive advantage in engines of efficiency may limit organisations' ability to innovate. It becomes apparent that these tensions are at the heart of how the corporation defines itself in terms of its worldview, culture, knowledge creation processes and practices: its epistemic stance. A conceptual analysis of the literature focuses on epistemic stance and innovation and the concept of the efficiency engine. The resulting framework is used to interpret the behaviour and practices of Tesla Inc; a company which epitomises entrepreneurial innovation to redefine and reconceptualise transformation of the automotive and energy markets. The differences in epistemic stance provide insights into the struggle of corporate innovation configurations in achieving high-impact innovation.

Paper # 250: Exploring Social Media Affordances in Natural Disaster: Case Study of 2015 Myanmar Flood
Khet Khet Oo Tha, Shan L Pan and M.S. Sandeep

This study examines the emerging use of social media in complex social phenomena, natural disasters. By adopting an affordance perspective, we focus on how local communities harness the power of social media in disaster response. Using an interpretive approach, we identify different affordances of social media and examine how these affordances enable local communities to respond to disaster situations and achieve social outcomes in the case of 2015 Myanmar flood. The lack of theoretical development in research on societal consequences of emerging technologies (e.g. social media) makes this study timely, relevant, and worthwhile. Our findings demonstrate that social media transformed the way citizens, organizations, emergency responders, and government think and act creatively, improvising new means of addressing the challenges posted by a disaster. This study generates theoretical and practical implications for understanding the role of social media in addressing societal challenges in developing countries.

Paper # 251: An Assessment Framework to Determine the Strategic Value of IT Architectures in Smart Grids
Iván S. Razo-Zapata, Anup Shrestha and Erik Proper

As traditional power grids are transformed with the concept of smart grid (SG), it is imperative for utilities companies and governments develop standard roadmaps on their path to improve SG operations. While there are different approaches to assess SG projects, there is limited interest at valuation of SG elements beyond cost factors. We adopted a design science research method to develop an assessment framework based on three components: the Smart Grid Architecture Model (SGAM) as the reference model, the adapted Bedell’s method as the assessment method and a Decision Support System to perform assessments. We evaluated our framework in a real world case study within a blockchain-inspired European project. The new assessment framework is useful to value the importance and effectiveness of SG projects. The framework offers a holistic valuation that may help energy companies to tackle challenges other than economic issues such as energy efficiency and carbon emissions.
Paper # 255: Choosing a Design Science Research Methodology  
John R. Venable, Jan Pries-Heje and Richard L. Baskerville  
Design Science Research (DSR) is a popular new research approach and paradigm, for which a number of research methodologies have been developed. One of the challenges facing researchers wanting to apply this new approach is the choice of research methodology. In this paper we give an account of six DSR methodologies and we compare them using a Design Science Research Methodology Comparison Framework that we adapted from an existing Information Systems Development Methodology Comparison Framework. Based on the outcomes of the comparison, we develop a set of technological rules that forms a contingency-based framework to support Design Science Researchers in choosing an appropriate and well-suited DSR methodology, depending on the contingencies of the situation at hand.

Paper # 256: TRiDS: Treatments for Risks in Design Science  
John R. Venable, Jan Vom Brocke and Robert Winter  
Conducting Design Science Research (DSR) has many risks. Extant literature, such as the Risk Management Framework for Design Science Research (RMF4DSR), provides advice for identifying risks, but provides few suggestions for specific treatments for the kinds of risks that potentially plague DSR. This paper analyses known DSR risks from RMF4DSR, augments them with other risks identified, and develops a purposeful artefact (TRiDS: Treatments for Risks in Design Science), which provides 46 specific suggestions for treating known risks in DSR. The treatments identified are classified into 13 different categories and reference is made to relevant literature for guiding the application of each treatment. The treatment suggestions and guidance serve as a supplement to existing frameworks and methods for risk identification and management in DSR.

Paper # 264: The Interface of IT Capabilities and Disruptive Innovations  
Abayomi Baiyere  
Studies have shown that the ability of an organisation to create or respond to disruptive innovation depends on how it can deploy its capabilities. IT/digital capability remains an essential capability when reconfiguring an organisation to leverage disruption. However, researcher and practitioners are still trying to understand how an organisation’s IT capability can be leveraged in these situations. This paper conceptually explores possible roles of IT capability in disruptive innovation scenarios. By synthesizing the current state of knowledge about both concepts, we highlight how prior IT capability research potentially contributes to our knowledge in this domain. The concepts of “disrupt-ability and disruptability” are advanced as dimensions of IT capability that explain the capacity of an organization’s IT capability to serve as an enabler, a sustainer or a barrier in disruptive innovation.
Research In Progress Paper Abstracts

Paper # 5: A Typology of Knowledge Co-creation in Social Networks
Fatuma Namisango and Kyeong Kang
Creating new knowledge is a core process in managing and enabling knowledge especially though socialisation in social networks. The social nature of social technologies and knowledge creation attracts research on knowledge creation in social networks. Social technologies a less costly but yet collaborative and diverse platforms for social networking, creating new knowledge and leveraging personal and collective knowledge. Building a knowing organisation may extend beyond knowledge sharing into creation of new knowledge. This paper explores existing aspects regarding joint creation of knowledge “knowledge co-creation” in social networks. The paper demonstrates how the empirical ideas on co-creation can be useful in exploring knowledge co-creation. This discussion explores and introduces the scope of knowledge co-creation in online social networks. We derive a typology of knowledge co-creation that suggests pathways and hypothetical propositions into exploring knowledge co-creation of in social networks.

Paper # 14: Challenges Concerning Data-Driven Innovation
Stefan Cronholm, Hannes Göbel and Peter Rittgen
Digital transformation is highly relevant to most organisations in the business and the government sectors. One important aspect of digital transformation is the capability to exploit data in order to develop new services. For a number of businesses, this capability has become an imperative to their survival in an ever more competitive market. Today, data exploitation is of vital importance for innovation and economic growth. However, there is a lack of consolidated knowledge about the challenges of managing processes for service innovation. The purpose of this study is to elaborate on challenges concerning data-driven service innovation. We have used the Grounded Theory approach to identify such challenges which are: lack of a systematic process, problems with data access, distrust of data, lack of appropriate digital tools and insufficient competence. Our conclusions reveal that data is rarely used as a strategic resource in data-driven service innovation and that there is a lack of data management.
Paper # 18: Supporting Customized Design Thinking Using a Metamodel-based Approach
Dominik Bork, Igor Hawryszkiewycz and Dimitris Karagiannis

Traditional design methods, based on analytical rationale, often cannot address upcoming challenges e.g., related to the digital business transformation in volatile environments. Analytical rationale assumes a particular result and provides the methods and tools for achieving it. Nowadays, however, the result of a business transformation is often not precisely known nor the ways and means to achieve it. As a result, methods and tools are required that foster creativity while allowing customization to specific requirements or stakeholder needs. This paper proposes customized design thinking processes, realized with a conceptual modelling approach. The approach supports creativity in transformative business design. It shows how numerous design thinking tools can be integrated into a single conceptual modelling approach - supported by a modelling platform. The platform facilitates efficient and flexible design of novel business solutions. The created models moreover serve as a formalized knowledge base that enables knowledge processing and reuse.

Paper # 30: The perceived public value of social media in Queensland local Councils
Ahmed Attiya, Aileen Cater-Steel, Jeffrey Soar and Shahab Abdulla

The use of social media technology (SMT) has become a mainstream activity in private and business sectors. SMT is believed to be an important component of information technology in the public sector. Measuring the ability of SMT to interact with citizens to create public value is one of the key issues facing local government in their adoption of SMT. Merely having a social media icon on a webpage does not demonstrate usage of SMT, nor does it necessarily create value nor improve interaction with citizens. This study aims to research the public value of SMT, and specifically, how citizens perceive social media value in Queensland local councils. A sample of 20 urban and rural local councils that have the most experience in SMT for interaction with citizens and those that also have a large number of social media users was selected for a survey of their residents. This study aims to evaluate citizen perspectives on the public value creation of using SMT with local councils.

Paper # 50: Towards an understanding of how and why Design Science Research scholars evaluate
Emanuel Stoeckli, Gerard Neiditsch, Falk Uebernickel and Walter Brenner

Evaluation activities in Design Science Research not only verify utility but also scientific rigour and the truth-like value of prescriptive knowledge contributions. Assuming a lack of guidance, evaluation frameworks like the one of Sonnenberg and vom Brocke have been proposed prior to evaluating their actual utility to scholars. This research now aims at evaluating how scholars actually apply the framework in practice and their reasoning for doing so. The research-in-progress paper at hand presents preliminary results from a citation analysis. We find an emphasis on ex-post evaluations in artificial settings and a lack of comprehensive detail on ex-ante evaluation activities. The call to accumulate incremental prescriptive knowledge has mostly been ignored and artifact changes are rarely disclosed. Therefore, we question the missing guidance as the sole reason that scholars emphasise building rather than evaluation. We propose to a conduct case study that investigates the reasons behind scholars’ evaluation decisions.
Gustaf Juell-Skielse and Anders Hjalmarsson
As digital technology becomes embedded in the core of customer offerings, companies find themselves being part of dynamic networks and must develop more open and distributed innovation processes. However, important and mature industrial domains, such as the automotive sector, find it difficult to fully utilize digital technologies due to closed innovation processes. Therefore, automotive companies try to attract external software developers by establishing new organisational forms for open digital innovation. Yet, the understanding of the problems that the organizational forms are expected to solve, how the organizational interventions should be designed and their effects on digital innovation are uncertain. Therefore, our goal is to contribute with knowledge of how the automotive industry can accelerate digital innovation by mindfully selecting and designing appropriate organisational interventions for open digital innovation. In this research in progress paper, we present a two-year action design research project and contribute with initial empirical results on the problems with open digital innovation in the automotive industry, a comparison of organisational forms for open digital innovation, based on a literature review and an assessment of the organizational forms’ potential to overcome the problems. The next step is to perform a structured literature review, and to design and implement an organizational intervention to facilitate a first iteration of externally initiated innovation cases.

Paper # 56: IO Vision - an integrated system to support the visually impaired
Sheetal Datt, Mali Senapathi and Farhaan Mirza
There are many navigation systems for the visually impaired but few among them provide seamless integration of indoor - outdoor navigation. This paper reviews navigation systems that are currently available for the visually impaired and proposes the Indoor-Outdoor Vision navigation system (IO Vision) that will make navigation easier in both indoor and outdoor environment. The findings reveal that while there are many systems that support either the outdoor or indoor navigation, systems that provide seamless integration of both indoor and outdoor navigation are extremely limited. This study proposes the development of an integrated system that combines the features of indoor and outdoor systems. A long-term goal of this research is to develop a self-contained system that utilizes the principles of Geographical Positioning System (GPS) and Geographical Information System (GIS) in association with Radio Frequency Identifiers (RFID) and sensors to support the navigation of the visually impaired.
Paper # 61: The Importance of Reliable Information Sources for Prospective Medical Travellers
Julie Fisher, Alan Petersen and Frada Burstein

More people are travelling overseas for health or wellness reasons however, there is limited understanding of the background of those travelling and how information is sourced for decision making. Those travelling for treatment are likely to be unaware of all of the risks. Reliable information sources are scattered and not easy to find. Interviews were conducted with 51 Australians contemplating or who had travelled for stem cell treatment. Information sources people used were identified, and an analysis was undertaken of how this influenced their decision. The data highlight that health travellers are likely to search extensively using a wide range of sources including information on clinics’ websites, Facebook, blogs, friends and family. Interviewees highlight that often decisions are made based on unreliable sources. The implications are that without quality, reliable information health travellers are at risk of suffering adverse outcomes and spending significant funds without any improvement in their condition.

Paper # 64: Opportunity Costs during PhD Enrolment: An Innovative Information Systems Research Training Programme
Guy Gable, Yancong Xie and Mohammad Onik

Expectations of completing PhDs for job readiness, are increasing. Information Systems (IS) PhDs face the challenge of appreciating the multidisciplinary and multi-paradigmatic diversity of the discipline, demanding a breadth of knowledge beyond that expected in many other disciplines. In addition, PhD students in Australian universities are constrained to a 3+ year enrolment, as compared for example, to the more common 4 and 5 year enrolments in North American universities. These demands require that IS PhD students in Australia be synergistic in their choice of activities during enrolment. With the aim of maximizing the value of the PhD experience, the study reported herein explores synergy between research and teaching. More specifically, this research-in-progress (RIP) paper reports a programme design for training PhD students, from involvement as supervisors of coursework Masters students’ research projects.

Paper # 67: The Role of Big Data Analytics on Innovation: A Study from The Telecom Industry
Amani Al-Jaafreh and Amjad Fayoumi

Organisations are looking for new definitions and guidelines for innovation direction due to the changing nature of technology, user behaviour, competition and market trends. Data sources, types and analysis mechanisms have changed dramatically in the last few years, and there are pieces of evidence that these are influencing the level of innovation in a firm. We found that it is very important to explore how telecom companies capture, analyse and make innovation insights from big data. Our review shows a clear scarcity of research on this topic. The study aims to use qualitative methods of both interviews and documents review in three telecom companies in Jordan, with an opportunity to extend the study to different regions and countries. The understanding of how big data and its analysis are carried out by companies will support our effort in building more systematic procedures and guidelines for companies who wish to utilise big data for different types of innovation with different levels of maturity indicators.
Paper # 69: The Role of IT and Knowledge Management Capabilities in Generating Innovation Knowledge in Telecom Companies
Amani Al-Jaafreh and Amjad Fayoumi

Telecom companies face a fierce competition from innovation based start-up companies, particularly those that are using internet networks to offer communication services through the voice and video over internet protocol (VoIP & PVoIP) technologies. More than 10 years have passed from the time the internet and VoIP were widely used, but still, telecom companies are having a great deal of business success through offering a wide spectrum of services, products, deals, and packages to consumers using both B2C and B2B models. The future landscape of how telecom companies will evolve in the market is still not clear, particularly with the increase of aggressive competition from companies that are technology-innovative and starting to deliver new forms of ubiquitous communication technology and services. Understanding why and how telecom companies innovate in the market is very crucial in order to predict the future of this business sector. In this paper, we argue that telecom companies are utilising their capabilities that have a significantly important role in fostering innovation, namely information technology (IT) capability and knowledge management (KM) capability. IT capabilities have changed dramatically in the last few years with the introduction of intelligent systems, big data analytics, the Internet of Things and the wide use of mobile apps and sensors. It is not clear how these technologies play a role in telecom companies’ innovation and it is not clear whether IT impacts innovation directly or if KM capability has a mediation role in utilising technology to support innovation. This paper is a position paper to establish grounds for understanding how telecom companies innovate, and in particular how IT and KM capabilities influence innovation. We outline the methodology of this investigation as a qualitative study with stakeholders from multiple telecom companies and we expect at the end of the study to be able to offer a holistic view on the way these companies innovate in regard to their products and services. We aim at providing a cross case studies comparison towards a prediction of the future of the telecom business sector.

Kent Ramchand, Mohan Baruwal Chhetri and Ryszard Kowalczyk

Most organisations moving their legacy systems to the cloud base their decisions on the naïve assumption that public cloud always provides cost savings, without sufficiently assessing the underlying application architecture, and the technical and financial constraints that it imposes on the chosen cloud architecture. This can lead to undesirable consequences including project delays, budget overruns, below-par performance, application instability and creation of technical debt. In this paper, we address the shortcomings of this assumption by proposing a structured yet flexible decision framework comprising models, guidelines, tools and calculators that enables IT and/or business practitioners to make the correct architectural decision between public, private and hybrid cloud, from a functional, non-functional and financial perspective, based on the application architecture. By treating the application architecture as a first-class citizen in the decision making process, our proposed framework ensures that business and technical stakeholders make the correct decision early on in the migration process, resulting in timely deployment and quality-assured provision of critical business functions, minimization of waste, and avoidance of rework. We use a sample scenario to illustrate the need and usefulness of such a decision framework.
Paper # 87: Generating a Risk Profile for Car Insurance Policyholders: a Deep Learning Conceptual Model
Mohammad Siami, Mohsen Naderpour and Jie Lu
In recent years, technological improvements have provided a variety of new opportunities for insurance companies to adopt telematics devices in line with usage-based insurance models. This paper sheds new light on the application of big data analytics for car insurance companies that may help to estimate the risks associated with individual policyholders based on complex driving patterns. We propose a conceptual framework that describes the structural design of a risk predictor model for insurance customers and combines the value of telematics data with deep learning algorithms. The model’s components consist of data transformation, criteria mining, risk modelling, driving style detection, and risk prediction. The expected outcome is our methodology that generates more accurate results than other methods in this area.

Paper # 90: Exploring Micro and Macro Level Appropriation of an E-learning Platform: A Study in a Middle Eastern and a Western Educational Contexts
Mona Mesfer Alshardan, Antonette Mendoza and Richard Sinnott
E-learning platforms such as Learning Management Systems (LMS) are tools that are designed to enhance teaching and learning experiences and overcome a range of educational problems. Despite its availability to academics and students in most universities around the world, evidence show that these systems have not been effectively adopted to realise their full potential, especially in the Middle Eastern educational context. To this effect, in this study a conceptual model is designed that captures micro and macro level views of e-learning platforms appropriation encompassing: individual, technological, organizational educational policies and cultural aspects within the Middle Eastern context (Saudi Arabia) in comparison with that of a Western context (Australia). The model provides a framework that allows: (1) academics and educational institutions to assess the value realisation of such platforms for positive learning experiences; and (2) obtain deeper knowledge about key components of user behaviour in different cultural settings.
Paper # 91: Managing Open Innovation: An Exploration of Information Technologies and Open Search Patterns
Tingru Cui and Na Liu

External search has played a very critical role in a firm’s innovation process. As a cornerstone of open innovations’ success, the work of external search has been altered by the advancement in information technologies (ITs). Employees at different organizational levels can source external knowledge and share them with other employees with consummate ease and speed. However, the inclusion of more and different boundary spanners and broadened search domains pose new challenges to firms in managing their open search process. In this study, we attempt to address this under-studied phenomenon by conducting multiple case studies to build a deep understanding of the open search work. Drawing on the perspectives of upper echelon theory and organic/mechanistic organizational forms, we developed a theoretical exposition of open search work by 1) evaluating the impact of each open search pattern on efficient search outcomes; 2) understanding appropriate IT mechanisms for each identified pattern; and 3) unveiling the relationships of three open search patterns by considering the uncertainty as a unique trait of open innovation. Through this study, we seek to contribute to building a middle-range theory of open search by shedding light on the different patterns of open search and their varying impact on search outcomes. Our findings can also provide useful insights to firms’ managers to design their innovation units effectively to achieve optimal results.

Paper # 96: IS Enactment and organisational learning: A case of an integrated ERP post-implementation in Australia
Mehmood Chadhar and Farhad Daneshgar

The key challenge for an organisation implementing and using an ERP system is to understand and enact new business processes inscribed in ERP; and thus, undergo a profound organisational change. As continuation of a previous study, this paper provides a summary of the results of the previous study showing as a background to the second part of the current study. In the second part, the authors provide details of a proposed research methodology for the longitudinal case study. Results from the previous study show frustration and struggle of the staff and management of the case study organisation about the implementation of the SAP on the go-live day which lasted over five months. The focus of the current study is to provide detailed description of a proposed research methodology that facilitates further understanding of the ERP post-implementation phase using the organisational learning, enactment and the Community of Practice as the theoretical lens. The execution of the proposed research methodology is the subject of the authors’ future study.
Paper # 97: Designing Persuasive Avatars in mHealth for Arabic Culture: A Qualitative Study
Hussain M. Aljaroodi, Raymond Chiong and Marc T. P. Adam
Mobile health, or mHealth in short, concerns using mobile devices to provide health information to users. Research has shown that the use of avatars within mHealth applications can improve health outcomes. While several studies have investigated the design of avatars for mHealth applications, these studies focused solely on western cultures and most of them have not considered whether design principles are different between Western and Arabic users. This work will investigate the design of Arabic avatars by conducting a qualitative study, which includes semi-structured interviews with multiple stakeholders. The study will adopt a co-design methodology to derive design principles for persuasive Arabic avatars in the context of mHealth. In particular, it is our aim to increase users’ perceived social presence and intention to use persuasive mHealth avatars by taking Arabic culture into consideration. The work may lead to a higher level of adoption of avatar-based mHealth applications in Arabic countries.

Shahbaz Hussain, Ying Li, Wenli Li and Mohsin Ali
Social commerce greatly changes buyers’ purchase behavior nowadays. Understanding the psychological mechanism of consumers’ purchase behavior is important for both buyers and sellers in social commerce platform. This study will examine the nature and role of psychological contract (PC) that is an utmost important variable in social commerce context. The psychological contract comprises a consumer’s beliefs about the reciprocal obligations that exist between him/her and sellers or other social members. Specifically, we propose that consumers may make purchase decisions by two processes, in which two types of PC--transactional contract and relational contract are the key mediators. In addition, we further discuss the antecedents (platform website ethics, the reliability of social elements) and consequences (trust and satisfaction in the platform) of PC, and their impacts on purchase intention. We plan to empirically test our model by collecting survey data from the users from the largest social commerce website in China—Taobao.

Hessam Saghafi and William Wang
Numerous Critical Success Factors (CSFs) have been identified in Enterprise Resource Planning (ERP) projects. Project Management is one of the few CSFs that appear in both large and small business ERP implementation studies. Few studies further investigate project management processes in ERP implementation project in Small and Medium Enterprise (SME) context. Professional bodies like Project Management Institute (PMI) have developed an extensive list of processes at various stages of projects, however, it is not clear whether all recommended processes apply in an SME ERP implementation project. This warrants further investigations to understand how project management processes and activities in various project management knowledge areas would contribute to ERP implementation success in SMEs. Critical hermeneutics will be used for interpreting the text and making sense of the prevalent contradictory views of various stakeholder groups in SME ERP implementation projects around implementation success, best-fit project management lifecycle approach, and project management practices.
Paper # 120: Complimentary Return-Freight Insurance Serves as Quality Signal or Noise?  
Shidao Geng and Wenli Li  
In order to decrease the consumer return transaction cost, e-commerce platform Alibaba invited an insurance company to develop a new type of insurance to compensate consumers for returns, which is called return-freight insurance. The new insurance has resulted in online return’s explosive growth. However, some online retailers still choose to offer complimentary return-freight insurance to signal their products’ quality. Using signaling theory, we build a conceptual economic model to explore what kind of online retailer should adopt this strategy under incomplete information. Based on the fact that each product’s return probability, profit, and insurance compensation are different, our main results show the separating equilibria, where only high-quality online retailers will offer complimentary return-freight insurance. Interestingly, return-freight insurance profit and compensation play different roles in the signal effect. The insurance premium plays a deep role while the compensation plays at the surface, because consumers could only observe the compensation when purchasing.

Udayangi Perera and Lesley Gardner  
Advances in technology access allow undergraduates to personalize their learning to their individual interests via the creation and use of informal personal learning environments (PLEs). A comprehensive understanding of how learning takes place in such PLEs and their affordances for self-regulated learning (SRL) is still lacking. Drawing on 20 in-depth interviews with undergraduates and mind maps of their PLEs, this paper presents preliminary findings on how PLEs support self-regulatory learning processes. The results indicate that the tools and technologies that undergraduates choose to include in their PLEs provide some significant affordances for supporting metacognitive, motivational and behavioural SRL processes. Initial findings contribute to clarifying the perceived opportunities that a user-centred and managed PLE afford to its creators for engaging in SRL processes and the ongoing discussion of how best to use ubiquitous technologies for effective teaching and learning. The paper concludes with a discussion of the future research opportunities.
Paper # 130: Enhancing forestry supply chain through innovative integration of digital tools and techniques
Mohammad Sadegh Taskhiri, Maciej Matuszak, Byeong Kang and Paul Turner
Internationally forestry and wood products supply chains are being transformed. This traditionally resource intensive low technology sector is moving rapidly towards precision-manufacturing, advanced technology use and innovation in ways that increase the value and sustainability of wood within the emerging bio-economy. This research-in-progress reports on a major Australian Research Council funded applied industry based program integrating different digital tools and techniques along the forestry supply chain to improve product traceability, characterisation and knowledge management to stimulate and support market innovation. The paper provides insight into contemporary forest supply chains and illustrates the breadth of research being undertaken in this program. A specific example involving the innovative use of unmanned aerial vehicles (UAV) and digital telemetry to advance the speed and accuracy of forestry resource assessments is described. Preliminary results comparing manual and automated techniques for inventory estimation appear positive. Planned next steps for this project and the program are presented.

Paper # 142: Person-centred Information for Discharge Home
Nyree Taylor, Reeva Lederman and Rachelle Bosua
Clear person-centred information relevant to a person’s unique situation is an essential component to continued care following a hospital stay. Rising pressure on health services to discharge patients earlier is placing patients at risk as the ability to absorb information in hospital can be significantly impaired. Many patients return home with inadequate information to support recovery. To date the problem of patients returning to hospital following discharge has not been looked at from the perspective of person-centred information provision and the extent to which better quality, timing and delivery of information (what and when provided) could reduce the rate of return. This qualitative exploratory study uses Roy’s Adaption Model to examine the question: What are patients’ unique person-centred information needs at three critical time points pre- and post-discharge. Understanding unique person-centred information needs provides insight for IS content design to facilitate smoother healthcare transitions between hospital and home.

Sam Pitruzzello, Atif Ahmad and Sean B. Maynard
Knowledge leakage is a key risk for start-ups particularly when that knowledge relates to the firm’s innovation and is therefore competitively sensitive. Leakage of competitively sensitive knowledge can lead to financial losses and erosion of competitive advantage. Start-ups are particularly vulnerable to knowledge leakage compared to mature enterprises since they have limited resources to devote to protective measures, rely on relatively fewer product/innovation lines to sustain business success, and experience greater organizational change making it difficult to control the complex and evolving security risk landscape. Current research on (knowledge) leakage mitigation methods don’t adequately address the needs of start-ups. This paper sets out to address the gaps in current research relating to leakage mitigation particularly focusing on IP protection in start-ups. We propose a new knowledge-leakage mitigation framework, the Risk Window, as a precursor to a process model designed to assist start-ups to secure their competitively sensitive knowledge.
Paper # 145: Organisation Culture and Business Process Management Success
Howjer Gu, John D’Ambra and Kenneth Stevens

There is a gap in the Business Process Management (BPM) literature addressing human and organizational factors in BPM practice in organisations. This research in progress paper proposes to identify organisational cultural factors and assess their impact on BPM success in an organization. The paper explores the extant literature on organisational culture in a BPM context and BPM culture. Shien’s model is selected as the most comprehensive model of organisation culture and is extended to include the dimensions of BPM culture as proposed by Schmiedel, Vom Brocke and Recker. In the conclusion a proposed field study exploring the validation of the dimensions of BPM culture is outlined.

Paper # 150: Technology Knowledge in Marketing Ecosystems: a Framework and Research Agenda
Mary Ellen Gordon and Jocelyn Cranefield

The practice of marketing has become increasingly technology-dependent, making organisations reliant on fragmented information systems that extend beyond organisational boundaries and requiring marketing workers to develop technology-related knowledge and/or collaborate more closely with those who have it. Despite massive investment in marketing technology, there has been little academic research on the intersection between marketing and technology knowledge. Drawing on three examples, we illustrate how complex and IS-dependent the practice of marketing and marketing decision-making have become. We then analyse those examples through the lens of knowledge management. Specifically, we consider the differences between traditional and modern marketing ecosystems and the implications for knowledge work, knowledge management, and decision-making at the level of organisations and ecosystems. We propose a provisional conceptual framework for understanding how market, marketing and technology knowledge have become intertwined and propose a research agenda for examining that more closely.

Paper # 151: Advancing ICT4D Research through Service-dominant Logic
Luthfi Ramadani, Sherah Kurnia and Christoph Breidbach

Information and Communication Technology (ICT) has contributed significantly to the socio-economic development of societies. Especially developing countries are now beginning to experience the digital service transformations that previously took place in the western world. However, very little is known about the extent to which ICTs have transformed developing countries on a macro, meso, and micro level. In fact, the current lack of knowledge related to digital service transformation in developing countries may be one reason for why ICT for Development (ICT4D) projects continue to fail, and evidently do not achieve the anticipated societal impact. This research-in-progress aims to address this significant gap in knowledge and associated societal challenge by proposing potential research pathways rooted in the meta-theoretical lens of Service-dominant (SD) logic. We put forward a novel research framework that demonstrates how SD logic may be applied to investigate ICT-enabled service transformation in developing countries, and delineate future research avenues for Information Systems scholars attempting to contribute knowledge related to this important area of interest.
Ali Alghamdi, Kuldeep Sandhu and Luke Houghton

Through innovations in technologies, electronic commerce (EC) has evolved into a new stream of commerce called social commerce (SC). This paper defines SC as a combination of performing EC activities and socializing on online communities via facilitating technologies to make purchase decisions. SC adoption has recently gained attention among interested scholars; yet, since SC is a new technology, studies are limited. The current research gap is twofold: First, no studies have yet examined the impact of government involvement on SC adoption. Second, the impact of social factors (e.g. social support and electronic word of mouth) on SC adoption in the Saudi Arabian context has not yet been investigated. This in-progress research aims to provide guidance to interested stakeholders on how to encourage consumers to adopt SC in Saudi Arabia. The study uses the theory of planned behaviour, along with other external factors, as a theoretical model.

Paper # 163: Who are the Operational Users of Enterprise Systems: Does One Size Fit All?
Rebekah Eden, Erwin Fielt and Glen Murphy

In the Information Systems discipline, there is growing recognition of the importance of enterprise systems’ (ES) users. ES users have traditionally been categorized into operational, managerial, and strategic groups. However, organizational structures are beginning to transform, potentially resulting in changes to the demarcations between user groups. This research applies the case study approach to explore users in a contemporary ES environment. The preliminary analysis provides support to indicate that the boundaries between user groups are changing. In addition a preliminary typology was created, which resulted in the identification of eight different types of operational users. Therefore this research challenges the current theoretical treatment of operational users.

Paper # 165: The Role of Information Systems in Preventing Railway Suicide: A Service Value Co-creation Perspective
Ping-Ju Wu, John Campbell and Byron Keating

Suicide prevention is a major concern for railway operators internationally. This paper reports research in progress examining how information systems can facilitate passenger/organisational co-created value in terms of reducing the incidence of railway suicide. Thus, the objectives of this research are to: (1) explore and evaluate the effectiveness of using information systems interventions in a passenger railway servicescape, and (2) explore the relationship between these servicescape interventions and customer experience, and assess their impact on railway suicide prevention from a value co-creation perspective. While the focus of this research is preventing railway suicide, the information systems developed would also lend themselves to a wide range of additional railway security issues such as the detection and prevention of crime, terrorism, and potential misadventure incidents.
Paper # 168: Capturing information technology use by senior secondary school students in New Zealand
Lauren Bennett

The Ultrafast broadband rollout in New Zealand places a priority on delivering broadband to schools. The expectation that “Ultrafast broadband is transforming education” is moving schools to embed ICT in the classroom, placing pressure on limited budgets to further leverage already substantial investments. School principals are asking, what are the benefits of this investment? This research in progress explores how students use digital technology, using critical realism and activity theory over multiple case studies, and finds that the technology available is diverse, multiple and malleable. A three-dimensional conceptualisation of these devices is proposed: as a tool for cognition, metacognition and distributed cognition. An example of collaborative work is used to elaborate how classes use multiple technologies along each of these dimensions, and how fast broadband supports these experiences. This study contributes by providing a guide to assess the potential use and usefulness of information technology in the classroom.

Paper # 171: Port terminal congestion management. An integrated information systems approach for improving supply chain value
Mihai Neagoe, Paul Turner, Hong-Oanh Nguyen and Mohammad Sadegh Taskhiri

The increasing size of freight vessels has influenced the volume and level of traffic congestion at land-side port terminals. Port responses impact on the socio-economic and environmental costs experienced in port hinterlands. In regional ports especially, these costs may have implications for regional development and the capacity of supply chains to retain and/or optimize value. Conventional port responses tend to adopt a narrow focus on terminal operations or on the potential benefits terminals and carriers can achieve through collaboration and integration. Few studies have adopted a supply chain perspective or examined how information systems may be used to balance competing user needs. This research-in-progress paper highlights how a supply chain perspective deploying information systems can improve port congestion management by stimulating collaboration amongst multiple transport and terminal operators. Preliminary results show promise for the identification and delivery of an agreed solution to minimize port congestion and support value chain resilience.

Paper # 178: Personality Traits to Allocate Information Systems Student Teams
Stefan Stieglitz, Tobias Potthoff and Lea-Marie Braun

Team or group work has become the quasi-standard in teaching when it comes to alternatives for the traditional lecture. Since team work also causes problems like social loafing or dissatisfaction, we study the potential improvement of team work in a small IS course through the usage of personality traits. Personality traits that describe humans in stereotypes and allow to understand behavior, have been studied in different areas of IS and other disciplines. The usage of characteristics to optimize teams have not yet been considered. We present the first application of personality traits in a small seminar at a German university. Teams with specific personality characteristics (neuroticism and conscientiousness) performed better than the control group. We further observed differences in terms of shared mental models in relation to the personality traits.
Avirup Dasgupta and Asif Gill

Internet of Things (IoT) applications continue to grow at a rapid scale. However, current cloud-centric IoT architectures are not feasible to support the mobility needs as well as latency requirements of time-critical IoT applications. This has restricted the growth of IoT in certain sectors. Through this paper, we explore fog-computing paradigm as an alternative IoT enabling technology. There is a need to systematically review and synthesize the fog computing concerns or challenges for IoT applications. This paper aims to address this important research need using a well-known systematic literature review (SLR) approach. Using the SLR approach and applying customized search criteria derived from the research question, 17 relevant studies were identified and reviewed in this regard from an initial set of 439 papers. In addition, 4 papers were manually identified based on their relevance. The data was organized into four major challenge categories. The findings of this research paper can help practitioners and researchers to understand the fog computing related concerns, and provide useful insights for future work. This paper is restricted to the number of reviewed studies from chosen database.

Paper # 185: The Role of National Culture in the Strategic Use of and Investment in ICT: A Comparative Study of Japanese and Australian Organisations
Craig Baty, Michael Lane, Aileen Cater-Steel and Mustafa Ally

Japanese ICT investment trailed the developed world for many decades, contributing to low productivity growth. A potential root cause is the influence of Japanese culture over the strategic use of and investment in ICT (SUIICT). Empirical research on cultural aspects of SUIICT in Japan is lacking. This study will examine national culture and its association with SUIICT in organisations in Japan compared to Australia. A quantitative survey of ICT decision makers in Japanese and Australian organisations will be fielded based on questions synthesized from McFarlan, McKenney and Pyburn (The Strategic Grid), and Hofstede and Minkov (Cultural Dimensions Model). A contribution to theory will be the development and testing of an empirical model and practical instrument for determining the association between national culture and SUIICT. A practical contribution will be an increase in understanding of both markets allowing for more effective market segmentation and development of ICT offerings for both countries.

Paper # 189: Using Immersive Virtual Reality to Create Presence in Online Shopping
Wanxian Zeng and Alex Richardson

The recent desire to apply virtual reality for e-commerce implies the need for a better understanding of this emerging medium as an approach for digitisation and marketing of product and brand. Though two-dimensional presentation media (e.g. text, images and videos) are frequently investigated in information systems research, few studies address how virtual reality can be utilised in presenting and selling products, as it only recently became affordable and accessible to consumers. Virtual reality is much more capable of enabling “presence”, the perceptual illusion of nonmediation or the feeling of being in the virtual environment instead of in the real world. This explorative study will investigate what characteristics of immersive virtual reality and its associated virtual space to digitally stimulate “presence”, and whether and how “presence” can affect online consumers’ impression of the e-retailer, interest generation and actual purchasing behaviour of products.
Paper # 199: Two Heads are Better than One: A Theoretical Model for Cybersecurity Intelligence Sharing (CIS) between Organisations
Farzan Kolini
Cybersecurity intelligence sharing (CIS) has the potential to help organisations improving their situational awareness. Although CIS has received more attention from organisations, participation in CIS operation is not satisfactory, and there is not too much information about the factors that are antecedent to CIS among organisations. Thus, this study aims to investigate technical and non-technical factors including organisational and environmental factors influence organisational participation in CIS practices.

Paper # 226: Explaining How Agile Software Development Practices Moderate the Negative Effects of Faultlines in Teams
Simon Lassak, Leonard Przybilla, Manuel Wiesche and Helmut Krcmar
This research-in-progress aims at investigating what moderating effects use of Agile Software Development (ASD) methods and practices has on negative performance effects of faultlines, i.e. specific configurations of attributes in team members. Based on literature in ASD and psychology, a model of the moderating effects of ASD practices is developed and is to be assessed using a global online study. Since ASD practices shape team work and can be linked to known moderators of negative faultline effects, we expect to find moderating effects of ASD methods and practices on faultline effects. Information on the prevalence and moderation of faultline effects in ASD teams will help with a more detailed understanding of how ASD practices work and the contingencies that can inhibit or support their effects. Insights into group functioning in ASD settings will provide guidance on which ASD practices may be helpful in attenuating negative team dynamics.

Paper # 227: Enterprise social software appropriation: A dance of animacy
Natalie Hardwicke and Dirk S. Hovorka
By viewing organisational appropriation of enterprise social software (ESS), this research-in-progress paper explores the juxtaposed relationship between two practices, that of client and consultant, as they work together to co-design a joint ESS solution for the client’s workplace. The lead researcher’s embedded relationship in a case organisation, who specialise in ESS, enables in-situ observation of the breakdowns and tensions between practices. Through a design and practice-based perspective, the taken-for-granted assumptions of both practices are animated through useful tensions as design-based activities unfold. A double hermeneutic process emerges in which the two practices work towards understanding each other’s practice as well as their own respective role in the project.
**Paper # 228: A Framework for Information Security Risk Management in IT Outsourcing**

Baber Majid Bhatti, Sameera Mubarak and Sev Nagalingam

Information Technology Outsourcing (ITO) is a common business practice to outsource delivery of Information Technology (IT) scopes to external suppliers. During past two decades, ITO has grown significantly and has also become an established field of research. With rapid innovations in IT, information security is an increasing concern as new risks emerge in ITO that have not been explored by earlier studies. This paper highlights the insufficiency of the knowledge on this topic and investigates the need of information security risk management (ISRM) in ITO. It aims at creating an ISRM framework for ITO, which will contribute to knowledge and will help businesses to improve their ITO strategy and resilience against information security risks.

**Paper # 231: Heuristics for Gaining Project Insights**

Christine Schulte and Dirk Hovorka

This paper presents a collection of behaviours for gaining insights in projects of small, innovating organisations. An explorative study of 12 informants and their subject matter expertise are used to inform this work. The paper draws on three bodies of literature - Innovation Management, Knowledge Management and Project Management to inform the theoretical background. So far no framework has been developed that are tailored to the unique situation of Small Innovators as they aim to foster innovation within the organisation. A number of propositions is offered based on the qualitative data analysis and hermeneutic literature appraisal that address potential heuristics processes that could enhance a Small Innovator’s ability to gain better insights while pursuing innovative project outcomes.

**Paper # 241: Failed IT projects: is poor IT governance to blame?**

Mehdi Asgarkhani, Aileen Cater-Steel, Mark Toleman and Mustafa Ally

Today organisations both in the private and public sectors rely on Information Technology (IT) solutions and continue to make significant investments enabling business via IT. The increase in investment in IT is due to the demand for more efficient and cost-effective delivery of products and services. The dependency on IT and the increased level of investment in IT have both motivated a wider accountability focus on strategic technology initiatives, and a complex mix of political, organisational, technical and cultural shifts requiring far-sighted management and governance of IT. Throughout the last decade, systems, processes, standards and best practice frameworks have been developed to facilitate effective IT governance. However, a large number of IT initiatives fail to deliver. Getting value from technology deployment via effective IT governance remains a key concern of management. This paper presents the outcome of the analysis of four IT deployment cases studies. The analysis of the four case studies demonstrated a strong connection between project failures and inadequate governance practices.
Paper # 243: Temporal Changes in the Impact of Drivers of Online Review Influence
Vamsi Vallurupalli and Indranil Bose
Online reviews have become ubiquitous in modern day business environment. They shape consumer perception regarding a product or service, and thereby affect sales and profits of a business. Extant work on online review influence has investigated mechanisms by which a review may affect consumers’ decisions. The studies, however, have ignored the possibility of a change in the impact of drivers of influence over time, as more reviews are posted. This study attempts to bridge the gap. Drawing from elaboration likelihood model (ELM) and Simon’s theory of bounded rationality, hypotheses regarding temporal changes in the impact of drivers of influence have been proposed. The hypotheses have been tested based on online review data from Yelp.com. Additionally, in this study, it has been recognized that the gap or difference between review content being created and that needed by consumers to support decisions is more important than an understanding of the latter alone. Therefore, a set of hypotheses have been proposed regarding changes in review content characteristics over time, tested over the same dataset, and compared with the findings on temporal changes in the impact of drivers of review influence. The insights from this study have important implications for both theory and practice and have been discussed.

Paper # 245: Facilitating Knowledge Transfer for Innovation: Towards a Decision Support System to Identify Knowledge Stock in the ICT Profession
Anup Shrestha, Eric Kong and Paul Collins
The external knowledge acquisition and the internal knowledge transfer are both critical to the development of organisational knowledge stock. The two processes must be managed closely together if the effect of knowledge stock development for innovation is to be maximised. However, it is often a challenge to many organisations to realise their knowledge stock. Using a design science research methodology, this paper considers the problem of enabling knowledge transfer through the assessment of knowledge stock. Our contribution in this research-in-progress paper is to present a conceptual framework for knowledge transfer enabling innovation. We develop a Decision Support System (DSS) prototype to identify knowledge stock measured in terms of ICT skills using the Skills Framework for the Information Age (SFIA). We simulate the DSS prototype to measure knowledge stock at individual and organisational level. A comprehensive evaluation of the DSS in the knowledge management context is planned for future research.
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Paper # 246: Juxtaposed practices in social software projects
Natalie Hardwicke
Traditional IT introduction approaches tend to follow a goal-driven, top-down logic, whereby technology is selected and then imposed on end-users. This paper posits that such approaches have been embodied by client organisations wanting to introduce enterprise social software (ESS) inside their organisation. However, as a type of malleable technology requiring end-user appropriation, traditional approaches are not appropriate for ESS. Through an embedded researcher relationship with a case organisation, a research approach and preliminary findings are presented in which the juxtaposition of two, client and consultant, practices align with either a top-down or employee-centric view regarding ESS. By utilizing a practice breakdown lens, this paper explores the tensions that are revealed in ESS projects as the two practices struggle to socially construct a joint solution for ESS inside client organisations. This unique context affords studying the particular nature of ESS and solutions for its uptake, as breakdowns foreground the role of the end-user in malleable technologies.
Paper # 248: Alter-identity work via Social Media in Professional Service Contexts

Tim Mahlberg

In this research-in-progress paper I show how individuals in a professional service firm passionately, and of their own volition, engage in work activities across multiple social media, that fall well outside of formal work requirements. I refer to the personas these workers create as “alter-identities” to signify that this form of identity work sits alongside formal work roles. Utilising a reflexive research approach, I set out to explore 1) how professionals maintain alter-identities and 2) implications vis-à-vis organisational expectations. I offer initial insights into the role of social media, and the ways in which individuals reconcile alter-identities with formal requirements. I will contribute new insights on the role of digital technologies, such as social-media, in knowledge work contexts, and theorise the role of alter-identity performance as a way for organisations to innovate formal work models in a bottom-up, employee-driven way. Such practices might foster organisational responsiveness in rapidly changing environments.

Paper # 253: The Digitization of Healthcare: Understanding Personal Health Information Disclosure by Consumers in Developing Countries - An Extended Privacy Calculus Perspective

Ernest Kwadwo Adu, Annette Mills and Nelly Todorova

Consumers’ willingness to disclose and allow electronic storage of their personal health information (PHI) is critical to the successful digitization of healthcare. However, concern about privacy and potentially negative consequences of privacy loss (e.g., loss of jobs) can discourage PHI disclosure by consumers. It is thus imperative to identify and address key roadblocks from the perspective of consumers that may impede the progress of developing countries in digitizing healthcare. Toward this end, this research-in-progress integrates the privacy calculus model with procedural justice to investigate the willingness of individuals in developing countries to disclose PHI in order to receive care in contexts where the disclosed PHI is stored and used electronically. A comprehensive model is proposed to explain the determinants of consumer PHI privacy concerns and willingness to disclose PHI. We will test the proposed model using the survey method. Several theoretical contributions expected from the study are provided.


Jing Zhang, Annette Mills and Nelly Todorova

Worldwide, natural disasters are increasing. In 2016 alone there was over $175 billion in damages and 8900 lives lost. To mitigate the impact of these events on people, countries are turning to location-based mobile emergency alert systems (MEAS) for their practical benefits and ability to deliver personalised emergency notifications to individuals. Most systems depend on persons choosing to use the service and share personal details. However concerns about data privacy have been raised. Focusing people’s desire to protect themselves from harm, this paper draws on Protection Motivation Theory and work on privacy concern to evaluate willingness to use MEAS, which require the disclosure of personal information to service providers. Results using data from 103 respondents are reported. The findings enhance understanding of MEAS use, and provide insights to service providers and government agencies for implementing MEAS.
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