

Workshops for SAIE 28, October 2017



Sonja Blignaut

Owner & Founder, More Beyond

Workshop title: *Harnessing complexity: effectively navigating uncertainty*

Sonja Blignaut, Owner and Founder, More Beyond partners with leaders, OD practitioners and other decisionmakers to enable responsive and agile organisations and make sense of intractable or wicked problems. She does this through the use of pioneering ideas and tools from complexity theory and narrative practice. Her expertise lies in guiding leaders and practitioners in organisations to shift their organisations toward greater strategic agility and resilience. Focus areas include: adaptive change; adaptive strategy and devolved decision-making; developing competence to deal with complex or adaptive challenges in VUCA environments; sense-making; and culture. Sonja has over 15 years' experience consulting locally and internationally. Prior to founding more Beyond, she consulted for PWC and IBM. She is the exclusive South African partner for Prof Dave Snowden's company Cognitive Edge and supplies training in their open source methods; the Cynefin sense-making framework as well as the Sensemaker software suite. Sonja is a popular speaker at various business schools, conferences and events.

Workshop outline

The complex challenges we face today means that we often find ourselves in uncharted territory where there are no maps and our tried and true methods and tools are no longer sufficient. It requires a different approach to leadership, management and knowledge work in general. In this workshop we will apply thinking from complex adaptive systems theory to make sense of the shifts we need to make. Among others we will explore the shift from a focus on efficiency to resilient responsiveness; we will also explore what strategy and design looks like in a world of rapid and continuous change.



Clemens Dempers

Blue Stallion Technologies

Workshop title: *Effective group decision making in the corporate and private sector*

Clemens Dempers obtained his BSc and Honors degrees from Stellenbosch University and then completed a MSc in physics at University of Natal.

While working on his PhD (not submitted) he became involved in importing technical and scientific software and was involved with a number of software and consulting companies before starting Blue Stallion Technologies in 2001. Blue Stallion have the sole agency for a number of products including Wolfram Mathematica, Lingo and Anylogic.

He has been involved in a number of consulting projects, both in South Africa and internationally.

Workshop Outline

Decision making has a huge impact on government service delivery. Good decisions require a structured and mathematically sound process that not only allow for tradeoffs between conflicting objectives, but also incorporate both tangible (quantitative) and intangible (qualitative) criteria. The decision process needs to be transparent and allow for group decision making to ensure buy-in of the stakeholders. Without a rigorous decision making process, valuable resources can be squandered which the public sector can ill afford.

During the workshop we will examine the widely used analytic hierarchy process (AHP) as applied to a range of practical decisions, including government policy, allocation of R&D funds, cost/benefit analysis, employee evaluation, conflict resolution, strategic planning and risk.

Special attention will be paid to resource allocation and project portfolio ranking applications and we will facilitate a group exercise where attendees design and build a decision model and then go through the rating and analysis process.

We will be using Comparison™ for the exercise, which is a web based implementation from Expert Choice Inc. This tool is widely used in the USA government and fortune 500 companies including NASA. Applications of this decision making technology includes: Vendor Selection, Site and Facility Selection, Tender Evaluation, Employee Selection and performance evaluation and Risk analysis.

We will also reference a local project that involves allocating funding to different community development projects, and how to decide which of the projects to fund within budget constraints. The workshop should be of interest to both national and local government, as well as large and mid sized corporates. The same decision making process can be used for allocating resources to engineering projects as well.



Gawie Roodt

Africa Industrial Engineering Services

AND



Thomas Tengen

Vaal University of technology

Workshop title: *Lean at the workplace*

Extended Title: *Lean overview, principles/techniques and applications with a view of designing Lean Curriculum for IE and related disciplines*

The purpose of this workshop is to bring together academic and industrial practitioners to appraise the approach to achieving lean and its applications across industries. Furthermore, there shall be open discussions with all the participants of the workplace challenges that require the application of lean concept to address them. From the open discussions, the areas needing lean in the workplace will be identified and will form the target for the design of the Lean curriculum. The full design process will then take place at a later stage after consultation with all relevant parties.

The key issues to be covered are summarized in the following four points:-

- Overview of Lean and its genealogy
- How and where would it fit into an IE curricula (short intro and thought starter, unpacking the main tools of lean: – followed by discussion)
- How do SA industries view Lean and what they believe should be included in lean curriculum?
- Getting Lean into other disciplines\



Quintin van Heerden

CSIR Built Environment

Session title: Operations Research Special Interest group
This session will consist of two parts: an overview of the OR SIG and a Lean Analytics Meetup.

Quintin van Heerden is an Industrial Engineer in the CSIR Built Environment where he leads the Urban Growth Modelling team in the Spatial Planning and Systems competence area. He holds a masters degree in Industrial Engineering. He serves on the SAIE Council as portfolio manager of the Operations Research SIG and he is the chairperson of the Pretoria Chapter of the Operations Research Society of South Africa (ORSSA).

The SAIE OR SIG

The SAIE OR SIG promotes the field of operations research (and related domains) by organising events in the form of seminars in collaboration with other similar societies such as the Operations Research Society of South Africa (ORSSA) and the Institute for Certificated and Chartered Statisticians of South Africa (ICSSA). This part of the session will give an overview of the events that took place in 2017, initiatives for the next year, and journals to consider for publishing OR related papers.

Lean Analytics Meetup

ORSSA hosts fortnightly Lean Analytics Meetups in Pretoria (co-hosted by the SAIE OR SIG), Johannesburg and Stellenbosch. The format is based on a lightweight meeting structure called Lean Coffee, which requires no formal preparation by participants; we simply discuss the topics raised by those attending. So, if you are interested or experienced in Operations Research, Statistics, Data Mining, Computer Science (or related disciplines) have programming or simulation modelling questions, or if you are just curious to experience such a meetup and to network, please join us in this session for a Lean Analytics Meetup.



Wim van Schalkwyk

Design Innovation Partner - Afrika, Aurecon

Workshop title: *Design Thinking for IE's*

Wim van Schalkwyk is an accomplished Industrial Engineer - designing and delivering meaningful value to clients across various sectors in Southern and Eastern Africa over the past 15 years. His current role is that of Design Innovation Partner (Afrika) at Aurecon – a global consulting engineering company who prides itself in bringing its clients' ideas to life

Workshop Outline

The discipline of design and those *working as designers* has come under the spotlight in recent years after being popularised by Tim Brown of IDEO as *design thinking*. But what does *thinking like designers* offer the Industrial Engineer?

This workshop will interactively explore some of the mindsets, frameworks and tools of *design thinking* as a creative approach to problem solving and problem finding. Given that all IEs are in some way involved with designing systems, interfaces, processes, policies, etc. design thinking holds enormous potential for your IE toolbox. Come experience a taste of it!

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Maria van Zyl

School of Industrial Engineering, North-West University

Session title: The way forward for academic and industry collaboration in healthcare?

Maria van Zyl is currently associated with the School of Industrial Engineering at the Northwest University. Her current interest and PhD focus is on Operations Management in healthcare with a potential focus of technology transfer from private to public healthcare in South Africa. Prior to joining the Northwest university, her career in industry included various aspects of the airline and car rental industry as well as operational excellence deployment in the supply chain and logistics industry. Maria holds an industrial/electronic engineering degree from the University of Stellenbosch and a Master's degree in Engineering Management from the University of Pretoria.

AND



Rose Heathcote

CEO, Lean Institute Africa

Rose Heathcote's purpose is to advance the learning and application of Lean Thinking in Africa.

For more than 20 years, she has focused on raising the performance of enterprises in most industry sectors in Africa, Middle East, UK and India through Lean Thinking and Best Practice. She has been privileged to work with 100+ companies, from micro through to large internationals, supporting them with:

- Strategy and Execution in Lean Thinking
- Corporate and Individual Learning and Development

She has a background in Industrial Engineering and Business Management and is the author of 'Making a Difference' and 'Clear Direction'. Her new book, 'Green Value Stream', is expected to launch early 2018.

Workshop Outline

During SAIE27 the need was informally identified to establish a community of practice regarding healthcare research from an industrial engineering perspective in South Africa. The objective of this workshop is to formally get as many role players together and discuss what are the current challenges in the healthcare industry that can be addressed by research in the field of industrial engineering. The improvement of public healthcare as part of the focus of the NDP will also be discussed. The final aim will be to set up a working agenda with future outputs that can be produced in the next year.