

Government and business institutions are under pressure to make the right investment decisions in the face of a continually changing geo-political and socio-economic landscape. Policy makers, managers and leaders today are expected to deliver innovative solutions to cope with increasing change and uncertainty. To make matters more challenging the complex environmental, socio-economic, business-financial issues tend to transcend the jurisdictions and capacities of any single organisation.

There are a multitude of difficult, long-term global challenges ahead, almost all of which are coupled with our most pressing national and local concerns. Despite many efforts to deal with these complex issues facing our society the solutions so far have been seldom long lasting. In order to govern our complex society towards resilient technical, economical and social developments there is an urgent need to step outside our collective 'comfort zone' and to develop new ways of thinking and acting in the interest of our future. It is essential for current and future managers and leaders to be equipped with new ways of thinking that are systems design-led to deal with complex problems in a systemic, integrated and collaborative fashion – that is, working together in identifying and dealing with root causes of issues rather than focusing on short-term fixes.

The **Evolutionary Learning Laboratory (ELLab)** offers a methodology for creating informal learning spaces or platforms for managing complex issues. It aims to introduce systems thinking, complex decision making, knowledge and integration skills for researchers, research managers, policy makers and other decision makers to develop a shared understanding of complex issues and to create innovative and sustainable solutions using systems approaches. The processes also include generic skills in problem solving, team participation and team learning. It consists of a unique seven step process and methodology for integrated cross-sectoral decision making, planning and collaboration in dealing with complex multi-stakeholder problems.

The **workshop** will provide participants from ALL areas of interest with various practical experiences to learn about how to use different approaches and tools to establish an Evolutionary Learning Lab.

Participants will learn about the importance of interconnectedness in a simulation game in which they act like the government of a country in despair, with the goal to stabilize the country through developing a sustainable balance between education, health, politics, production, environment, quality of life, and population growth - all important sectors of human life, which is interlinked in such a way that each decision results in a chain of effects and repercussions - just like in real life.

You will learn how to integrate the mental models of different stakeholders into a Causal Loop Model (CLM) and how to interpret and explore the model for patterns, how different components of the model are interconnected and what feedback loops, reinforcing loops and balancing loops exist – a process that provides all stakeholders with a better understanding of each other's mental models and the development of a shared understanding of the issue(s) under consideration.

Bayesian networks are now used throughout the world as a systems modelling tool within a range of industries including medical science, engineering, business and finance, information technology, mining and exploration, forensic science and environmental management. The popularity of Bayesian networks is spreading due to their flexibility and ability to integrate different forms of data and knowledge (quantitative and/or qualitative; biophysical or social), to accommodate uncertainty and to support decision making through scenario analysis and back-casting. You will be introduced to the on-line Decision Based Learning Interactive (DBLi) decision support toolkit that is designed for researchers to integrate knowledge and scientific understanding about systems, whilst managers can use them as decision support tools to improve the performance of the systems they are managing. This "Facebook" for systems thinkers allow researchers and managers to create and share Bayesian network models on the internet and to use them as 'living' strategic and operational plans.

The interpretation of the CLMs and back casting in DBLi lead to an understanding of the systemic issues and their interdependencies, the role and responsibility of each stakeholder group and the implications for coordinated actions, strategy and policy - all facilitating the identification of key leverage areas for systemic interventions that will lead to good investment and efficient management and policy making.

WORKSHOP

Date....

Venue....

Evolutionary Learning Laboratories

- Platforms for Dealing with
Complex Issues

Presented by

**PROFESSOR OCKIE BOSCH &
DR NAM NGUYEN**

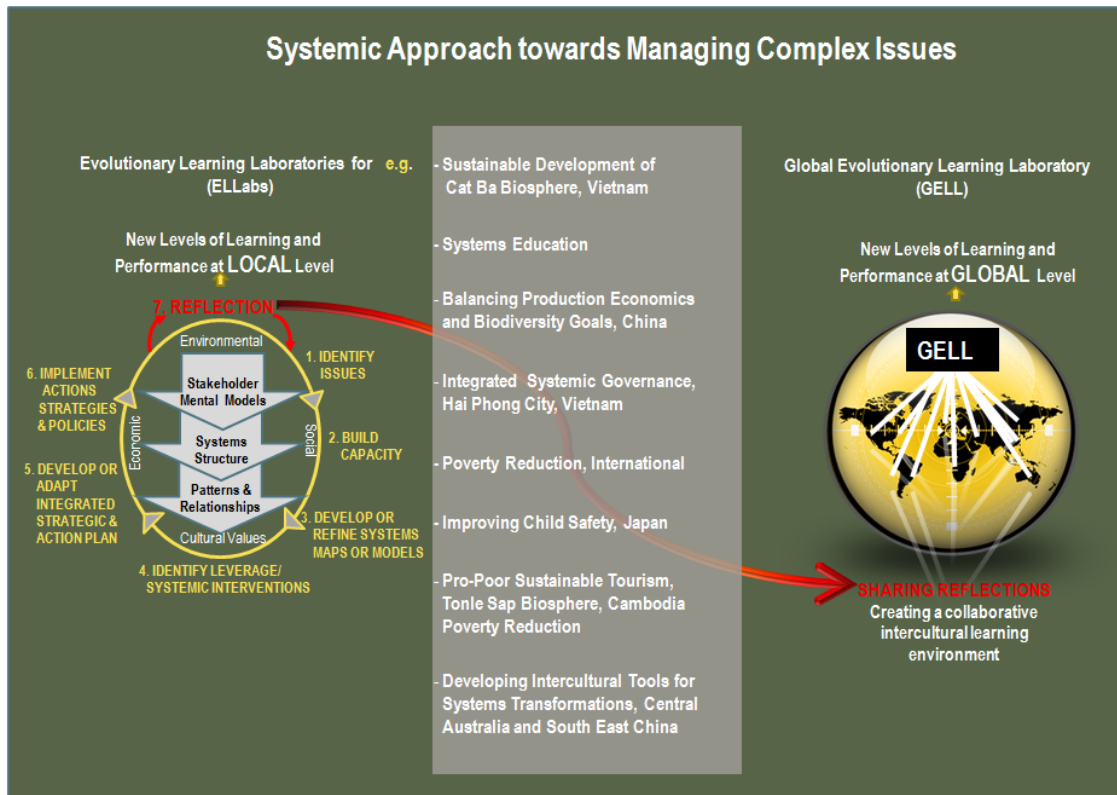
Systems Design & Complexity Management
University of Adelaide Business School
AUSTRALIA

ockie.bosch@adelaide.edu.au

You will learn how the DBLi model can directly be used as a management plan by end-users. The plan is based on the best knowledge (scientific data and information, experiential knowledge, expert opinions) that was available at the time of the systems analysis and model construction. The model can be used to test the possible outcomes of different strategies by observing what will happen to the system as a whole when a particular strategy or combination of strategies is implemented, that is before any time or money is invested in the actual implementation of systemic interventions. Of particular value is the ability of the DBLi model to also “back-cast” to point out which of the components, actions or conditions have the most influence on the achievement of the goal. This is a powerful way of determining where to invest time and resources, instead of having just a list of recommendations, without an understanding of how they are interconnected, which ones are the most important to invest in and in what order should the strategies be implemented to ensure an efficient and cost-effective plan of action.

Because no model can ever be completely “correct” in a complex world and unintended consequences will always be possible, the only way to manage complexity is by reflecting at regular intervals on the outcomes of the actions and decisions that have been taken. This process does not only help to identify the components, unintended consequences and new barriers that were not identified during the development of the strategic and operational plan, but also serves as a valuable informal co-learning experience on how to deal with complexity. You will also learn how to identify the barriers and drivers of the continual process of model refinement, identifying new capacity building needs, revising or adapting the systemic interventions to continuously develop a better understanding of the complex issues and to ensure new levels of learning and performance.

EL Labs throughout the world are linked through the **Global Evolutionary Learning Laboratory (GELL)** allowing for the sharing of reflections and development of new ideas on how to deal with complex issues with each other. This does not only lead to new levels of learning and performance at the global level, but individual EL Labs are provided with an opportunity to contribute actively to the global knowledge pool on dealing with complex issues facing our world in an intergenerational and intercultural co-learning environment.



WORKSHOP CONTENTS

Establishing an ELLab

The art of interconnectedness

Learn more about interconnectedness, the importance of cross-sectoral communication and collaboration in dealing with complex issues through “Fun and (simulation) Games”

Structuring mental models of different stakeholders into systems models

Causal Loop Modeling (CLM) integrates the mental models of different stakeholders; interconnectedness; feedback loops; reinforcing loops; balancing loops

Bayesian Belief Network Modeling (Web-based Decision Based Learning Interactive DBLi) deals with uncertainty; scenario analysis; back-casting; is flexible; simple to use for non-modelers; integrates different forms of knowledge – quantitative and/or qualitative; supports decision making.

Identification of leverage points for systemic intervention

Using scenario testing, back-casting, archetypes; understanding of the systemic issues and their interdependencies

Develop a “living and evolving” integrated strategic and operational plan

Systemically defined goals and strategies for implementation; role and responsibility of each stakeholder group

Institutionalising the ELLab

Reflecting at regular intervals; informal co-learning experience; ensure new levels of learning and performance; identify barriers and drivers to ensure an evolving and ongoing process.