Systems, Strategy and Sustainability

Faculty

This special topic is to be jointly offered by Bob Mark, Marc Orlitzky, Paul Martin, and James Carlopio. It is to provide a multi-disciplinary perspective on the management of issues of sustainability. The framework for exploring these issues across disciplines is the use of System Dynamics.

Background to the proposal

The proposal arises in part out of enquiries from outside the school and in part from awareness that a growing number of business schools are beginning to realise the importance of having a capability in the environmental management aspects of management. Many other business schools and universities have begun to address this need, including UTS and Macquarie. There is a growing range of international courses targeting this area.

Preparatory work

A substantial amount of preparatory work has been done for this subject, and other arrangements are in hand for additional work. This is in response to the request of the Acting Dean that this subject be given priority. The work to date consists of the assembly of research information about the sector and the issues that are driving it, background analysis of firms within the sector, and research of the systems thinking and analytic tools which are appropriate to the task. Substantial work has been done on the legal and strategic context; on the system thinking framework; and on developing a collection of information about waste management. This is intended to be a case study area, as it incorporates many of the key issues on which the subject is focused, and is relatively easy for students to come to grips with, regardless of their origin or interest.

A case study has also been researched which deals with barriers (legal, political, technical and community) to the implementation of 'green development principles, in an urban setting. Detail work is underway on the systems issues in the regulation of natural resource management. The next stage will conduct a system dynamic workshop between the relevant instructors and selected environmental sector experts, to bring the content and structure issues.

A rationale for offering the subject

Why offer this subject?

Because it offers a potential to deliver to students a number of educational benefits that they will not otherwise obtain, and because it positions the AGSM in an area that is growing in importance.

The cross-disciplinary, systems thinking approach provides students with a repertoire of thinking tools that have proven to be useful in understanding complex management problems. These tools are not otherwise available to students within the AGSM.

The focus on sustainability issues provides an opportunity to overlay these tools' benefit with an understanding of one of the most challenging areas of management and policy, which spans understanding of physical systems, law and policy formulation, economic, incentive systems.

Is there a market?
This is as yet untested. But the overlay of the two areas of interest (environment and systems thinking) and a multi-disciplinary perspective should create a market within the school.

Even more important – if the AGSM wants to maintain leadership in the market, it cannot do so by shaping its offering to the status quo – there are some areas where it needs to develop competence and a position in the marketplace, and this is one of these areas.

Course objectives

The objectives of this course are to:

1. provide an integrated perspective on issues of ecological sustainability, and economic performance within the context of conflicting interests within society;
2. point the way towards strategic business opportunities which may arise at the intersection between these considerations; and
3. provide students with systems thinking frameworks to allow them to engage constructively with complex systems management issues.

Approach

This course draws on systems thinking (in a number of forms) as an integrative framework across a range of disciplinary perspectives on complex questions of ecology, economics, and competing stakeholder claims. These disciplinary perspectives span the physical sciences, economics, law, organisational behaviour and philosophy. The subject uses systems dynamics, open and closed systems, aspects of purposeful system, and social systems to provide distinct management insights.

The course progress through consideration of natural (open) systems, to a consideration of organizations as an action/decision making subsystem, whereby society draws on and deploys natural resources, at the intersection between individual and collective choices. It highlights the distinct processes of information flows, values and meaning, and tangible resource flows within this system.

Armed with these foundation concepts, we will then go on to explore particular aspects of the operation of these systems. Particular matters to be considered include:

- the role of pricing, both as signals (information) and incentives for behaviour (resource flows);
- the particular instance of the tragedy of the commons, which reflects the combined effect of particular aspects of incentives, information asymmetries, and personal values;
- mechanisms for moderating and regulating self interest, which include not only regulations, but also international standards, value system interventions, and sanction and reward frameworks.
- Corporate responses to these challenges of sustainablitly, equity and economic achievement;
- Individual responses to these challenges;
- Strategic environmental management; and
- Means for ensuring change within organizations, in response to changes within the natural environment and society.

Student outcomes

At the end of this course students should expect that they will have the following competencies and skills:

a. An ability to map out system relationships for the purpose of understanding complex systems relationships and determining management approaches to complex problems.
b. The capacity to perceive and explain the interconnection between business, natural systems, and social systems.
c. The capacity to design strategies which can bring into alignment the requirements of sustainability, stakeholder claims, and economic performance of organizations.

Assessment

Assessment of the student's achievement of the outcomes noted above is through the satisfactory completion of a project within which the student will analyse a complex sustainability/systems issue, through to the generation of an actionable strategy. This will be done in a number of stages throughout the course. The overall criteria for judging this work will be whether the student has been able to demonstrate:

a. An understanding of systems thinking, and its use in understanding the interaction between natural systems, individual and organization decision systems and social systems.
b. Insightful identification of system elements, interactions and processes which underpin the behaviour of the system; and
c. The capacity to determine actionable sustainability-promoting strategies on the basis of this analysis.

Timetable

Unit and topic	Content	Action/activity
1. Framing the issues.(PM)	The logic of the subject Why is sustainability a hot topic for business and government? Some indications of the business aspects of environment The course content and timetable	Selection of target issue for analysis (Sample problem)
2,3 and 4	A 1-day intensive program. Systems thinking tools An illustrative problem Skills development in the use of systems analysis toolset. (Vensim)	System modelling exercises
5,6. **Choice systems (PM)**	Individual, organisational and societal choice system The elements in each subsystem The key flows Implications for community decision making and action	Identification of decision System components for the case study problem. **Submit Study report #1**
7. Economic systems	Examination of the operation of economic systems (as subset of the broader systems framework for regulating resource use within society)	Case studies of resource pricing
8. Pricing and resource use (RM)	The special case of pricing and society's decision s about natural resources use. • Pricing or resourcing • Pricing externalities • Trading • Penalties and taxation	Case studies on Greenhouse Gas Emissions and possible solutions.

9. Pricing and signals (RM)	The role of information about pricing and other economic signals . • Economic signals • Reporting and accountability • Indirect signals (such as insurance premiums, market access issues etc)	Case studies of environmental applications.
10. Preserving the commons (RM)	The recurrent problem of preserving the commons.	Case studies of the Prisoner's Dilemma, the Tragedy of the Commons, and possible solutions. **Submit Study report #2**
11.12 **Regulatory mechanisms (PM)**	Mechanisms for moderating self interest. • The system logic • Regulatory mechanisms • Court made mechanisms • Regulation inter–partes • International Trends • Implications for decision making and action.	**Strategy problem** – **Exploring the link between regulation and entrepreneurial opportunity.** **Submit study report #3**
13. Values, Nature and Culture: Environment ethics within organisations **(Marc Orlitzky)**	The natural environment Environmental ethics and values *Case: Shell and Nigerian Oil*	
14 Interactions between individual choice systems social systems, and natural systems **(MO)**	*Case: The Burma Pipeline*	

15 Strategic Environmental Management (1) (MO)	*Case: Australian Paper Manufacturers*	
16. Strategic Environmental Management (2) (MO)	*Case: Environmental Risk Management at Chevron Corporation*	Study Report #4 due (case analysis)
17, 18,19 Systematic organisational change (JC)	1-day intensive considering the ways in which decisions are made and translated into action.	Action learning
20. Synthesis and strategy	Identification of policy, Organisational change and individual choice initiatives	**Submit Study report #5 (end of exam week)**

Prerequisite

This subject assumes that the student has been exposed to basic managerial logics and techniques, including economics, strategy, and organisational behaviour.

Further studies

Further in-depth development of the issues addressed in this subject is possible by agreement with the lectures in this subject. The focus for such development through applications projects in conjunction with environment groups, such as Earthwatch.