Decision Analysis

Thesis Proposal

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Decision analysis is a formal discipline that uses *probability*, *value/utility/game theory* to analyze complex alternatives under significant *uncertainty* to enable stakeholders with *multiple*, *possibly conflicting objectives* make decisions.

Example Applications:
Strategic Philanthropy: Apply principles of portfolio theory and bayesian analysis to become more sophisticated about achieving social return on investment.

Sustainability Assessment: Conduct a rigorous broad-spectrum analysis of a project from a sustainability perspective using multi-criteria decision analysis, incorporating environmental, social, economic and other considerations.

Policy Research: Compare and contrast policy options from a wide range of possibilities to identify optimal pathways for a diverse set of stakeholders.

Risks:
Wrong problem: Decision analysis is not a panacea. It is important to ensure the problem fits the solution.

Analysis Paralysis: Poor framing can generate too many options to consider and cause doubt rather than clarity.

Proposal: To develop the thesis for a Masters in Decision Analysis around a key problem statement or hypothesis that your organisation is formally engaged with in its consulting practice or research efforts.

Thesis: The thesis will be a novel application, extension or exploration of Decision Analysis in the social sector. The focus will be on demonstrating significant benefits from applying Decision Analysis methodologies to a key problem statement, and furthermore, with actionable results for all stakeholders.

Structure (15 months)**:** There will be five phases to the Thesis project:

1. Exploration
2. Experimentation
3. Topic selection
4. Execution
5. Presentation

Exploration (3 months)**:** In this stage, I will seek time from key personnel to explore the range of your organisation's work, and identify potential areas or projects that could significantly benefit from an application of decision analysis. In this phase, deliverables could be short exercises such as decision trees or linear programming to test whether an application of decision analysis is a good fit.
Meeting frequency: Ad hoc, as and when people give time

Experimentation (6 months): A series of constrained, short term but complete applications of decision analysis for selected projects. These will be of 'production quality', and can include deliverables for clients, or final products for suo moto research efforts.
Meeting frequency: once weekly or more

Topic Selection (1 month)**:** Based on the previous stages, a final thesis topic will be selected. This can be a continuation of an effort from the previous stages as well - in this stage, the precise thesis statement will be formally defined for the purposes of the degree.
Meeting frequency: once weekly or more

Execution (4 months)**:** A focussed and potentially novel application of decision analysis to a significant and challenging project or research effort. The deliverable will be the thesis itself, which will propose an actionable result based on original work.
Meeting frequency: twice weekly or more

Presentation (1 month)**:** The results and associated data will be collated, organised and visualized to make a complete and polished presentation both in the form of a research paper, as well as a potential deliverable for the client. The entire month will be dedicated to the presentation and explication of the results.
Meeting frequency: once weekly