

The Matrix, the Spiderweb & the Influence Diagram: Development of Systems Thinking in the NZ Customs Service

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Abstract

This paper discusses the introduction of systems thinking tools into the strategic planning process at the New Zealand Customs Service (illustrated in Figure 1 below). The recent state sector reforms in New Zealand since 1984 are briefly outlined, together with their impact on the restructuring at NZ Customs Service (NZCS). As part of the review of the more recent restructuring, a Working Group of government officials from the NZCS, Treasury and State Services Commission was engaged to undertake a Baseline Review of Customs activities. This Review included commissioning Victoria University of Wellington to undertake a pilot study, investigating the suitability of strategic modelling to determine the desired purchase mix for the NZCS. Given the large number and complexity of output-outcome interactions, and the preference to capture both soft issues and hard data, it was considered that the traditional analytical techniques might be of limited use. Hence this pilot study, using the system dynamics methodology, was an exploration into the suitability of strategic modelling as an approach to examining these complex interrelationships.

The pilot study was performed on the “Search & Surveillance” Output Class, from the Purchase Agreement between the Minister of Customs and the Chief Executive of NZ Customs Service. However, the focus of the study was on the Search for Drugs. This paper summarises the work undertaken for the pilot study. This includes a qualitative analysis of a range of sector, influence and stock flow diagrams showing the interrelationships between the inputs, outputs and outcomes associated with the search activity. A brief discussion is also provided regarding the availability of relevant output and outcome data for the development of a system dynamics model and the implications of the limited amount of relevant strategic statistical work that has been previously

undertaken at Customs to relate outputs to outcomes. In addition a qualitative analysis is provided of the influence diagrams related to other Customs output / outcome relationships.

Because of the severe time constraints for the project, and the lack of suitable data and appropriate outcome measurements, we concentrated on the systems thinking (qualitative system dynamics) aspects of the project. This has given the Customs Service a “way of thinking that should enable more objective discussions between the NZCS and its Minister on purchase mix decisions”. It has also provided a framework for the strategic analysis of NZCS input/output/outcome relationships. More recently these systems thinking concepts have been incorporated into the current strategic business review and plan at the Customs Service. In addition, the need for strategic alignments and relationships has been more fully recognised at senior levels in Government. This has been facilitated by the development of cluster diagram tools illustrating the potential clusters of government agencies with areas of mutual strategic interest.

Figure 1: Development of Strategic Thinking at NZ Customs Service

