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**MIGRATING INFORMATION SYSTEMS THROUGH THE ANALYSIS
OF POWER, ITS DETERMINANTS AND DISTRIBUTION**

by

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ABSTRACT

A Strategic Information Systems Planning (SISP) study is often undertaken as the first major step when an organisation attempts to revamp its information systems in response to internal or external pressures. The evidence from Australia and overseas is that the SISP implementation success rate has been poor. The motivation and starting premise for this thesis is that a major contributor to these failures was the inadequate attention given to internal politically motivated resistance. The significance of political activity is well documented: for example, in the power model literature which explores the pervasiveness of power and conflict in the organisation.

The determination of *political feasibility* is defined as the process of identifying and understanding such resistance. This means that SISP implementation problems relating to people and the organisation are understood and properly recognised. Political feasibility augments technical and economic feasibility.

The thesis breaks new ground in the following areas:

- First, it broadens the base for information systems planning beyond technical and economic feasibilities to include a more structured and methodical treatment of political feasibility;
- Second; it applies formal conceptual modelling and expert systems technology to the new domain of organisational power and politics; and
- Finally, it empirically investigates (by experiment and case study) the effectiveness of the power source distribution model MP/L1 (Model of Power in first-order Logic) in predicting conflict resulting from SISP outputs.

The MP/L1 model was developed from the literature and an exploratory case study of a SISP implementation at "Gigante Corporation". Technically, the model is represented as first-order logic rules around core data structures, represented in entity-relationship form, and has been implemented as an advisory expert system in the programming language Prolog.

Thesis validation involved testing the effectiveness of MP/L1 as a conflict prediction tool. This was undertaken in two stages: first, by laboratory experiment; and, second, by a field test in order to assess the external validity of the experimental findings. The

major conclusion drawn was that, subject to some qualifications, MP/L1 could indeed be used to good effect in SISP work as a conflict prediction tool.

CERTIFICATION

I hereby declare that this work has not been submitted for a higher degree at any other university or institution.

G.M. McGrath

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7 May 1993