A Conceptual Model for Compliant Management Systems

by

Leigh Howard de la Motte,

B.Comp. (Hons.), Grad. Cert. Commercialisation

A dissertation submitted in fulfilment
of the requirements of the Degree of

Doctor of Philosophy

University of Tasmania

November 2012

Declaration

I, Leigh de la Motte, declare that this dissertation contains no material which has been accepted for the award of any other degree or diploma in any tertiary institution. To my knowledge and belief, this dissertation contains no material previously published or written by another person except where due reference is made in the text of the dissertation.

This dissertation may be made available for loan and limited copying and communication in accordance with the Copyright Act 1968.

Signed,

Leigh de la Motte

Date:

Abstract

The dissertation specifies a Set of Concepts and a Conceptual Model for Compliant Management Systems (CMSs). The Set of Concepts is drawn from existing methodologies and the CMS Model, which is based on the Concepts, is evaluated against a compiled Set of Standard Requirements. The dissertation is analytical, conceptual and argumentative in nature.

The Model is designed to enable the future development of compliant, efficient and globally functional organisational Information Technology (IT) Systems. The *Three Central Requirements* of the Model – *Compliance* (essentially a Legal requirement), *Efficiency* (essentially a Business Management requirement) and *Global Functionality* (essentially an IT requirement) – necessitated a multi-disciplinary investigation in the Legal, Business Management and IT areas.

Compliance was the focus of the research as initial investigations showed no significant solutions existed that provided specific guidelines for the design of inherently compliant IT systems. As compliance relates to meeting regulatory requirements on a local or jurisdictional basis, whereas efficiency and global functionality favour global standards for IT systems (that enable system interoperability), the means for delivering "globally compliant" IT systems is problematic. The research therefore took the approach of "thinking globally and acting locally" by designing a Model appropriate for individual local organisations that can be used, in association with the development of appropriate regulation, as a template for globally compliant IT systems.

It was found that the issues of *Privacy*, *Consent*, and *Accountability* were at the core of compliance requirements and that Digital Service Contracts with systematic Authorisation mechanisms for contract parties (represented as IT System "Groups") provided the means for assuring compliance. The Model proposes software based on *Service*, *Group* and *Service Contract* components – the Service Contract components fulfilling Legal requirements, the Service components fulfilling Business Management requirements and the Group components fulfilling IT requirements.

The Model description in the dissertation focuses on the IT System design. Technical (software design) issues are not explored in detail, making the dissertation readable to persons with minimal IT background. The aim was to draw together existing knowledge in the Legal, Business Management and IT disciplines and to explore relationships between the fields at a high level rather than to delve in detail into any of the three disciplines. The research spans many fields within the three research disciplines, including Contract Law, Privacy Law, Company Law, Legal Consent, Franchising Systems, Business Process Management, Service Oriented Architectures, Cloud Computing, Access Control, Authorisation, Operating Systems, Data Management and Object Oriented Programming.

Acknowledgements

The initial part of the research (about 75%) was supervised by the School of Computing and Information Systems. The remainder was supervised by the School of Law.

Special thanks go to my Supervisors – Jacky Hartnett, for her patience, time and advice on security and IT concepts, Prof Gino Dal Pont for his guidance in producing this dissertation and his advice on legal matters and Prof Young J. Choi for his oversight.

I would also like to thank all the health practitioners and administrators that have contributed ideas. Special thanks go to my wife, Heather, for her insights into hospital practices.

Christian McGee and Andrew Spilling were very helpful in assisting me with IT issues. My thanks also go to Daniel de la Motte for proof reading this document.

Finally, thank you to all my PhD colleagues, who have always made themselves available to assist when asked. Particular thanks go to Barry Pearn and Dean Steer for their help.

Table of Contents