

Chapter 5.23

Developing Software in a Bicultural Context: The Role of a SoDIS^{® 1} Inspection

Don Gotterbarn

East Tennessee State University, USA

Tony Clear

Auckland University of Technology, New Zealand

Wayne Gray

The University of Auckland, New Zealand

Bryan Houliston

Auckland University of Technology, New Zealand

ABSTRACT

This article introduces the SoDIS process to identify ethical and social risks from software development in the context of designing software for the New Zealand Maori culture. In reviewing the SoDIS analysis for this project, the tensions between two cultures are explored with emphasis on the (in)compatibility between a Maori worldview and the values embedded in the SoDIS process. The article concludes with some reflections upon the key principles informing the professional development of software and ways in which cultural values are embedded in

supposedly neutral technologies, and reviews the lessons learned about avoiding colonization while working on a bicultural project.

INTRODUCTION

Rogerson and Gotterbarn (1998) developed an early warning system that can be used by software developers to identify and address potential ethical, professional, and social risks in software development. The method, a software development impact statement (SoDIS) inspection (Gotterbarn, Clear, & Kwan, 2004), uses

ethical relations to connect broad-based project stakeholders to the project tasks and deliverables. The SoDIS methodology based upon standard Western ethical values has been proven effective in a variety of environments. It has been applied to the development of a data warehousing project in Boston, the development of software for the analysis of psychometric test data for youth, Web sites in New Zealand, and electronic voting in the UK. In each of these cases, the SoDIS inspection process identified significant risks in the development process and in the final product (Gotterbarn & Rogerson, 2005). This identification of the risks gave management the opportunity to develop successful risk mitigation strategies.

This article introduces the Software Development Impact Statement process and discusses its application to a bicultural project. In reviewing the SoDIS analysis for this project, the tensions between the two cultures are explored with emphasis on the compatibility between a Maori worldview and the values embedded in the SoDIS process. The article concludes with some reflections upon the key principles informing the professional development of software and reviews the lessons learned about working on a bicultural project.

The article recounts the application of the SoDIS process to an ethically sensitive project involving software development for a Maori Tribal Authority. Maori are the indigenous people of New Zealand, a bicultural society in which the other culture could broadly be termed *Western* (comprising subsequent New Zealand settlers from a predominantly European immigrant community). Clear and Gotterbarn used this opportunity to address action research questions such as the following:

1. Would the ethical connectives between task and stakeholder that had been derived from software codes of ethics and codes of prac-

tice be adequate to identify ethical risks in a manner that was sensitive to the indigenous culture in this bicultural context?

2. Would the use of the SoDIS process colonize the software system for Maori stakeholders with Western cultural values?

BACKGROUND AND TERMS RELATED TO THE PROJECT

Historical Context

The history of New Zealand, as with most former colonies, reflects a complex series of struggles between the colonizing settlers and the indigenous peoples. A unique feature of New Zealand history is the signing of the Treaty of Waitangi in 1840 between the British Crown and a large number of the indigenous Maori tribes. This controversial treaty, in which the Maori people engaged as equal parties in a partnership whereby they ceded a degree of sovereignty to the crown in exchange for certain rights, since has been regarded as “the legitimate source of constitutional government in New Zealand” (Walker, 1990, p. 98). The English and Maori language versions of the treaty differ in substantial ways and are each open to quite different interpretations. Subsequent debate has revolved around these differing interpretations of the treaty, and consequent actions have been taken by the Crown and its agents. Walker (1990, p. 98) observes that “acquisition, control and, ultimately, expropriation of land were the key factors in the consolidation of sovereignty” by the Crown. This was in spite of the treaty’s guarantees to the Maori signatories of “full exclusive and undisturbed possession of their Lands and Estates, Forests, Fisheries, and other properties which they may collectively or individually possess, so long as it is their wish and desire to retain the same in their possession” (Walker, 1990, p.

20 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:
www.igi-global.com/chapter/developing-software-bicultural-context/29501

Related Content

Test Data Generation and Selection Using Levy Flight-Based Firefly Algorithm

Abhishek Pandey and Soumya Banerjee (2021). *International Journal of Software Innovation* (pp. 18-34).
www.irma-international.org/article/test-data-generation-and-selection-using-levy-flight-based-firefly-algorithm/277213

Riki: A System for Knowledge Transfer and Reuse in Software Engineering Projects

Jörg Rech, Eric Ras and Björn Decker (2009). *Software Applications: Concepts, Methodologies, Tools, and Applications* (pp. 856-909).
www.irma-international.org/chapter/riki-system-knowledge-transfer-reuse/29426

Beyond Development: A Research Agenda for Investigating Open Source Software User Communities

Leigh Jin, Daniel Robey and Marie-Claude Boudreau (2009). *Software Applications: Concepts, Methodologies, Tools, and Applications* (pp. 1822-1834).
www.irma-international.org/chapter/beyond-development-research-agenda-investigating/29480

A Comparative Study of Machine Learning Techniques for Android Malware Detection

Mohamed Guendouz and Abdelmalek Amine (2022). *International Journal of Software Innovation* (pp. 1-13).
www.irma-international.org/article/a-comparative-study-of-machine-learning-techniques-for-android-malware-detection/309719

Testing in the Cloud: Balancing the Value and Risks of Cloud Computing

Randall W. Rice (2013). *Software Testing in the Cloud: Perspectives on an Emerging Discipline* (pp. 404-416).
www.irma-international.org/chapter/testing-cloud-balancing-value-risks/72242