PROJECT # 22

SUPERVISOR/S:	Dr Alvin Yeo, Annika Hinze, Nic Vanderschantz & Aaron Matenga
PROJECT TITLE:	Researching and developing a co-design software model for indigenous communities: Case studies of a Māori-Tauiwi approach
FIELD:	Software Engineering
DIVISION/SCHOOL:	HECS - Au Reikura School of Computing and Mathematical Sciences
PROJECT LOCATION:	Hamilton
EXTERNAL PARTNER/S:	Te Tāwharau o Te Whakātohea Iwi & Ngāti Hine

PROJECT ABSTRACT:

Introduction:

Indigenous communities worldwide face unique challenges in the digital age. Traditional knowledge and practices often lack representation in software solutions, leading to a gap between available technology and the needs of these communities. There is a need to develop a collaborative model for co-designing and developing software specifically tailored for indigenous communities. At present, such a model in particular for Māori does not exist. To develop the model, this project aims to document and report on a successful collaboration between Māori (from Te Tawharau o Te Whakatōhea Iwi) and Tauiwi (non-Māori) (from the Au Reikura School of Computing and Mathematical Sciences (SCMS)), and another upcoming collaboration between SCMS and a new partner iwi (Ngāti Hine). (The model will detail methods involving iwi as well as tauiwi, and encompassing the engagement, design, implementation, maintenance, and sustainability of software for indigenous communities)

Objective 1: Document and analyze the collaborative software development project between the Whakatōhea and SCMS, University of Waikato. This will include:
- Identifying the specific software being developed
- Analysing the co-design methodology employed in the project
- Assessing context, the challenges and successes encountered during the project
- Evaluating the impact of the developed software on the Whakatōhea community

At present the Waiata App has been completed, and the Digital Library and the Taku Hīkoi App is being developed

Objective 2: Observe and document the collaboration between the University of Waikato and Ngāti Hine. This will include:
- Observing the collaboration activities between researchers from University and Iwi
- Identifying success and challenges, and lessons learnt
- Reporting on the collaboration as the second case study
- Drawing comparisons between the first and second case study

Significance:

This project addresses a critical gap in existing software development models by studying and reporting on successful collaboration between Māori and Tauiwi.

As the Whakatōhea collaboration has been going for 7 years, and the Ngāti Hine collaboration is just starting, the comparisons especially the whakawhanaungatanga (relationship building) component will be useful. In addition, 7-year Whakatōhea collaboration will help guide Ngāti Hine's engagement and software development.

The outputs of this project will inform the development of a software model that prioritises work that is led and driven by Māori and Mātauranga Māori.

This co-design model empowers indigenous communities by fostering ownership over technology solutions that address their specific challenges, be it cultural preservation, capacity and capability building.

The case studies and model will also provide Universities, Tauiwi, and other iwi with valuable guidance for collaborative research with indigenous partners, specifically in software development.

STUDENT SKILLS:

- Programming experience (required)
- Strong understanding of software development methodologies (required)
- Excellent research and report writing skills (required)
- Conducted interviews and reporting of results (preferred but not required)
- Experienced working with indigenous communities (preferred but not required)
- Ability to speak Te Reo Māori is not required, but must have interest in working with the cultures

PROJECT TASKS:

1. Interview key stakeholders, researchers in SCMS, University of Waikato; Te Ihi Ka Roa, Te Tawharau of Te Whakatōhea Iwi
2. Writeup the Whakatōhea-SCMS case study – success, challenges, lessons learned
3. Observe the on-going collaboration between SCMS and Ngāti Hine on upcoming software projects which addresses needs of Ngāti Hine
4. Writeup the Ngāti Hine-SCMS case study – success, challenges, lessons learned
5. Draw comparisons from the two case studies; which will help to contribute to the co-design software model

EXPECTED OUTCOMES:

- Student's Research Poster (as per clause 6 of the Scholarship regulations)
- The final output will be two case studies reporting on the approach employed by the tauiwi researchers and iwi, to co-design and develop software for indigenous communities.
- Case study 1 of the Whakatōhea- University of Waikato project,s which can be used for professional development of researchers, and students in the area of software development.
- Comparisons from the two case studies which will be used to inform the development of the new co-design and software development model
- A journal or conference publication (in the longer term)