Māori language interfaces

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Introduction

The decisions around the language of a software interface lie with the software engineer and their development team. The decisions are, or should be, based primarily on the likely target audience and how they will most easily be able to use the interface. That is to say, language decisions should be based on the usability of the interface. If this was applied for all cases it is unlikely that we would see interfaces in te reo Māori

From a computational perspective the language of an interface does not need to be in English, it can just as easily be programmed to display in Spanish, in French, in Māori or any other of the 1000 languages that are covered by the Unicode scripts. Ultimately the computer itself does not think, or compute, in a spoken language; all of its operations are undertaken in machine code based on the binary number system, which is then compiled onto various layers of assembly and high level programming languages which ultimately display human language messages in text boxes. What is displayed in those text boxes is quite arbitrary to running the computer, but it is everything to the usability of the interface, and subsequently, the usefulness of the software.

This paper considers the usability of the interface and the ramifications for te reo Māori if the interface language, the messages displayed in those text boxes, is written in te reo Māori.

An initial question that may arise is 'Why would we want to create software that has an interface in te reo Māori?' Studies have shown (see examples in this paper) that interfaces are more difficult to use in te reo Māori. The simple answer to this is Māori language survival. If opportunities are not created where Māori language can be used in modern technologies, then the language itself is dead in the water. For the Māori language to survive and be relevant it must be available in all avenues of life and in all avenues of communication. Modern technologies are increasingly important to our regular communications, but they are even more relevant to the young people who are the guardians of our languages in the future. For Māori language to survive, younger generations must perceive it as a language they want to use and it must be available in all avenues of their communications.

Historic Māori language interfaces

Computer interfaces in te reo Māori first appeared more than 30 years ago. The Kōhanga Reo National Trust, in 1986, developed its own in-house Māori language training system on computers that operated in Māori, English or a bilingual mode. 12 complete systems were built and distributed throughout the country (Laws, 2001). In 1987 a company called Reddfish produced a software suite that ran on MS-DOS, called Te Kete Pūmanawa, whose interface was totally in te reo Māori. The software included a clock (Te Karaka), an interactive story (Te Mahi Hangarau Ahi), an arithmetic challenge (Te Tatau), a take on

the game of Hangman (Kei Oha te Taniwha) and a traditional game (Mū Tōrere). The New Zealand Council for Educational Research (NZCER) set up a bulletin board in 1990 where all the menu items, system prompts and messages were in te reo Māori (Benton, 1996).

While the examples listed above were early endeavours into Māori language interfaces, little has been written on their actual usage, and in particular their usage in te reo Māori. Following are three examples of Māori language interfaces that have had some form of usability analysis undertaken on them.

Microsoft software in te reo Māori

Microsoft NZ has an extensive history of supporting initiatives for te reo Māori. In the early 2000s it commissioned the translation of Microsoft Windows and Office into te reo Māori, a substantial undertaking involving over 900,000 words in over 180,000 strings. The first release, Windows XP and Microsoft Office 2003 became available in 2005, and subsequent versions of Windows (Vista, 7, and 8) and Office (2008, 2010 and 2013) have also been released with te reo Māori interface options. *Figure 1* is an example of what this looks like to the user.
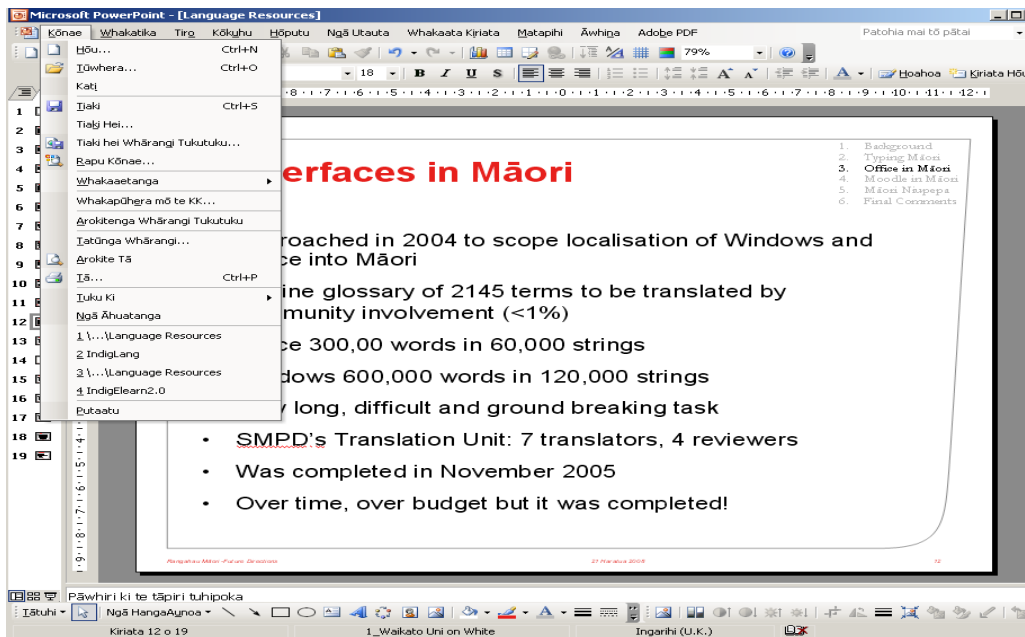

Figure 1: *Microsoft Office in te reo Māori*

In 2012 a usability survey was undertaken (Mato, Keegan, Cunliffe, & Dalley, 2012) with Māori medium schools of New Zealand, likely users of the Microsoft interfaces in te reo Māori. Principals of these schools were contacted and asked a number of questions regarding their and their school's use of products in te reo Māori and in particular the Microsoft products. The survey showed that less than one quarter of Māori medium schools were using these products, citing an inability to access the interface, a lack of awareness that

the interface existed and an unfamiliarity with the new terms in the interfaces as the biggest barriers to usage. However almost all the schools agreed the software should be available to their children in te reo Māori with some highlighting that 'it should be user friendly'.

Two Degrees smart phones in te reo Māori

Two Degrees has launched two versions of their Huawei smart phones in te reo Māori. In 2011 it launched a Huawei IDEOS X3 with an interface that could be switched between English and te reo Māori (see *Figure 2* for a screenshot of this phone) and then in 2017 it launched a Huawei P10 and P10+ with a similar bilingual-interface.
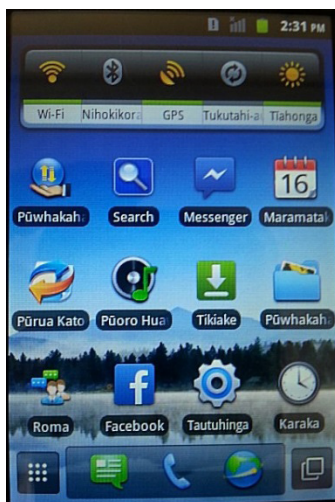

Figure 2: Huawei IDEOS X3 Māori interface

A usability study was undertaken on the IDEOS X3 phone with 12 participants that were either fluent or semi-fluent in te reo Māori (Mato, Keegan & Naera, 2016). None of the participants realised the phone existed and all were excited to use it. All the participants had difficulty with the new or unfamiliar words, all suggesting the English interface was quicker because they were more accustomed to using a smart phone in English. However, three quarters (9/12) stated they would prefer to use the interface in Māori, primarily to support and grow their language; "It was cool that somebody out there is trying to promote our language through technology".

3M library kiosks in te reo Māori

3M New Zealand (3M) manage a collection of library SelfCheckTM machines that are available in approximately 70 locations in New Zealand. Since 2003, 3M have been using an interface that includes an option for te reo Māori. While the interface does appear rudimentary, see *Figure 3*, it is nevertheless an endeavour by 3M to support te reo Māori.

Figure 3: *3M Māori language Library kiosk interface*

A brief usability study was undertaken in 2013 where six Māori students were asked to use the 3M library kiosks to self-issue some books using both the English and te reo Māori interfaces (Mato, 2013). The students found the interface difficult to understand (in te reo Māori) primarily because of the new words. However, they did state that it would become easier to understand if they were to use it more often and that it did give them a sense of pride to see the Māori language as an option on the interface. While most of the group (4/6) felt it was more difficult to use in Māori, all of them (6/6) said they would prefer to use it in te reo Māori.

Other interfaces in te reo Māori

Aside from the three products mentioned above there are a number of other companies who have made their technology available with a Māori language interface. Google has translated their web search page into Māori, made available their translator toolkit for te reo Māori and have a Māori language option at Google Translate. The ATM terminals at BNZ banks have had a Māori language option since 2007, something that has also been adopted by Westpac in 2016 and ANZ in 2017. Westpac went one step further in 2017, developing an option for the Waikato dialect (Keegan & Mato, 2014; Mato & Keegan, 2013).

There are a significant number of smart phone apps, 30+ from Google Play and 25+ from Apple, that have some form of Māori language interface. There are also a significant number of websites that are now providing Māori language interface options. Far Cry 3 and Māori Pā Wars have examples of Māori language usage in the gaming industry.

Comment

Clearly the Māori language is beginning to get a foothold in language interfaces options used with technology in New Zealand. More research is needed to understand how useful

and how effective these interfaces are in te reo Māori. But the limited studies undertaken to date have highlighted some important points:

1. Interfaces in te reo Māori are more difficult to use. Even for those with a high fluency in te reo Māori or/and experience with using the technology.
2. Speakers of te reo Māori are (pleasantly) surprised to see interfaces in te reo Māori.
3. Users state they will use these interfaces in te reo Māori.

It is this third point that warrants further discussion. Without usage, even if at this stage it is 'stated' usage, there is no point in developing these interfaces. From a business perspective there is no economic benefit for creating a Māori language interface. There are not the numbers of users to justify the cost of development. To quote a business terminology; 'there is a negative return on investment' when creating Māori language interfaces. A further argument against the case is the fact that all speakers of te reo Māori are, at least, bilingual. They can all also speak English, so why is a Māori language interface necessary?

The usability studies above highlight that Māori language interfaces are harder for Māori language users to use. There is confusion and difficulty with the new words and if something is needed to be done quickly, it is easier in English. But users have expressed their excitement, their pride and their sense of identity to see Māori language interfaces and subsequently have indicated they would use the Māori language versions. Perhaps the biggest obstacle is getting the interfaces translated into Māori in the first place. Once a Māori language version is offered, strategies could be deployed to actively encourage its usage. Strategies such as Nudge Theory and Active Offer (Keegan & Evas 2012), and setting the default language to Māori (Keegan & Cunningham, 2008) are all approaches that could, and should, be used to encourage usage of Māori language interfaces.

However, one thing remains abundantly clear, if te reo Māori language interfaces are not created, and are not used, the chances of te reo Māori future survival as a language of everyday usage are diminished.

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