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The virtualMe: A Knowledge acquisition framework

A thesis presented in partial fulfilment of the requirements
for the degree of

Doctor of Philosophy (PhD)

in

Information Systems

at Massey University, Palmerston North,
New Zealand.

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2008

Abstract

Throughout life, we continuously accumulate data, information and knowledge. The ability to recall much of this accumulated knowledge commonly deteriorates with time, though some forms part of what is referred to as tacit knowledge. In the context of education, students access and interact with a teacher's knowledge in order to create their own, and may have their own data, information and knowledge that could be added to teacher's knowledge for everyone's benefit. The realization that students can contribute to enhancing personal knowledge is an important cornerstone in developing a mentor (teacher, tutor and facilitator) focused knowledge system.

The research presented in this thesis discusses an integrated framework that manages an individual's personal data, information and knowledge and enables it to be enhanced by others, in the context of a blended teaching and learning environment. Existing related models, structures, systems and current practices are discussed.

The core outcomes of this thesis include:

- the *virtualMe* framework that can be utilized when developing Web based teaching and learning systems;
- the *sniplet* content model that can be used as the basis for sharing information and knowledge;
- an annotation framework used to manage knowledge acquisition; and
- a multimedia object (MMO) model that:
 - allows for related media artefacts to be intuitively grouped in a logical collection;
 - includes a meta-data schema that encompasses other meta-data structures, and manages context and referencing; and

- includes a model allowing component parts to be re-aggregated if they are separated.

The *virtualMe* framework provides the ability to retain context while transferring the content from one person to another and from one place to another. The framework retains the content's original context and then allows the receiver to customise the content and metadata so that the content becomes that person's knowledge. A mechanism has been created for such contextual transfer of content (context retained by the metadata).

Keywords:

Knowledge acquisition, knowledge management, knowledge technologies, computer supported cooperative work, snippet, Media Vocabulary Markup Language, MVML, multimedia object, MMO, virtualMe

Acknowledgements

Researching and writing a thesis is a significant undertaking and, particularly when done as a part-time student. In order for the thesis to be accomplished many people were involved in the process, and these include: the supervisors, reviewers, colleagues, peers, peer students, students and family and to all I owe a debt of gratitude.

As supervisor and friend, Professor Kinshuk, formerly of Massey University and now of Athabasca University, Canada, has been instrumental in keeping the research on track and with a significant amount of patience has guided the progress leading towards the completion of thesis.

My thanks are extended to Dr. Katherine Sinitsa and Professor Klaus Dieter-Schewe for monitoring progress during the thesis, and to Dr. Lynn Hunt for assistance with the emendations.

Mention too must be made of the many reviewers who have read, reviewed and offered suggestions and comments for the many publications produced during the course of this research. Their comments and insights have all contributed to the quality of the thesis and form an important component in the validation of the research.

My work colleagues have persevered throughout the many years of this research work, providing support through discussion, mentoring and being critical friends. Special mention must go to Kim Hagen-Hall for keeping me on track, providing a sounding board and to help brain-storm the ideas and to help with managing the flow of the thesis, to John Jamieson, who assisted with the technical implementation issues with regards to the multimedia object (MMO), to Stephen Corich and Frina Albertyn who are also working towards their PhDs, with Steve being instrumental in getting me underway in the first instance, and to my other work colleagues who have all provided inspiration at various times throughout the PhD.

Mention too must be made to the Eastern Institute of Technology (EIT) Hawke's Bay, and particularly to Ian Richie (Faculty Dean) and John Nelson (inline manager), who have been instrumental in taking care of the work load and financial issues.

Peers at other institutes also have provided support for the research, both at conferences and through their interest in the research. Particular thanks need to be made to members of the research and support working group of the National Advisory Committee on Computing Qualifications (NACCQ).

Throughout the years of the research, a core group of PhD students have met regularly at conferences, workshops and in weekly online meetings. These students also formed the core group of the Massey University's Advanced Learning Technology Research Centre (ALTRC). My thanks to these students (some of whom have gained their PhDs) who have all provided support during this research:

As this research has been conducted in conjunction with my occupation as a lecturer in information technology, it is important that thanks be extended to the many students who have supported me in my research. The research would not have been possible without their encouragement, comments, insights and support.

Finally, and most importantly, I must acknowledge the support of my family. To Catherine, Gerard and Diana for their unswerving encouragement, understanding and perseverance over the many years I have taken to complete the research.

Ethical approval

Ethical approval was obtained from the Massey University Human Ethics Committee and Eastern Institute of Technology, Hawke's Bay Research Committee for the survey used to validate parts of this research and described in the thesis. Copies of the ethical approval correspondence are included in Appendix D.

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