

UNIVERSITY OF SOUTHERN QUEENSLAND

Faculty of Business and Law

**DIFFUSION OF INNOVATION THROUGH VIDEO
MEDIATED SOCIAL NETWORKS:
INFLUENCING SUGAR CANE FARMING PRACTICES
APPLYING EVIDENCE-OF-ADOPTION STRATEGIES**

A Thesis submitted by

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SUMMARY

Faced with declining government investment, agricultural research and development needs a more cost-effective adoption pathway than traditional extension activities have been able to provide. Yet despite the high value placed in online services by most other industries, farmers and extension agents have not capitalised on the Internet's enormous potential. However, before contemplating the use of Internet and social networking technologies, it was felt a more rigorous understanding of the social context that underpins farmer-to-farmer adoption was required.

To this aim, the Video Mediated Social Network is presented here, as a method that refashions technology transfer from an archaic top-down process into a participatory bottom-up approach that enables change by facilitating the transfer of innovations between farmers using video. Central to this approach is the *Evidence-of-Adoption Framework*, where motivating ideas are formed at the intersection between exposure to industry-wide evidence-of-adoption and the cultural-historic context of individual farmers. These motivating ideas, brought about by a tacit acceptance of validity claims conveyed through a language of operational detail combine with the significant influence of peers to trigger change.

This research conducted in two phases, began by iteratively building theory through exploratory research, which lead to a synthesis of *Communicative Action*, *Cultural-Historic Activity Theory* and *The Theory of Planned Behaviour* in its theoretical framework. Observations of facilitated discussions were then combined with an electronic survey, with samples stratified across 12 regional locations. Treatments consisted of two DVDs, a website and video presentation. Video clips conveyed the personal accounts of farmers' experiences adopting new technologies and practices on their farms.

Correlation analysis using Spearman's ρ revealed that farmers who watched the video clips felt strongly encouraged by the model farmers, from whom they obtained details about

practices that had previously eluded them. These normative beliefs increased their confidence and self-efficacy towards practice change, which combined with existing positive attitudes, motivated them to change. This ultimately led to some degree of behavioural control, including facilitating change (96%), planning to change (60%) and actual change (32%). Additionally, farmers who were regular Internet users found this content compelling enough to want to access it online.

CERTIFICATION OF DISSERTATION

I certify that the ideas, experimental work, results, analyses, and conclusions reported in this dissertation are entirely my own effort, except where otherwise acknowledged. I also certify that the work is original and has not been previously submitted for any other award, except where otherwise acknowledged.

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TO BONNIE, MERCEDES, STIRLING, AND
MUM AND DAD

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ABBREVIATIONS

ARS	Audience Response System
BSES	Bureau of Sugar Experiment Stations
CHAT	Cultural-Historic Activity Theory (Vygotsky, 1986)
DoI	Diffusion of Innovations (Rogers, 2003)
DPI&F	Department of Primary Industries and Fisheries (now QPIF)
DSS	Decision Support System
Ha	Hectares
QPIF	Queensland Primary Industries and Fisheries (formally DPI&F)
RDC	Research and Development Corporation
R&D	Research and Development
RD&E	Research, Development and Extension (Dept. Agriculture, Fisheries & Forestry, 2008)
ToCA	The Theory of Communicative Action (Habermas, 1984;1987)
ToPB	The Theory of Planned Behaviour (Ajzen, 1991)

LIST OF PUBLICATIONS

Thomas, H 2009 'Facilitating ad-hoc abstraction to improve end-user programmed decision support tools' *Proceedings of the 2009 IEEE International Conference on Industrial Technology*, pp. 1-6, Gippsland, VIC

Thomas, WHP 2009 'Online Shedmeetings: Experiences producing video webcasts that showcase sugar industry best practice' *Proceedings of the Australian Society of Sugar Cane Technologists*, vol. 31, pp. 240-249, Balina, NSW

Thomas, WHP 2010 'Video Mediated Social Networking: A case of how this occurred in the Australian sugar industry' *Proceedings of the Australian Society of Sugar Cane Technologists*, vol. 32, pp. 497-506, Bundaberg, QLD

Thomas, WHP 2011 'Video Mediated Social Networks: A future adoption pathway for the Australian sugar industry?' *Proceedings of the Australian Society of Sugar Cane Technologists*, vol. 33, Mackay, QLD