# A Framework to place Cross-cultural Case Study Research in an Information Systems Action Research Context

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**ABSTRACT:** *The progressive evolution of the global information society has escalated the debate over effective ways to facilitate relevance in information systems research without sacrificing rigor. Accommodation of interpretivist research methodologies has been suggested to address this problem, particularly in instances of research conducted in Asian developing countries.  This paper discusses problems encountered in attempting to apply, in such a context, positivist longitudinal case study research methods, using models originating from research focused on organisations in Western, developed economies. We outline a synthesis of the positivist methods with an action research approach, and the subsequent use of a particular research framework to track progress and report outcomes.*

*Keywords: Information systems, action research, case study, national culture, research framework*

## INTRODUCTION

The themes explored in this paper arise from a synergistic convergence of two streams of information systems (IS) research.  The first is an investigation of the interaction of theory and practice in IS, with an aim to develop an explanatory framework, facilitated by an understanding of the distinction between research and consultancy in an action research context  (James and Smith 1999). The recognition of the need for such an understanding arose, in part, from observation of the difficulties encountered in a second stream of research, wherein attempts were made to apply traditional concepts of rigor in IS research to understanding problems of the global information society, where relevance is of vital concern (James, Ha  and  Smith 1999). Particular insight was derived from observation of the difficulties encountered in applying a strictly positivist methodology to a research project focused on information technology (IT) adoption and diffusion in a Vietnamese context. The action research framework devised for study of IS research and consultancy projects has evolved to some extent as a result of its utilization in that case study, as discussed in this paper.

The promulgation of resolution 49/CP by the Vietnamese government in 1993 was a trigger for the above-mentioned research project. This resolution described policy and strategy for the development of IT in Vietnam in the 1990's (Ha 1999, SCVNPIT 1998). It was initially assumed that policy 49/CP would, in the prevailing economic climate following the success of the Vietnam Government's Doi Moi policy to move to a more market based economy, unleash a surge of entrepreneurial activity and effort, taking advantage of the latest information and communication technologies (ICTs). Such an effort is vital to traders in less developed countries (LDCs), who have traditionally suffered a lack of access to trade-related information (Ha 1999). Montealegre (1996) has argued however that, although many researchers have asserted that the developing global infrastructure has the capacity to solve many of the problems confronting LDCs, in reality most fundamental and technological progress is occurring in only a few advanced, developed countries. This widening gap in ICT utilisation has raised concerns regarding the ability of developing countries to participate in an emerging world economy (Avgerou 1998, James 1999).

Against this economic background, the role of Electronic Trading Networks (ETN) in the economic development of Vietnam was deemed to be significant (Ha and James 1996). The present research had its genesis therefore in a study in the Vietnamese context, of a possible development of IT, the role of IT in trade, and the use of the Internet for trading purposes.

## INITIAL RESEARCH APPROACH

The primary aim of the initial study, commenced in 1995, was to identify the organisational factors essential to the successful subsequent implementation of electronic commerce (E-Commerce) and electronic data interchange (EDI) operations in Vietnam. Major issues considered included: (1) the management structures of such a network; and (2) the change in organisational structures required of companies participating in such a network.

That research focused on trading companies in Vietnam. Since the concept of studying the relationship between organisational structure and information technology application was novel in Vietnam, an exploratory approach was adopted. It was expected that survey research (questionnaires and semi-structured interviews) combined and integrated with a number of representative case studies, would provide a basis for an objective description. Applying widely accepted positivist conventions for such research, a questionnaire was developed for the initial investigation, and was subsequently reused, to develop a base line and to compare the results obtained over time. Concurrent with delivery of the survey, initial approaches were made to three firms to be involved in case studies.

Initial observation and inquiry disclosed that although many of the companies interviewed had an elementary understanding of the possibilities of electronic transactions and trading, none had moved to implement other than the most basic IT technologies. IT implementation was in general limited to telephone, facsimile and occasionally a desktop computer  (Ha and James 1996).  This limitation was, despite positive government policy, endemic and pervasive in all spheres surveyed.  The implications of this limitation triggered change to both the scope and focus of the inquiry over time.

One of the first responses of the researchers was to commence the development of a critical success factor (CSF) model for adoption of IT by the Vietnamese companies studied. The CSF method was adopted in the context of early 1990s understanding, based on 1980s evaluations (e.g. by Boynton and Zmud 1984), of its usefulness for defining corporate direction for IT. The adoption of the CSF model was further influenced by current Australasian experience, with the factors included in the CSF model embracing technological and organisational culture issues in IT adoption by organisations in Western developed countries.

It should be noted also that the very successful completed response rate of 67% for the original questionnaire was not sustained for its reuse in subsequent surveys. The second survey produced a response rate of only 36%. Of the surveys returned 33% were incomplete and 26% of the balance (67%) had responses that raised concerns when carefully considered by the researcher.  Specifically, the majority of respondents to the subsequent surveys were unknown to the researcher. They had received the questionnaire through a variety of means emanating from the researcher's network of commercial and government contacts and associates.  Analysis of response patterns of this category of questionnaires showed significant discrepancies from that of the questionnaires delivered and completed in the presence of the researcher.

The differences in the responses were identified and a number of features became apparent. The questionnaires completed within the interview process more nearly coincided with the interviewer's observations on the ground. The questionnaires completed outside the interview included many incomplete and contradictory responses. They varied, dependent on the informant's status in the power structure and their degree of familiarity with the researcher.  This triggered a substantial reappraisal of both the questionnaire and the complete initial research approach.

A subsequent field trip was used to visit a number of the respondents previously unknown to the researcher, and to administer the questionnaire personally. This was done in parallel with data gathering for the case studies on the selected companies. The responses obtained confirmed the researcher's suspicions that powerful social, cultural and political factors were influencing the responses and that it would be extremely difficult to factor out such influences to derive unbiased data. The researcher was also led to assess his own position as a disinterested data gatherer and the influence on, or bias of, the responses of informants as a result of their perception of the role of the researcher.

## REFLECTION ON INITIAL FINDINGS

A possible interpretation of the unanticipated discrepancies in the initial research results, was that the key researcher's disassociation from Vietnamese commercial operations, and his absence overseas for a period of time had diminished his acceptability to important stakeholders, who were gatekeepers to informants and data.   This researcher, because of his time overseas, was to other than his friends and long time business associates, now outside the power structure. There was some evidence that this perception by informants, of the relative position of the researcher, affected their response to the questionnaires.  This impact of stakeholder interests on the willingness to impart information has been

reported by a number of authors¸ and is claimed to be more significant in some Asian cultures than in developed democratic western societies (see, e.g. Hofstede 1991, Thanasankit 1999).

The validity of 'Western management theory in non-western environments' has been questioned by Hofstede (1991). Lewis and Shea (1996) are among a number of authors who stress the role of culture in determining management practice.  More recently, Wong and Gregory (1997), in reporting research into the applicability of Western models to the Hong Kong newspaper industry, suggest that 'models of strategic information systems planning developed in the West have little input from empirical research conducted in the East' (1997, p. 13).

Ciborra (1998) raises a more fundamental objection to the practice of making assumptions about the 'relationship between management models and methods .. and everyday phenomena concerning the existence of people at work' (1998, p. 11). He places this objection in the context of the need to adapt idealised models to accommodate 'the world out there' (1998, p. 12) and to look beyond positivist methodologies to see 'new dimensions' of technology opportunities (p. 16).

On the positive side, the experience in the Vietnamese situation proved the CSF concept to be a useful one.   Interviews with senior Vietnamese managers verified some previously published perceptions regarding western senior managers, who 'endorse its application as a means of identifying important areas that need attention' (Boynton and Zmud 1984). However, the CSFs included in the initial model, as a result of study of Western literature, proved inadequate to explain the needs of Vietnamese organisations. This finding verified the need, perceived by Ciborra (1998), to adapt models to the specific 'world' of application.

Developed countries are effectively exploiting IT for commercial purposes. In developing countries, information technology transfer often fails because those countries do not take into account the distinctive business environment (Avgerou 1998,  James 1999). Montealegre (1997) found that many earlier studies have paid little attention to how the interaction between IT and the organisation evolves over time. A model of the CSFs found suitable to one society, may therefore be unsuited for application to another society.  Vietnam has developed different concepts of economic structure, distinct from those of many other countries. Its societal architecture therefore remains separate from that of other LDC's and the structures predicted by Western models.

Despite the ongoing policy of Doi Moi, the emergence of the private sector in Vietnam has been a gradual process.  This trend was recognised early in the project, leading to a perceived need to seek government officials as informants.  This strategy was reinforced by the view that the culture of Vietnam as an Asian society, shares, with countries such Thailand (Thanasankit 1999), the high power difference characteristic described by Hofstede (1991).  Vietnam's heritage of central planning and hierarchical authority structures reinforces this tendency and places government and other institutional authorities in the position of gatekeepers, controlling the researcher's access to information and data, as described by Gummerson (1991). In addition to the above-mentioned gatekeeper roles, it was realised that effective utilization of IT is dependant on a number of infrastructure components. In the context of Vietnam as a developing country, these requirements are summarized in James (1999).

In response to the issues discussed above, questions were raised regarding the subsequent approach to be taken and the sole applicability of positivist research methodology to the research context.  This reflection, combined with analysis of the initial data gathered from questionnaire and interviews, mandated a change to an action research approach, a strategy also recommended by Wong and Gregory (1997, p. 14). To address the cultural issues of power, distance and information sharing, thus obtaining effective access to informants, the researcher needed to expand his role to reinforce 'title, rank and status in the organisation or society' (Thanasankit 1999, p. 89). The expanded information base and the need to adapt the CSF model led to the desire to adopt a methodology that would allow evolution of a conceptual framework for the research and the synthesis of multiple methods.  The research needed to become a journey of gradual understanding of the interplay of forces, both cultural and economic, that in a Vietnamese context are played out in isolation yet have a vital impact on each group or organisation under the present social structure.

As a result of these findings, the research context was expanded to deal with national culture and infrastructure issues, and the longitudinal case study incorporated in a wider methodological structure as discussed below (Ha 1999, James, Ha and Smith 1999).

## OVERVIEW OF AN ACTION RESEARCH FRAMEWORK (ARF)

Baskerville and Wood-Harper (1998, p. 90) describe, as a result of a review and synthesis of much of the earlier literature, action research methods as being suitable to IS because of their applied nature. They claim that:

'Action research merges research and praxis thus producing exceedingly relevant research findings'

They describe a variety of action research forms, distinguished by the characteristics of process model, structure, typical involvement and primary goals. While all these forms are reflective to the extent that researchers are guided to reflect upon and learn from the effects of action, forms (action science, participant observation and action learning) that are specifically reflective in process provide for 'an actor's discovery of where their behaviour is unexplained by their own understanding' (1998, p. 100). The search for explanation guides diagnosis and iteration. Building upon the above-mentioned initial research experience, we hold that this characteristic is essential to the conduct of relevant cross-cultural research, to understand and facilitate access for developing countries to the benefits of the global information society. In the Vietnam-based longitudinal case study research, and the necessary associated contextual analysis and remedial intervention, a framework that accommodates and links a variety of approaches is essential. In the following, we outline one such framework (that of James and Smith 1999) (see Figure 1), and reconceptualise the above, and subsequent, research in Vietnam in terms of that framework.
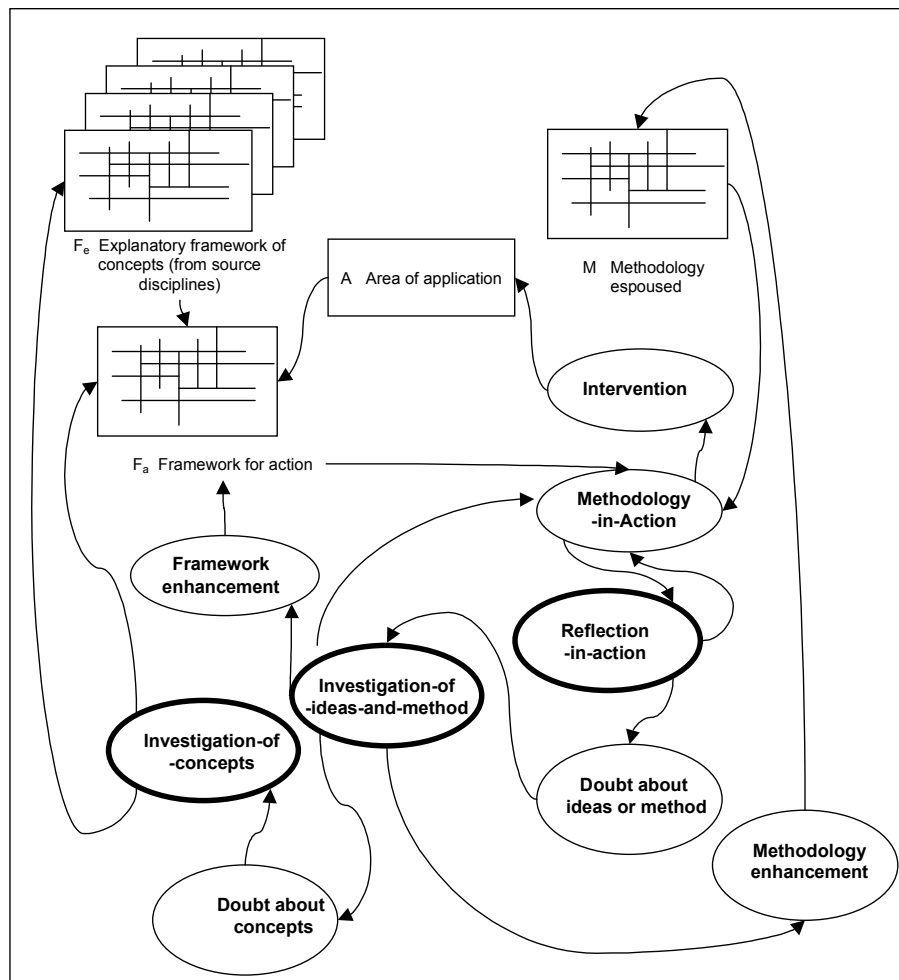


Figure 1: A synthesis of the idea of reflection in action and action research concepts (after James and Smith 1999)

The ARF, proposed by James and Smith (1999) (see Figure 1), defines the involvement of actors (usually persons or organisations), undertaking particular roles, in spheres of activity (SoAs) that may be impacted by the economic, cultural, technological or other contexts (CoAs), that impinge on the SoAs. In particular it facilitates inquiry and problem-solving activity directed towards particular areas of application (A) of professional practice in designated SoAs.

A project is defined in terms of its relationship to the relevant A, the project-related roles played by various actors, (e.g. owners, clients, gatekeepers, informants), and one or more project phases. Each project phase is defined in terms of a framework for action and an espoused methodology (M). In some

cases, reflection upon observation and interpretation of phenomena in A, or on the results of intervention in A, leads to enhancement to the framework for action or the methodology  (James and Smith 1999).
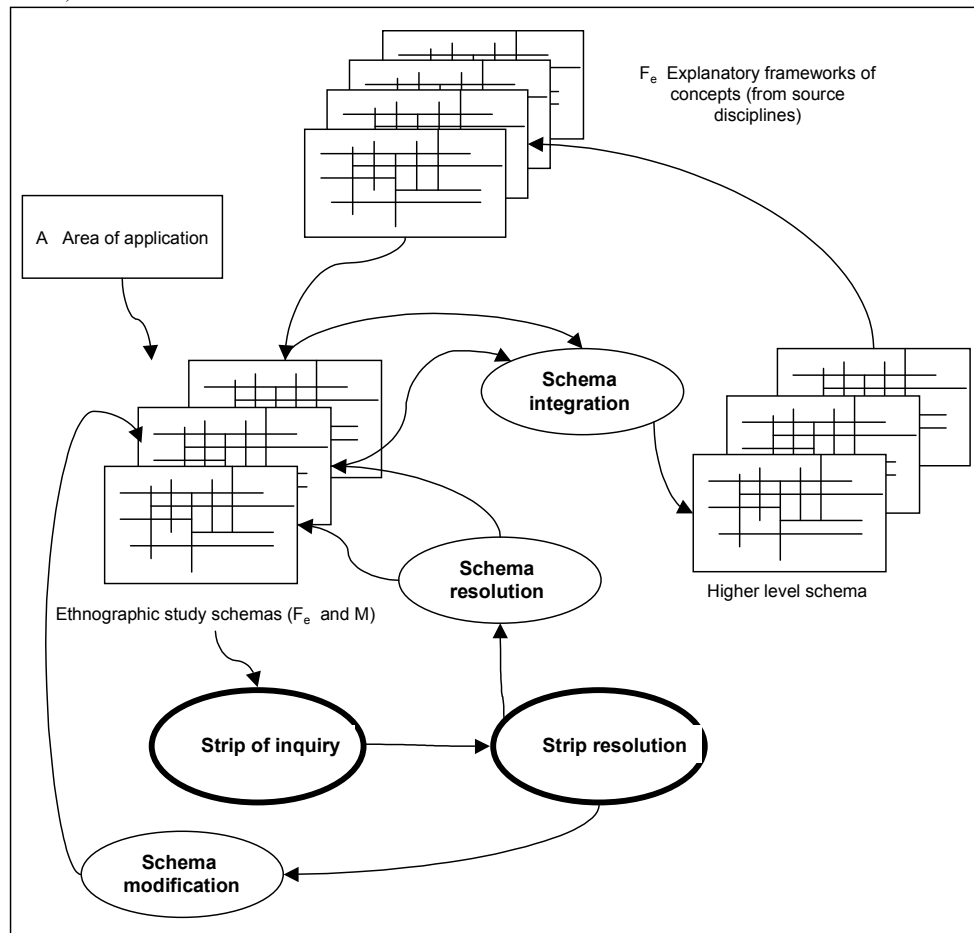


Figure 2: A simplified representation of the concept of ethnographic fieldwork utilising strips in the context of the action learning  cycle (after James and Smith 1999)

Action research, as viewed in the ARF of James and Smith (1999), is a distinct 'involvement' by a different actor (e.g. the researcher/consultant), playing various roles (e.g. action researcher, change agent) in the SoA (e.g. E-Commerce for Vietnam). Implementation of action research strategies can be conceived of as multiple cycles of reflective action research, ranging from facilitation of action learning through consultancy to action science, the more formal empirical testing against the evolving framework. Each cycle then is a designated project phase defined in terms that include the component processes of inquiry, the initial framework for action and the espoused methodology.  The methods of observation and interpretation are encapsulated in 'strips' of observation and interpretation, a concept adapted from ethnographic fieldwork (see Figure 2). Should reflection on the interpretation of a strip suggest that the current 'schema' (research framework and/or methodology) cannot explain the observation, 'breakdown' (in the ethnographic sense) has occurred. This may result in enhancement of the framework and/or the methodology. The concept of explicit recording of breakdown, and the resulting schema enhancement, is a means of ensuring rigor in the process of reflection in action. This concept is explained more completely by James and Smith (1999).

The fluid structure of reflective action research facilitates inquiry, but inhibits clarity in recording observation of the phenomena and interpretation of the results. The ARF provides a coherent structure for systematic recording of the process and outcome of the inquiry.  A set of documents are used to record the context, conduct and outcome of research and consultancy projects in the ARF (see James and Smith 1999).

## APPLICATION OF THE ARF TO THE INVESTIGATION OF CSF IN THE VIETNAMESE CONTEXT

In the introductory sections of this paper, we described initial inquiry into the adoption and diffusion of IT (the A) by Vietnamese Trading companies (actors) to facilitate the actual and potential participation of Vietnamese companies (a broader group of actors) in the SoA of global E-Commerce. In the Vietnamese context, overall goals for Vietnam's participation in the global marketplace are defined by the Doi Moi policy of the Government of Vietnam. Objectives for the achievement of this goal include facilitation of Vietnamese trade through E-Commerce. Strategies for fulfillment of action research objectives include the establishment of a framework to explain the level of IT development and its implication for establishment of an ETN.

Figure 3 reconceptualises the initial and subsequent research in Vietnam as interlocking sets of action research cycles, cast in terms of the ARF of James and Smith (1999). Detailed descriptions of the subsequent work are beyond the scope of the present paper. In overview, however, the main strand of activity is the progressive evolution of a framework of understanding for the CSF model. This strand is informed by and interacts with ongoing empirical studies, by means of surveys and interviews, of the organizations involved in IT and trading, and hermeneutic interpretation of the business and academic literature.

Phase 1 has involved interaction with the Vietnam Foreign Trade and Investment Centre, particularly during the period of 'the Asian Meltdown' to seek evidence of utilization of IT for trading purposes. In phase 2, the focus of the research was moved to the IT sector of the economy via the role of Australian representative to the Vietnam Information Technology Association. In this role the researcher participated in, and was able to evaluate, in the light of international developments, IT policy development for Vietnam. The initial effectiveness of these policies was assessed during phase 3, which involved surveys and interviews with companies involved in the IT sector. The perceived lack of clarity and understanding of IT policy regarding trading entities and networks led to phase 4, a consultant role with the Vietnam Ministry of Trade.  This role increased both the researcher's own understanding and his access to normally inaccessible informants. It also revealed the overarching importance of IT policy to the Government of Vietnam and the complex interaction of the involvement of various Ministries. Phase 5 saw the involvement of the researcher in the E-Commerce Task Force of the Vietnam National United Nations Trade Point. Phase 6 represents subsequent observational studies that gave the researcher the opportunity to observe all facets of IT implementation for trade purposes in the Vietnamese context.
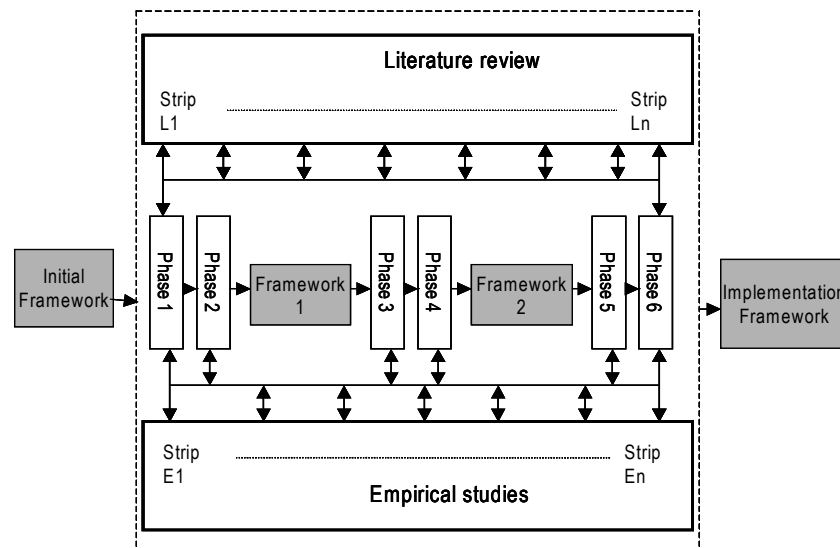


Figure 3: A representation of research into IT adoption and diffusion in Vietnam, cast in terms of the Action Research Framework of James and Smith (1999)

While the whole process of reflection in action as represented in Figure 3 has contributed to the evolving CSF model, certain 'breakdowns' of the explanatory schema, arising from critical 'strips' of observation, have led to the researcher changing his methodology, and sometimes his role, from empirical researcher to consultant to change agent to action scientist (and many similar transitions).

Throughout all this, the ARF of James and Smith (1999) has proven invaluable in conceptualising the research.

## CONCLUDING REMARKS

We have described a process of evolving research, in which the influence of the specific social, cultural and economic characteristics of Vietnam has demanded flexibility in the research method, the conceptual framework and the role of the inquirer. The demand for synthesis of research and practice is intense. While this experientally rich environment can generate significant advances in theory and practice, a sound overarching conceptual framework, a means of rigorously recording the process and outcome of observation and interpretation, and a disciplined approach to inquiry is essential. We have given a brief overview of the main features of such an appropriate action research framework.

## REFERENCES

Avgerou, C. (1998). How can IT Enable Economic Growth in Developing Countries? *Information Technology* for *Development*. 8(1), p15, (14p) EBSCOHost AN: 845175

Baskerville, R. L. and Wood-Harper, A. T. (1998). Diversity in information systems action research methods. *European Journal of Information Systems*, 7, pp. 90-107

Boynton, A. C. and Zmud, R. W. (1984). An Assessment of Critical Success Factors. *Sloane Management Review,* Summer, pp. 380-404

Ciborra, C. U. (1998). Crisis and Foundations: an inquiry into the nature and limits of models and methods in the information systems discipline. *Journal of Strategic Information Systems,* 7, pp. 5-16

Gummerson, E. (1991). *Qualitative Methods in Management Research - Revised Edition.* Newbury Park, California: Sage Publications, Inc.

Ha Tuan Anh (1999). An action learning approach to developing and evaluating a critical success factor model for the adoption on information technology in a cross-cultural research environment. *Unpublished PhD thesis.* Swinburne University of Technology, School of Information Technology

Ha Tuan Anh and James J. A. (1996). An investigation of the potential for establishing an electronic trading network for The Socialist Republic of Vietnam. *Proceedings of the Ninth International Conference on EDI-IOS,* Bled, Slovenia, June, pp. 476-500

Hofstede, G. (1991). *Cultures and Organisations.* McGraw Hill, UK

James, J. A. (1999). Electronic commerce for Developing Countries. Invited Keynote Address, *Planning Seminar on E-Commerce in Vietnam,* Vietnam Ministry of Trade, Hanoi, March

James, J. A., Ha Tuan Anh and Smith, R. (1999). Action learning to develop and utilise an explanatory framework for the interaction of theory and practice in IS. *Unpublished working paper, School of Information Technology,* Swinburne Institute of Technology

James J. A. and Smith R. (1999). A Systematic approach to tracking the process and outcomes of action learning in research and consultancy. *Proceedings of 10th Australasian Conference on Information Systems,* Wellington, NZ, December, pp. 423-434

Lewis, D. and Shea T. (1996). The Impact of Culture on Management Information Needs. *International Journal of Management.* pp. 241-248

Montealegre, R. (1996). Implications of electronic commerce for managers in less-developed countries. *Information Technology for Development* 7(3), EBSCO A/N 9703042375, p. 145, 8p

… (1997) Managing Information Technology in Modernizing an Organization in a Less-Developed Country. *Proceedings of Hawaiian International Conference of Systems,* IEEE reprint 1060-3425/97

SCVNPIT (1998). P*olicy and Master Plan on Information Technology Development up to 2000.* Socialist Republic of Vietnam; Steering Committee for National Programme on Information Technology, Hanoi, August

Thanasankit, T. (1999). Social Interpretation of Evolving Requirements – The Influence of Thai Culture. *Proceeding of the Fourth Australian Conference on Requirements Engineering.* Sydney, Australia, September, pp. 89-101

Wong, A. and Gregory, F. (1997). The Inapplicability of Western Models to Information Technology Development in Chinese Companies - the Case of the Hong Kong Newspaper Industry. *Hong Kong City University Working Paper 97/06.* http://www.cityu.edu.hk/is/working_paper97.htm