ENGAGED SCHOLARSHIP IN THE INNOVATION VALUE INSTITUTE

WORKING PAPER

Dr. Gabriel Costello
Galway-Mayo Institute of Technology.
Tel: +353 -91-742382
gabrielj.costello@gmit.ie

Prof. Brian Donnellan
National University of Ireland, Maynooth.
Tel: +353-1-708-6941
brian.donnellan@nuim.ie

INTRODUCTION

There has been a recurrent call by academics for more practice focused and relevant research. A number of studies have sought to address this: examples include papers on the topic of relevance (Benbasat and Zmud, 1999, Davison et al., 2004, Dodgson et al., 2008, Kemmis, 2001, Zmud, 1996), the theme of pragmatism (Goldkuhl, 2012, Ågerfalk, 2010), the subject of engagement (Mathiassen and Nielsen P. A., 2008, Van de Ven A.H., 2010, Van de Ven A.H., 2011) , the topic of practitioner reflection (Schön, 1990, Schön, 1983, Robson, 2002, Heiskanen and Newman, 1997) , the field of design science (Hevner et al., 2004, Venable, 2010, Hevner and Chatterjee, 2010, Simon, 1996, March and Vogus, 2010, Vaishnavi and Kuechler, 2007) and the approach of action research (Avison et al., 1999, Baskerville and Myers, 2004, Coghlan and Brannick, 2005, Costello et al., 2011, Mårtensson and Lee, 2004, Susman and Evered, 1978). An important contribution to this debate has been the development of *Engaged Scholarship* by Andrew Van de Ven (2007). Engaged Scholarship is described as "a participative form of research for obtaining the advice and perspectives of key stakeholders (researchers, users, clients, sponsors and practitioners) to understand a complex social problem (2007 p. ix).

The location of the study is Ireland which still punches way above its weight internationally by attracting 2% of total global foreign direct investment (FDI) in 2008 which amounted to circa €2 billion (IDA, 2009). The focus of the IDA (Industrial Development Authority which is responsible for foreign direct investment in Ireland) is on three strategic pillars: Global Services, High Technology Manufacturing and RD&I (Research Development and Innovation). At a policy level the Research Prioritisation Steering Group identifies 14 priority areas that will become the focus of future State

investment in research and innovation (Forfas, 2012). The thrust of these priorities is concerned with engagement with practice and of particular relevance to this paper is the area of "Innovation in Services and Business Processes".

The work is presented in the context of practitioner engagement, and by its nature Engaged Scholarship, being carried out by the Innovation Value Institute (IVI) (www.ivi.ie). IVI was co-founded in 2006 by the National University of Ireland Maynooth, (NUIM) and Intel with the objective of transforming of IT management. The development of the IT-CMF (The Information Technology Capability Maturity Framework) (Curley, 2004, Curley, 2007) is a response to the need for a more systematic, comprehensive approach to managing IT in a manner that meets the requirements of practicing IT professionals. IVI now has over 75 members drawn from top global organizations such as BP, Chevron, Cisco, Fujitsu, SAP, Chevron and Ernst & Young.

The proposed structure of the paper is as follows. First a synthesis is presented of the practitioner engagement literature based on the papers outlined in the opening paragraph of this abstract. Then a synopsis is offered of Van de Ven's development and explication of Engaged Scholarship. Following this the background to Irish policy that provides a driver for the need for engaged scholarship is outlined. Then the case of the IVI is presented as an example of engaged scholarship in an Irish context. Finally the conclusions are presented and suggestions for future work.

ENGAGED SCHOLARSHIP

The discipline of information systems has been considered to have certain failings in its effort to impact on practice (Kawalek, 2008). There have been numerous research studies identifying failures in IS in its attempts to achieve desired outcomes and disappointments

in assessments of return on investment (Lam and Chua 2005; Pan 2005). The analyses in these studies often yield recommendations that operate at a high level of abstraction and lack the detail and specificity to lead to action-oriented solutions. Examples of such recommendations include (Public Accounts Committee Report, 2000):

- "Commitment of senior management is critical"

- "End-user must be identified and involved in the development process"

- "Lack of clarity in the project specification can lead to lead to expensive misunderstandings subsequently"

- "Organizations must learn lessons from previous projects undertaken"

- "Training must address the needs of users, as well as those operating and maintaining the system"

Such findings, while offered in a constructive spirit of helpfulness and concern for continuous improvement, do little to advance either (i) the capability of practitioners to achieve their goals or (ii) the theoretical knowledge underpinning Information System academic research. One of the requirements for a more helpful approach is a greater sensitivity to the contextual complexity of the organizational problem-solving environment where IS practitioners work.

Van de Ven describes engaged scholarship as a participative form of research for obtaining the views of key stakeholders to understand a complex problem (Van de Ven A.H., 2007, Van de Ven A.H., 2010). By exploiting differences between these viewpoints, he argues that engaged scholarship produces knowledge that is more penetrating and insightful than when researchers work alone. Engaged scholarship has a

number of facets; a *form of inquiry* where researchers involve others and leverage their different perspectives to learn about a problem domain; a *relationship* involving negotiation, mutual respect, and collaboration to produce a learning community and an *identity* of how scholars view their relationships with their communities and their subject matter. In Van de Ven's view, you can increase the likelihood of advancing knowledge for science and practice by engaging with practitioners and other stakeholders in four steps;

-    Ground problem/question in reality up close and from afar.;

-    Develop alternative theories to address the question;

-    Collect evidence to compare models of theories and

-    Communicate and apply findings to address the problem/question.

Figure 1 shows Van de Ven's conceptualization of Engaged Scholarship (Van de Ven, 2007, p.10-11). According to this schema there are four stages in an Engaged Scholarship project. The stages can happen in any sequence. The stages are:

1. Problem formulation – situate, ground, diagnose, and infer the research problem by determining who, what, where, when, why, and how the problem exists up close and from afar.

2. Theory building – create, elaborate, and justify a theory by abductive, deductive, and inductive reasoning.

3. Research design – develop a variance or process model for empirically examining the alternative theories.

4. Problem solving – communicate, interpret, and apply the empirical findings on which alternative models better answer the research question about the problem.

Figure 1. Engaged Scholarship Diamond Model
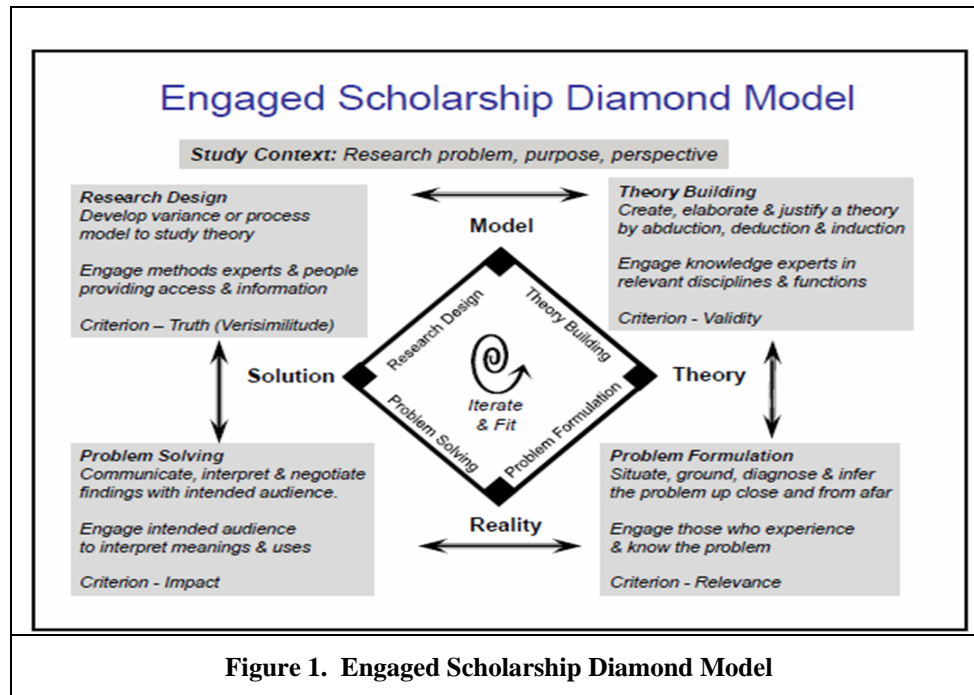
Mathiessan and Nielsen (2008) see engaged scholarship as a grand opportunity to address key challenges within the IS discipline in a novel and constructive way. They applied the principles of engaged scholarship to analyze Scandinavian IS research through the lens of Scandinavian Journal of Information Systems (SJIS). After reviewing all the research papers published in SJIS over the past 20 years; they advocated a role for engaged scholarship in shaping the future of Scandinavian IS research and IS research and practice in general.

Figure 2 shows how Van de Ven locates Action Research within the scope of Engaged Scholarship (Van de Ven, 2007 p.27)

Figure 2. Alternative Forms of Engaged Scholarship
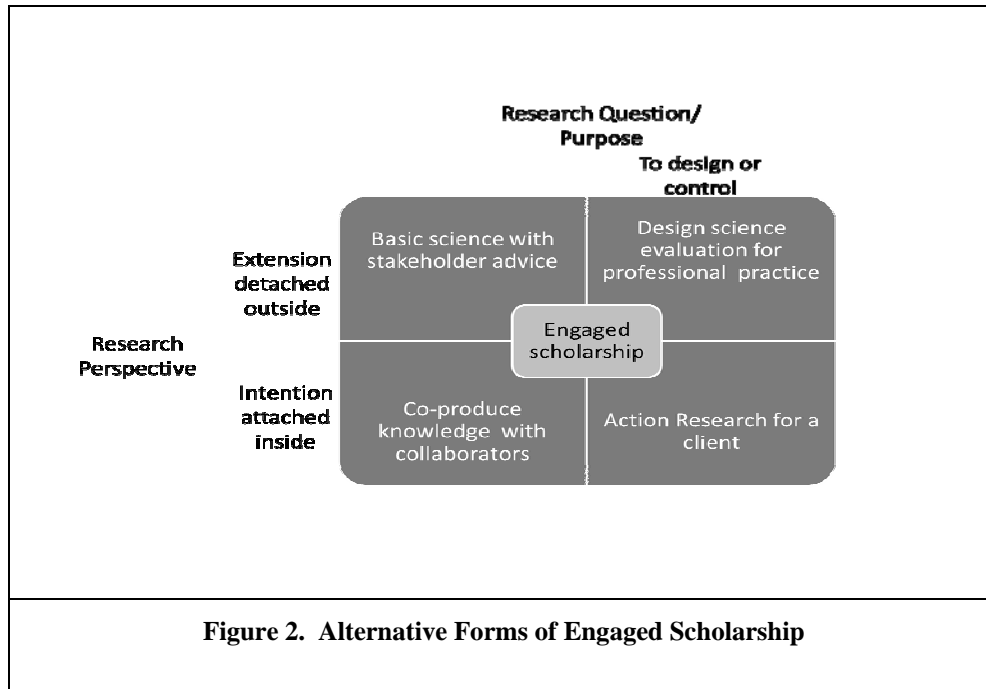
He identifies four forms of engaged scholarship:

1. Informed basic research is undertaken to describe, explain, or predict social phenomenon.

2. Collaborative basic research entails a greater sharing of power and activities among researchers and stakeholders than informed research.

3. Design and evaluation research is undertaken to examine normative questions dealing with the design and evaluation of policies, programs, or models for solving practical problems of a profession in question.

4. Action/intervention research takes a clinical intervention approach to diagnose and treat a problem for a specific client.

THE INNOVATION VALUE INSTITUTE

The development of the IT-CMF (Curley, 2004, Curley, 2006, Curley, 2007) is a response to the need for a more systematic, comprehensive approach to managing IT in a manner that meets the requirements of practicing IT professionals. In this paper an overview of the rationale for the IT-CMF will be provided and, in particular, some of the guiding principles for it design and development will be presented.

This research is being undertaken by the Innovation Value Institute (www.ivi.ie). Applying the principles of Open Innovation 2.0 (Samelin. B. and Curley, 2011) IT Management is being investigated using a design process with defined review stages and development activities based on the Design Science Research guidelines advocated by Hevner et al. (2004).

A key goal of the development of the IT-CMF was to enable a structural change in the way companies and organizations get value from IT. A key assumption in developing the IT-CMF was that a three hundred and sixty degree view of the issue and knowledge/practices used in contemporary IT management practice was necessary. Accordingly a global research community was established and nurtured to provide comprehensive views, knowledge and practices. Thus a new research ecosystem was established involving members from six different communities; Technology Providers, Public Sector IT executives, Enterprise IT executives, Analysts, IT Professionalism organizations and Academics. This form of research ecosystem activity is a form of Open Innovation 2.0 (Samelin. B. and Curley, 2011) where all the actors in an ecosystem are involved in the research and innovation activity. This is an extension of the open

innovation activity defined by Chesbrough (2003) which refers to capitalizing on the inflows and outflows of ideas to and from a company.

The IVI's Eco-System

Figure 3 describes IVI's application of Ecological Systems Theory to the development of the IT-CMF. Each layer is then described.
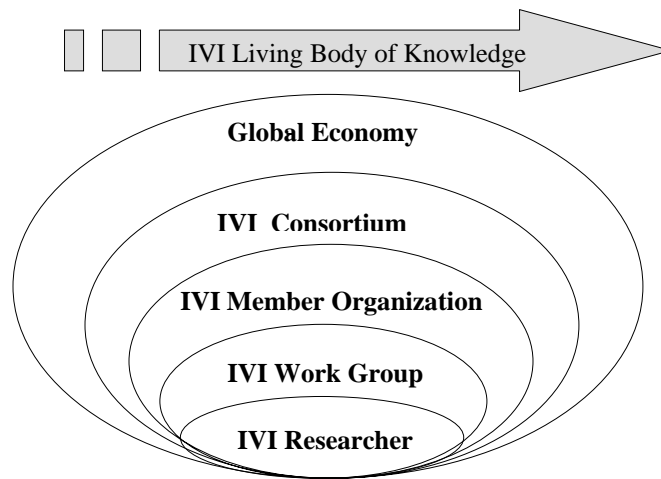

Figure 3: IVI's ecology for IT innovation research.

IVI Researcher: Researchers work on collaborative projects with industrial partners from various sectors, such as telecommunication, financial service, healthcare and government. This intensive interaction and collaboration with organizations can be characterized as an "action research" approach with design science principles. Researchers are co-located and are placed at both at the University and at the corporate partner. They are expected to spend significant time at the corporate side.

IVI Workgroup: IVI personnel have regular meetings between researchers, students and corporate partners defining research objectives, performance measures and discussing the research results. Research is conducted by Working Groups that consist of consortium members, leading academics and IT organizations. Output from the Working groups is reviewed with the Consortium Technical Committee and findings are tested and validated with other companies.

IVI Member Organization: Membership is for organizations that are active in information technology (IT) management, business value realization from IT and supporting IT innovation practices. Since its foundation, IVI has grown in strength and now has over 75 members drawn from top global organizations including BP, Chevron, Cisco, Fujitsu, SAP, Chevron, Ernst & Young to name a few.

IVI Consortium: The IVI Consortium draws from a peer community of:

- Academic Institutions

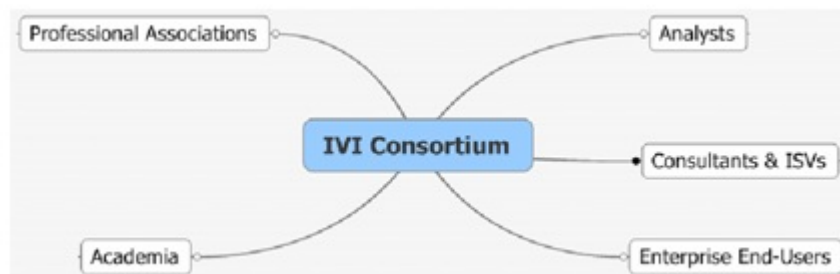- Partner Organizations

- End-Users (Public and Private Sector)

Figure 4: IVI consortium map

Global Economy: The goal of IVI is to create a global gold standard for IT management in order to benefit organizations world-wide. The aim is to have a positive effect on the global economy where IT is becoming increasingly influential in business and public sector transactions.

IVI Living Body of Knowledge: The IT-CMF comprises four macro-capabilities to emphasize their complexity and their importance in managing IT for business value. IT-CMF breaks down each macro-capability into critical capabilities of which there are 33 presently. These critical capabilities are a specific set of key activities and procedures that must be defined and mastered to enable the IT organization to plan and deliver IT solutions. They are continuously being reviewed by the work-groups and can be considered as a living body of knowledge available to the consortium.

CONCLUSIONS

This paper has presented an example of how the Innovation Value Institute has mobilized an entire ecosystem using an open innovation approach resulting in the development of a new set of artifacts and design patterns that are being adopted by a broad set of IT executives and organizations globally. The increasing adoption of the artifacts is perhaps the strongest validation of the utility and effectiveness of the approach.

This paper addresses the need for a novel theoretical framework to stimulate research in the area. The work is a response to the assessment by scholars that there are significant

research questions to be addressed in this important topic. For example Dubin (1978) argues that theory serves to satisfy a basic human need; to provide order to the experienced world while Weick (1989) proposes that theory building involves activities such as abstracting, generalizing, relating and synthesizing.

Arising from the analysis, we proposed a new theoretical lens to stimulate research in the area. The result is an adaptation of ecological systems theory (EST) that is applied to the IVI landscape. The EST for IT innovation is an important theoretical contribution because it provides a fresh perspective for academic researchers to investigate the phenomenon; and it offers an accessible conceptual structure to navigate the increasingly complex innovation ecosystem.

In summary, many organizations today are struggling to accurately capture or manage the true value from their IT investments. Furthermore, organizations are demanding that their IT Capability better support or drive innovation within the organization. The Innovation Value Institute is responding to this challenge by merging practice oriented research concepts with in-depth field studies of organisational transformation.

ÅGERFALK, P. J. 2010. Editorial: Getting pragmatic. *European Journal of Information Systems* 19**,** 251–256 doi:10.1057/ejis.2010.22.

AVISON, D. E., LAU, F., MYERS, M. D. & NIELSEN, P. A. 1999. Action research. *Communications of the ACM,* 42.

BASKERVILLE, R. & MYERS, M. D. 2004. Special Issue on Action Research in Information Systems: Making IS Research Relevant to Practice—Foreword. *MIS Quarterly,* 28**,** 329-335.

BENBASAT, I. & ZMUD, R. W. 1999. Empirical Research in Information Systems: The Practice of Relevance *MIS Quarterly,* 23**,** 3-16.

COGHLAN, D. & BRANNICK, T. 2005. *Doing Action Research in Your Own Organization,* London, Sage Publications.

COSTELLO, G., CONBOY, K. & DONNELLAN, B. Year. Dialogical Action Research as Engaged Scholarship: An Empirical Study *In:* East Meets West: Connectivity and Collaboration through Effective Information Systems. International Conference on Information Systems (ICIS 2011), 2011 Shanghai, China from December 4 to 7 2011.

CURLEY, M. 2004. *Managing Information Technology for Business Value*, Intel Press.

CURLEY, M. 2006. The IT transformation at Intel. *MIS Quarterly Executive,* 5**,** 109 – 122.

CURLEY, M. Year. Introducing an IT Capability Maturity Framework. *In:* keynote address at the International Conference for Enterprise Information Systems, ICEIS, Madeira, Portugal, 12-14 June 2007, 2007.

DAVISON, R. M., MARTINSONS, M. G. & KOCK, N. 2004. Principles of canonical action research. *Information Systems Journal,* 14**,** 43-63.

DODGSON, M., GANN, D. & SALTER, A. 2008. *Management of Technological Innovation: Strategy and Practice* Oxford University Press.

DUBIN, R. 1978. *Theory Development,* New York, Free Press.

FORFAS 2012. Report of the Research Prioritisation Steering Group available on line at http://www.forfas.ie/publications/featuredpublications/title,8958,en.php accessed March 2012.

GOLDKUHL, G. 2012. Pragmatism vs interpretivism in qualitative information systems research. *European Journal of Information Systems,* 21**,** 135-146.

HEISKANEN, A. & NEWMAN, M. Year. Bridging the gap between information systems research and practice: the reflective practitioner as a researcher. *In:* Proceedings of the eighteenth international conference on Information systems, 1997 Atlanta, Georgia, United States

HEVNER, A. & CHATTERJEE, S. 2010. *Design Research in Information Systems: Theory and Practice (Integrated Series in Information Systems)* New York, London Springer.

HEVNER, A. R., MARCH, S. T., PARK, J. & RAM, S. 2004. Design Science in Information Systems Research. *MIS Quarterly,* 28**,** 75-105.

IDA. 2009. *Industrial Development Authority - Agency for Foreign Investment in Ireland (available online through http:/www.idaireland.com/ accessed April 2009)* [Online]. [Accessed].

KAWALEK, J. P. 2008. *Rethinking Information Systems in Organizations: integrating organizational problem solving* New York, NY, Routledge.

KEMMIS, S. 2001. Exploring the Relevance of Critical Theory for Action Research: Emancipatory Action Research in the Footsteps of Jurgen Habermas. *In:* REASON, P. & BRADBURY, H. (eds.) *Handbook of Action Research: Participative Inquiry and Practice* London: Thousand Oaks.

MARCH, S. & VOGUS, T. 2010. Design Science in the Management Disciplines. *In:* HEVNER, A. & CHATTERJEE, S. (eds.) *Design Research in Information Systems: Theory and Practice (Integrated Series in Information Systems)* New York, London Springer.

MÅRTENSSON, P. & LEE, A. S. 2004. Dialogical Action Research At Omega Corporation. *MIS Quarterly,* 28**,** 507-536.

MATHIASSEN, L. & NIELSEN P. A. 2008. Engaged Scholarship in IS Research. *Scandinavian Journal of Information Systems,* 20.

PUBLIC ACCOUNTS COMMITTEE REPORT 2000. Public Accounts Committee Report, 1st Report, House of Commons, September 2000.

ROBSON, C. 2002. *Real world research : a resource for social scientists and practitioner-researchers* [Oxford ; Madden], Blackwell.

SAMELIN. B. & CURLEY, M. 2011. *Forewords in OISPG Service Innovation Yearbook 2010-2011*, EU publications.

SCHÖN, D. A. 1983. *The Reflective Practitioner: How Professionals Think in Action* New York, Basic Books.

SCHÖN, D. A. 1990. *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions*, Jossey-Bass.

SIMON, H. 1996. *The Sciences of the Artificial* The MIT Press; third edition

SUSMAN, G. I. & EVERED, R. D. 1978. An Assessment of the Scientific Merits of Action Research. *Administrative Science Quarterly,* 23**,** 582.

VAISHNAVI, V. & KUECHLER, W. 2007. *Design Science Research Methods and Patterns: Innovating Information and Communication Technology,* New York, Auerbach Publications.

VAN DE VEN A.H. 2007. *Engaged Scholarship: A Guide for Organizational and Social Research*, Oxford Univ. Press.

VAN DE VEN A.H. 2010. *Reflections on Engaged Scholarship (paper delivered to Carlson School of Management, University of Minnesota).*

VAN DE VEN A.H. 2011. Interview: ANDREW VAN de VEN (EURAM 2011 Annual Conference Keynote Speaker) by Swapnesh K Masrani (EURAM Newsletter Editorial Assistant). *EURAM European Academy of Management.*

VAN DE VEN, A. H. (ed.) 2007. *Engaged Scholarship: A Guide for Organizational and Social Research,* Oxford ; New York: Oxford University Press.

VENABLE, J. R. Year. Design Science Research Post Hevner et al.: Criteria, Standards, Guidelines, and Expectations. *In:* WINTER, R., ZHAO, J. L. & AIER, S., eds. Global Perspectives on Design Science Research, 5th International Conference, DESRIST 2010, St. Gallen, Switzerland, June 4-5, 2010. , 2010. Proceedings. Lecture Notes in Computer Science 6105 Springer 109-123.

WEICK, K. E. 1989. Theory construction as disciplined imagination. *Academy of Management Review,* 14**,** 516–531.

ZMUD, R. 1996. Editor's comments: On Rigor and Relevancy *MIS Quarterly,* 20.