

# Academics and Practitioners

## An Essential Partnership in the 21<sup>st</sup> Century

LARS MATHIASSEN

Computer Information Systems

Georgia State University

# ***Reflections from a Boundary Spanner***

Academic career since 1975

Action research with professionals since 1975

Co-created and co-managed Metodica 1986-2002

New IT educations across science, engineering, business and humanities

Served as director of major PhD and DBA programs

Advised major restructuring of Danish academic institutions (2000-2001)

Managed Danish national funding of strategic research (2005-2010)

Academic positions in Europe and US

Senior-editorships in leading IS journals

# ***The Nature of Knowledge***

## **Knowledge-as-objects**

- Explicit knowledge
- Transfer problem
- Sequential mode
- Stability focus

## **Knowledge-as-relations**

- Situated knowledge
- Production problem
- Interactive mode
- Change focus

(Nonaka 1994; Swan et al. 1999)

“It is the task of the university to open up sites of communication in society rather than, as it is currently in danger of doing, becoming a self-referential bureaucratic organization” (Delanty 2001)

**Complexity of IT-based innovation**

+

**Speed of technological change**

→

**Knowledge-as-relations as primary foundation for academic-practitioner partnerships in IS**

Current incentive structures and evaluation schemes in academia are focused on knowledge-as-object

# ***The Power of Institutions***

## **Music Institutes**

- The study of music
- Students write dissertations
- Curriculum at the core
- Professors are researchers

## **Music Conservatories**

- The practice of music
- Students play music
- Practicum at the core
- Professors are musicians

Despite considerable variety in institutional arrangements, the IS-discipline has mainly been shaped through consistent efforts to build a strong position within North-American Business Schools.

## **The dominant metaphor is music institute**

The IS-discipline is reflective of industrial practices and taught as part of profession-oriented academic programs

## **The appropriate metaphor is music conservatory**

Existing institutional contexts for IS create serious barriers to leverage the music conservatory metaphor

# ***Twelve years with Anna***

- Process manager at Ericsson
- Research collaboration focused on Process Improvement
- PhD in 2006
- 1-2 publications a year, including *EJIS* and *IEEE Software*
- Research Center between Ericsson and ITU, Gothenburg, SE
- Multiple research and educational initiatives involving students, researchers and practitioners

## *A Confessional Account of Collaborative Practice Research* (Mathiassen & Sandberg 2012)

- A longitudinal study of publications, industrial problems, practical results & personal development
- Weinberg's model of reactions to change
  - Going through chaos phases
  - Returning to 'old status quo'
- Argyris and Schön's model of action strategies and governing variables
  - Give answers →ask questions
  - State opinions →state facts
  - Make few mistakes →make new mistakes
- Anna went through four stages of engaging, experimenting, integrating and practicing

# ***The Reflective Practitioner***

## **Technical rationality**

- Instrumental problem solving
- Well-defined problems
- Specialized scientific knowledge

## **Reflection-in-action**

- Conversations with situations
- Complexity, uncertainty and value-conflict
- Metaphors and on-the-spot experiments

(Schön 1983, 1987)

*Reflective Systems Development (RSD)* offers a comprehensive view of one of the key practices in the IS-discipline

- Methods represent codified professional knowledge that are selectively applied and adapted in practice
- An instrumental problem-solving view offers insights into methods-in-use as integral parts of practice
- A reflection-in-action view offers insights into non-canonical parts of practice
- Project-based learning affords opportunities to practice methods, develop personal ways of working, and participate in communities-of-practice

(Mathiassen 1998; Mathiassen & Puroo 2002)

# ***Six Years with Nannette***

- Software engineer in industry
- PhD 2007
- Professor at Georgia Gwinnett College
- 3-year research collaboration with *Te/Soft* with 50+ developers and software and data services for telecommunications industry
- 8 publications from dissertation including *ICIS*, *EJIS* and *IEEE TSE*

***Problem-setting:*** multiple sources of requirements, high dependency on two large customers, failed attempts to innovate software portfolio

## ***Interventions into practice:***

- processes to increase repeat-ability and response-ability in requirements management
- Software coordination group to manage requirements through project and portfolio management
- Project management competence development

***Theoretical framing:*** process re-engineering, combining prescriptions and perceptions, contextual ambidexterity, appreciative inquiry.

# The Engaged Scholar

## Premises

- Publications are not contributing as intended to practice or research
- Academic and practical knowledge represent very different, but related domains
- Academia and practice can contribute to each others growth through various forms of interactions

(Van de Ven 2007; Mathiassen & Nielsen 2008)

*“A participative form of research for obtaining the different perspectives of key stakeholders (researchers, users, clients, sponsors, and practitioners) in studying complex problems.”*

- Variance and process studies
- Quantitative and qualitative approaches

	<i>Describe-explain</i>	<i>Design-control</i>
<i>Detached-outside</i>	Basic science with stakeholder advice	Design science and evaluation research
<i>Attached-inside</i>	Co-produce knowledge with collaboration	Action research for client



# ***The German Skeptics***

Luhmann's theory of autopoietic systems:

- They operate largely in isolation
- They each have their own communication practices and systems of meaning
- Meaning will inevitably change when transferred from one system to another
- Each system has operative closure making it impossible for outsiders to directly interfere

(Kieser & Leiner 2009)

“Researchers and practitioners cannot collaboratively produce research, they can only irritate each other. However, sometimes irritations and provocations turn out inspiring.”

“We are concerned that collaboration with members of ‘alien’ institutions ... could detrimentally interfere with the process of the primary institutions.”

***Research is based on a true-false code***

***Practice is based on a relevant-irrelevant code***

# ***Trading on the Boundary***

A ***trading zone*** is any kind of interdisciplinary partnership in which two or more perspectives are combined and a new, shared language develops.

By engaging in ***trading zone*** practices, members enact a coordination structure that affords cross-boundary coordination while facilitating adaptability, speed and learning.

(Kellog et al. 2006; Collins et al. 2007)

	<b><i>Homo- geneous</i></b>	<b><i>Hetero- geneous</i></b>
<b><i>Collaboration</i></b>	Inter- language	Fractionated
<b><i>Coercion</i></b>	Subversive	Enforced

A General Model of Trading Zones

# *The Generativity of Duality*

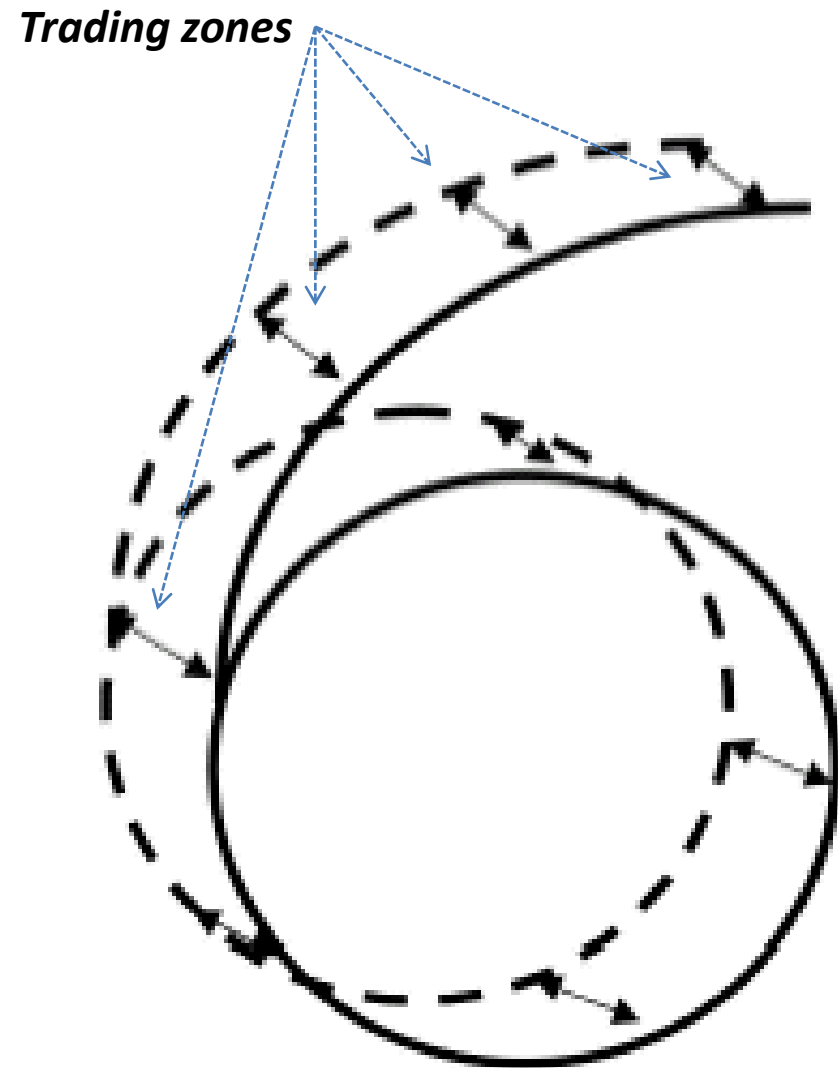
## *The problem-solving cycle*

- From P to solutions

## *The research cycle*

- From RQ to contributions

(McKay & Marshall 2001)



# ***Three Years with Alex***

- Software engineer and MBA
- Top management position in Red Hat, the worlds most commercially successful open source software provider
- Executive Doctorate student at GSU 2009-2012
- Dissertation “***Open Source in the Cloud***”
- Currently developing IEEE TEM and IEEE Software publications

***Problem-setting:*** Moving open source software services into cloud computing

***Practical Problem:***

- How can the firm leverage and further develop its innovative capability to effectively manage a disruption in technology?

***Research Question:***

- How was structural and contextual ambidexterity implicated in the firm’s response to cloud computing?

***Theoretical framing:*** structural and contextual ambidexterity

# ***The Practitioner- Researcher***

- Professionally-qualified doctoral students
- How to leverage their qualifications in doctoral programs?
- How to create doctoral programs dedicated to training practitioner-researchers?
- ***A Network of Boundary Spanners***
  - *In industry*
  - *In academia*

(Klein & Rowe 2008)

Educational duality:

- Masters versus MBA
- PhD versus DBA

Executive Doctorate at GSU:

- 3 years, 25-30 hours per week
- Cohorts of 20 students
- Requires masters plus 10 year's executive level experience
- \$100K

The Executive DBA Council

- [robinson.gsu.edu/execdoctorate](http://robinson.gsu.edu/execdoctorate)

The International Conference on Engaged Management Scholarship

- [robinson.gsu.edu/execdoctorate/EMS2013](http://robinson.gsu.edu/execdoctorate/EMS2013)

# ***Making a Difference***

***Partnerships between  
IS academics and practitioners  
can improve our capability to***

- Build useful educational programs that attract creative young people
- Develop relevant research contributions in high profile journals
  - Transform and modernize higher institutions of learning
    - Innovate with IT in all strands of society

1. Collins, H., Evans, R. & Gorman M. (2007) Trading Zones and Interactional Expertise. *Studies in History and Philosophy of Science* 38.
2. Delanty, G. (2001) *Challenging Knowledge: The University in the Knowledge Society*. Open University Press.
3. Keiser, A. & Leiner, L. (2009) Why the Rigour-Relevance Gap in Management Research Is Unbridgeable. *Journal of Management Studies* (46:3).
4. Kellog, K. C., Orlikowski, W. J. & Yates, J. (2006) Life in the Trading Zone: Structuring Coordination Across Boundaries in Postbureaucratic Organizations. *Organization Science* (17:1).
5. Klein, H. K. & Rowe, F. (2008) Marshaling the Professional Experience of Doctoral Students: A Contribution to the Practical Relevance Debate. *MIS Quarterly* (32:4).
6. Mathiassen, L. (1998) Reflective Systems Development. *Scandinavian Journal of Information Systems* (10:1-2).
7. Mathiassen, L. & Nielsen, P. A. (2008) Engaged Scholarship in IS Research. *Scandinavian Journal of Information Systems* (20:2).
8. Mathiassen, L. & Puroo, S. (2002) Educating Reflective Systems Developers. *Information Systems Journal* (12).
9. Mathiassen, L. & Sandberg, A. (2012) How a Professionally Qualified Student Bridged the Practice-Research Gap: A Confessional Account of Collaborative Practice Research. *European Journal of Information Systems*.
10. McKay, J. & Marshall, P. (2001) The Dual Imperatives of Action Research. *Information, Technology & People* (14:1).
11. Nonaka, I. (1994) A Dynamic Theory of Organizational Knowledge Creation. *Organization Science* (5:2).
12. Schön, D. A. (1983) *The Reflective Practitioner. How Professionals Think in Action*. Basic Books.
13. Schön, D. A. (1987) *Educating the Reflective Practitioner*. Jossey-Bass Publishers.
14. Swan, J. et al. (1999) Knowledge Management and Innovation: Network and Networking. *Journal of Knowledge Management* (3:4).
15. Van de Ven, A. H. (2007) *Engaged Scholarship: A guide for Organizational and Social Research*. Oxford University Press.