

Engaged scholarship & design (science) research

Peter Axel Nielsen



RESEARCH CENTRE FOR

socio-interactive design



AALBORG UNIVERSITY
DENMARK

Engaged scholarship

Engaged Scholarship - Van der Ven 2007

- Engaged scholarship is “a participative form of research for obtaining the different perspectives of key stakeholders (researchers, users, clients, sponsors, and practitioners) in studying complex problems”
- Academic and professional knowledge represents very different, but related domains
- Overcome: rigour - relevant, qualitative - quantitative, process - variance, basic - applied, ...

Four types of ES

	Research Question/Purpose		
		To describe and explain	To design and control
Research perspective	Extension Detached Outside	Basic Science with Stakeholder Advice	Policy/Design Science Evaluation Research for Professional Practice
	Intension Attached Inside	Co-Produce Knowledge with Collaborators	Action/Intervention Research for a Client

Examples in Scandinavian research

- Mathiassen & Nielsen

	All ES	Exemplar
1989-1993	(Ehn 1989; Hellman 1989), (Grønbæk 1990), (Trigg et al. 1991), (Bjerknes 1992; Borum 1992; Pries-Heje 1992; Stolterman 1992) (Thomsen 1993)	Bjerknes: an empirical examination of the dialectics between different stakeholders' perceptions of the development and use of information systems
1994-1998	(Bødker & Kensing 1994; Kautz & McMaster 1994), (Bjerknes & Bratteteig 1995; Carstensen et al. 1995), (Bardram 1996; Näslund 1996), (Sandahl & Jenssen 1997), (Kyg 1998; Mathiassen 1998)	Bødker & Kensing: an empirical study of collaborative design of computer-based support for an organisation with contributions to the design of information systems
1999-2003	(Ljungberg 1999; Simonsen 1999), (Nielsen & Nørbjerg 2001; Pilemalm et al. 2001; Pourkomeylian 2001), (Dahlberg et al. 2002; Henriksen 2002; Lindgren & Stenmark 2002; Mathiassen 2002b; Winthereik et al. 2002)	Lindgren & Stenmark: a longitudinal study of collaboration with two organisations based on interviews, prototyping, and evaluation in which they arrive at principles for designing competence systems
2004-2008	(Bansler & Havn 2004; Bødker et al. 2004) (Henriksen & Mahnke 2005; Imsland & Sahay 2005; Lines 2005; Ovaska et al. 2005; Rose & Sæbø 2005)(Bjørn et al. 2006; Holmström & Henfridsson 2006; Munkvold et al. 2006), (Hardless et al. 2007)(Østerlund 2008)	Østerlund: a longitudinal study employing participant observation in a hospital ward demonstrating why and how genre materiality is an important perspective for information systems designers

Mapping to the 4 types

Research Question/Purpose		
Research perspective		
	To describe and explain	To design and control
	Extension Detached Outside	137
	Intension Attached Inside	816

Mapping, contd.

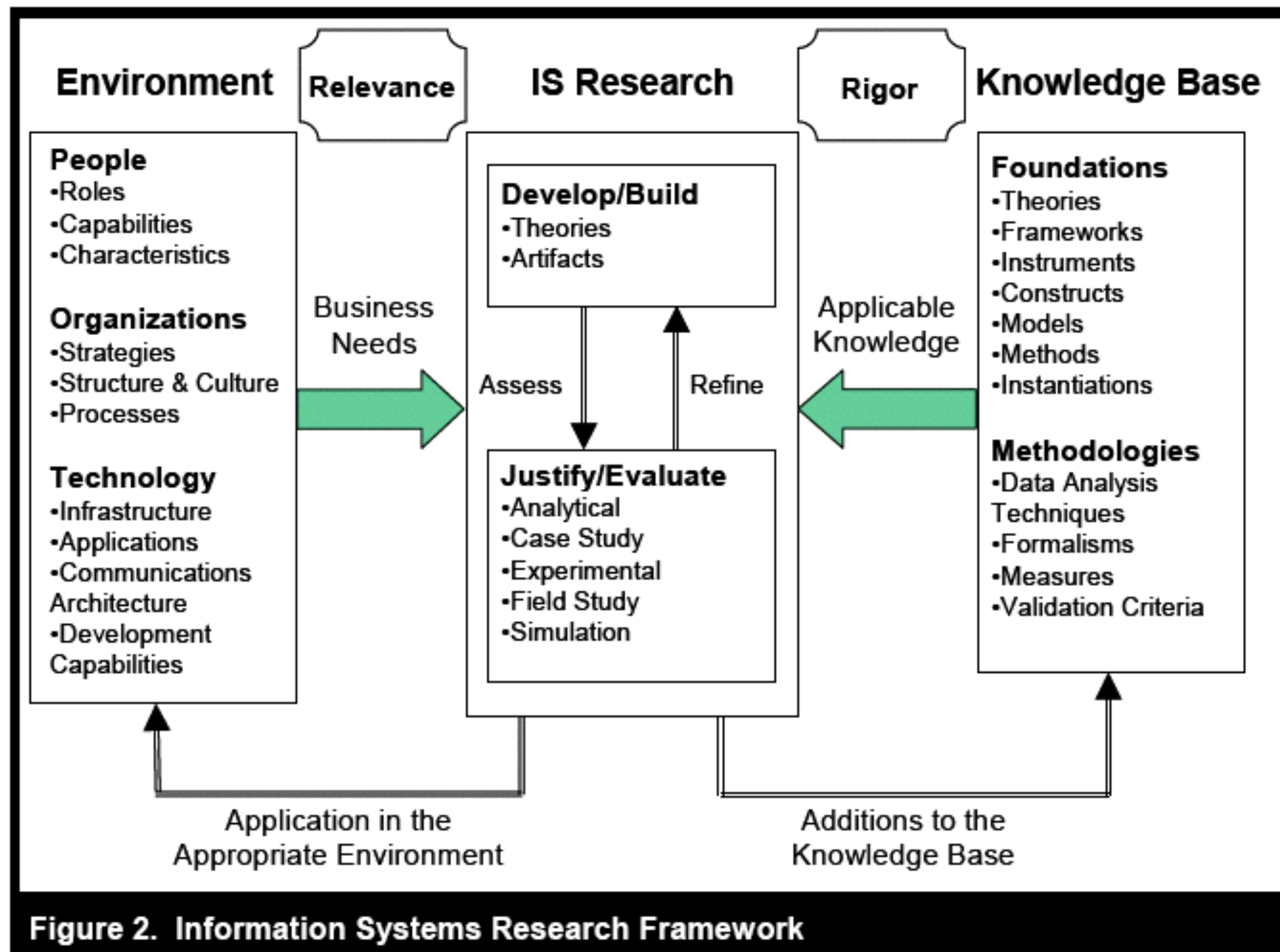
	<i>Describe and explain</i>	<i>Design and control</i>
<i>Detached and external</i>	Informed Basic Research (Ehn 1989; Hellman 1989) (Borum 1992; Pries-Heje 1992; Stolterman 1992) (Bjerknes & Bratteteig 1995) (Winthereik et al. 2002) (Henriksen & Mahnke 2005; Imsland & Sahay 2005; Lines 2005; Ovaska et al. 2005) Holmström & Henfridsson 2006) (Østerlund 2008)	Design/Evaluation Research (Grønæk 1990) (Trigg et al. 1991) (Kristoffersen & Ljungberg 1997) (Kyg 1998) (Pilemalm et al. 2001) (Dahlberg et al. 2002) (Ellingsen 2003) (Rose & Sæbø 2005)
<i>Attached and internal</i>	Collaborative Basic Research (Bjerknes 1992) (Kautz & McMaster 1994) (Carstensen et al. 1995) (Näslund 1996) (Henriksen 2002) (Frederiksen & Rose 2003; Sahay 2003) (Bansler & Havn 2004)	Action/Intervention Research (Thomsen 1993) (Bødker & Kensing 1994) (Bardram 1996) (Kristoffersen & Ljungberg 1997; Sandahl & Jenssen 1997) (Mathiassen 1998) (Ljungberg 1999; Simonsen 1999) (Nielsen & Nørbjerg 2001; Pourkomeylian 2001) (Lindgren & Stenmark 2002; Mathiassen 2002b) (Bødker et al. 2004) (Bjørn et al. 2006; Munkvold et al. 2006) (Hardless et al. 2007)

Action Design Research
or
AR+DSR?

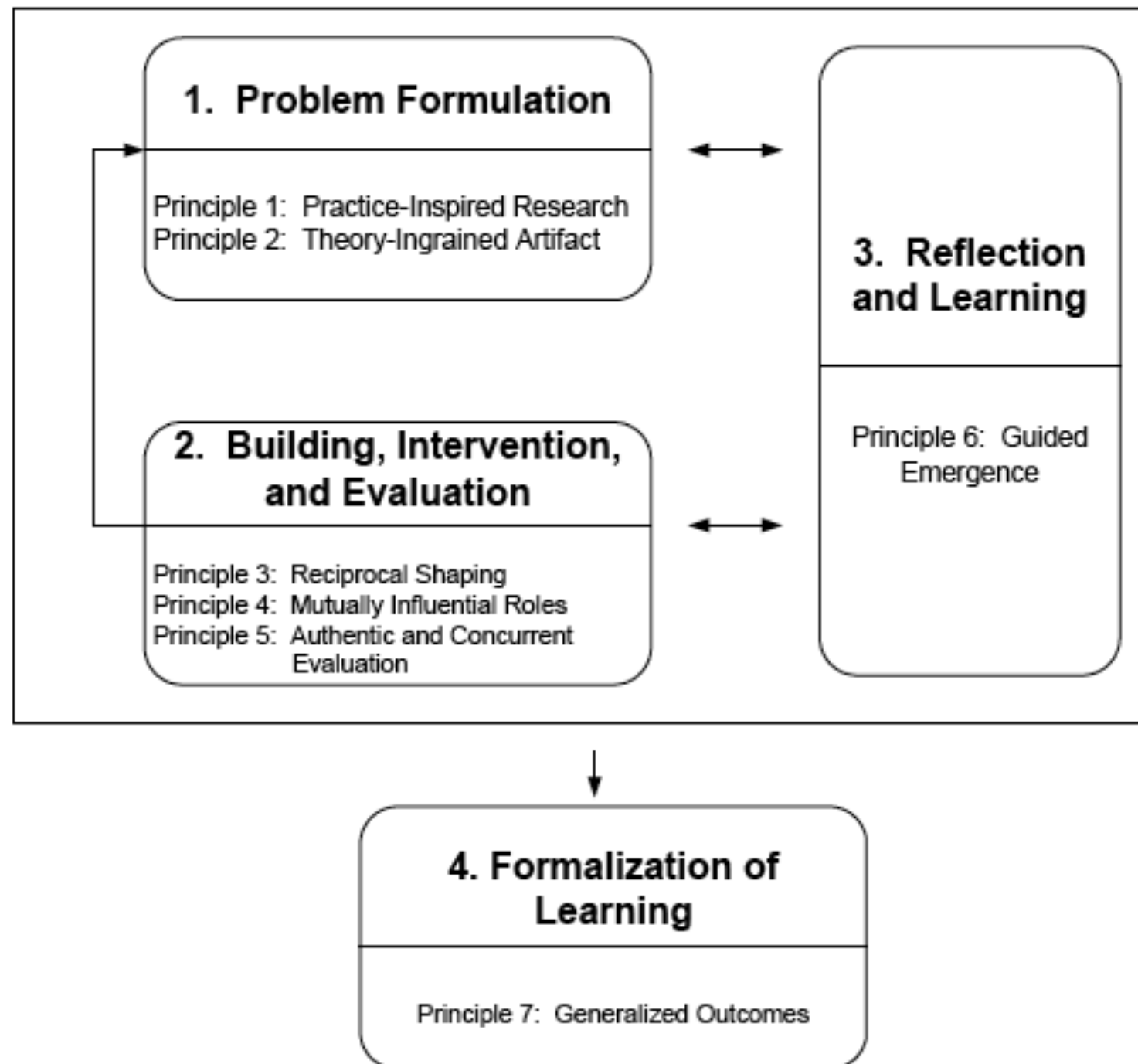
Design Science Research

- "Design is both the a process (set of activities) and and a product (artefact)"
- "During this creative process, the design science researcher must be cognizant of evolving both the design process and the design artefact as part of the research"

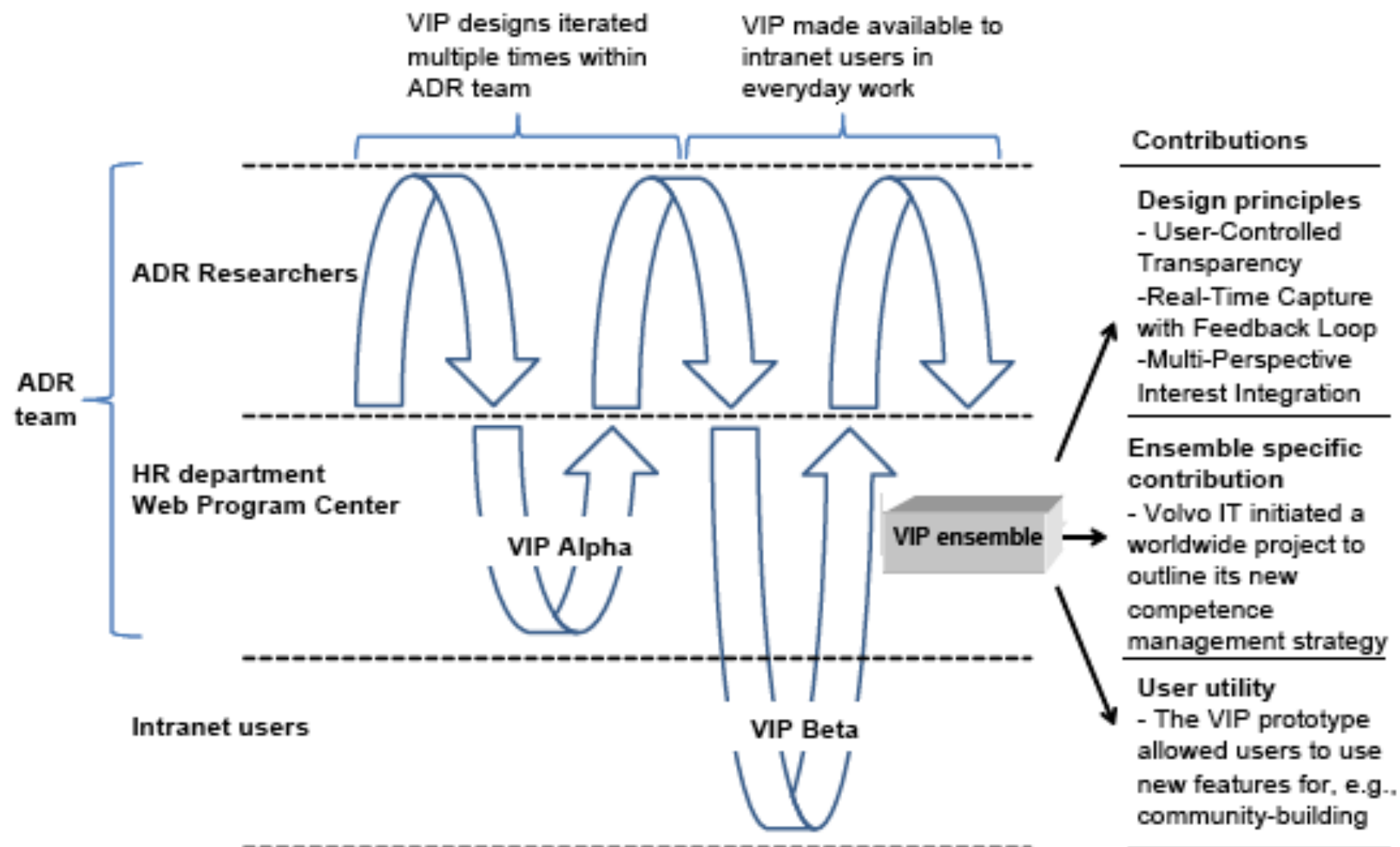
DSR - Hevner et al.



Action design research (ADR) - Sein et al.



ADR Example: Volvo IT



AR in DSR

DSR Evaluation Method Selection Framework	Ex Ante	Ex Post
Naturalistic	•Action Research •Focus Group	•Action Research •Case Study •Focus Group •Participant Observation •Ethnography •Phenomenology •Survey (qualitative or quantitative)
Artificial	•Mathematical or Logical Proof •Criteria-Based Evaluation •Lab Experiment •Computer Simulation	•Mathematical or Logical Proof •Lab Experiment •Role Playing Simulation •Computer Simulation •Field Experiment

The ongoing debate

- livari - paradigmatic analysis
- Responses by: Sein et al., Bratteteig, Niehaves, Hevner, Carlsson
- Response to the responses: livari
- Järvinen: $AR = DSR$
- livari & Venable 2012: $AR \neq DSR$
- Sein et al.: $AR + DSR$