



Aalto University  
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# Research approaches: Qualitative research

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# Contents

- Organizing matters
- About qualitative research
- Case studies
- Coding qualitative research findings
- Action research
- Design research

# What is qualitative research?

- Involves verbal description of real-life situations (“rich descriptions”)
- Often begins with a single case or a few individuals (as in interview or focus group studies)
- Can study phenomena in the contexts in which they arise through observation and/or recording or the analysis of printed and Internet material
- Propositions are often generated from the analysis (rather than hypotheses stated before the analysis)
- There is no one agreed way to analyze the data. Multiple research models exist (e.g. naturalism and constructionism) and there are different ways to analyze data (e.g. grounded theory, narrative analysis and discourse analysis) which sometimes conflict with each other
- See more: <http://www.qual.auckland.ac.nz>

# "Soft" approaches: Characteristics

- Events through subjects' eyes
- Description is detailed and contextual information is vital
- Events are understood in their contexts
- Focus is on the process; social life is seen as a sequence of interlocking events
- Research process is flexible and relatively unstructured
- Theory and concepts may be:
  - Formulated a priori and "tested"
  - Formulated and used as an "explanatory" frame
  - Formulated and adopted as the process unfolds
  - The outcome of the research itself (grounded theory)

# Qualitative Research

- Methods:
  - Case study research / interviews
  - Action research
  - Design research
  - Ethnography
  - Grounded theory
- Data sources:
  - Interviews, focus groups, questionnaires (open-ended, small samples)
  - Observations (passive, participant)
  - Documents, texts (online / offline records)
  - Audio, video, other visual materials
  - Researcher's impressions and reactions (research notes and diaries)

# Interpretive Research

- Aim: to understand phenomena through the meanings that people assign to them
- Interpretive methods of research in IS are:
  - “Aimed at producing an understanding of the context of the information system, and the process whereby the information system influences and is influenced by the context”
- No predefined dependent and independent variables, but focuses on the full complexity of human sense-making as the situation emerges

# Case study

Based on *Qualitative IS Research Methods* seminar material by Robert Davison, City University of Hong Kong & selected articles

# Case Study

A case study is an empirical inquiry that:

- investigates a contemporary phenomenon within its real-life context,
- boundaries between phenomenon and context are not clearly evident

Case study research can be positivist, interpretive, or critical.

Significance: a single case?

Completeness: boundaries?

Representativeness: atypical or typical case?



# Key Components

Research questions - how and why

Research propositions (if any) but not hypotheses

- That reflect an important theoretical issue and indicate where to look for relevant evidence

Unit(s) of analysis

- What are we studying? Organizations, people within organizations, individuals (consumers), ...?
- What does the data describe?
- A single case may have multiple units of analysis
- Informants (respondents) that are relevant for the unit of analysis

Logic that links the data to the propositions

The criteria for interpreting the findings

# Single Case Design

- The focal case is used to test a well-formulated theory
  - The case meets all the criteria for testing the theory
- The case represents an extreme or unique case
- The revelatory case
  - A situation that occurs when the investigator has an opportunity to observe and analyze a phenomenon previously inaccessible to scientific investigation

# Multiple Case Design



This means that the same study has two or more cases



The evidence from multiple cases is often considered more compelling, which makes the overall study more robust



Undertaking a multiple case study can require extensive resources and time beyond the means of a single researcher



Each case must be chosen carefully and specifically



The cases should have similar results (a literal replication) or contrary results (a theoretical replication) predicted explicitly at the outset of the investigation

# Conducting Case Studies 1

- Preparation for data collection
- The researcher should
  - be able to ask good questions
  - be a good listener
  - be adaptive and flexible
  - have a firm grasp of the issues being studied
  - be unbiased by preconceived notions
- For the specific context of the case study and organization

# Conducting Case Studies 2



The researcher must be able to make intelligent decisions about the data being collected



This will require knowledge about

why the study is being done;  
what evidence is being sought;  
what variations can be anticipated;  
what would constitute supportive or contrary evidence for any given proposition



Survey or interview designers also need to know the purpose of the survey and the nature of the analysis that will follow

# Case Study Protocol

- **The protocol should include**
  - An overview of the case study project (project, substantive issues, relevant reading)
  - Field procedures (how to gain access to interviewees, planning for sufficient resources, providing for unanticipated events, etc.)
  - Case study questions (about individuals, multiple cases, entire study, normative questions about policy recommendations and conclusions)

# Sources of Evidence

There are six forms of evidence

- Documentation
- Archival records
- Interviews
- Direct observations
- Participant observations
- Physical artifacts

Remember research ethics and informed consent for all!

# Documents, Archives & Artifacts



Current organisational documents

Policies, practices, templates



Historical archive records

Past practices, reports on past projects



These two forms of data are useful for corroborating evidence from other sources



Artifacts include physical objects like certificates, awards, etc.



# Interviews

- Case study interviews are usually open-ended
- Focused interviews can still be open-ended but involve following specific questions derived from the case study protocol
  - More structured questions, along the lines of a formal survey
- A structured interview would involve the sampling procedures and the instruments used in regular surveys, and it would subsequently be analyzed in a similar manner

# Direct Observations

By making a field visit to the case study "site", the investigator is creating the opportunity for direct observations.



To increase the reliability of observational evidence, a common procedure is to have more than one observer making an observation, whether formally or casually

# Participant Observations

- The researcher may play a variety of roles within a case situation and may participate in the events being studied
- The researcher (e.g. if an insider) may be able to gain access to events or groups that are otherwise inaccessible to scientific investigation
- Researchers have to be aware of potential bias. If they work as an insider, they cannot maintain outside independence
  - They could become a supporter or defender

# Principles of Data Collection 1

- Using multiple sources of evidence
  - The opportunity to use multiple sources of evidence in case studies far exceeds that in other research methods such as experiments or surveys
  - Multiple sources of evidence allows an investigator to address a broader range of historical and observational issues
  - It also enables better triangulation of findings
  - It contributes to a holistic understanding of a case and indeed contributes to theorization

# Principles of Data Collection 2

- Creating a case study database
  - The lack of a formal database for most case study efforts is a major shortcoming of case study research
  - Four components should be contained in a database created for case study research:
    1. Notes (including interview data)
    2. Documents
    3. Tabular materials (e.g. from surveys / structured interviews)
    4. Narrative (stories; diaries)

# Principles of Data Collection 3

- Maintaining a chain of evidence
  - This is to allow an external observer - the reader of the case study for example - to follow the derivation of any evidence from initial research questions to ultimate case study conclusions
- The three principles are intended to make the data collection process as explicit as possible
- Then the final results can adequately reflect construct validity and reliability, thereby becoming worthy of further analysis

# Analyzing Case Study Evidence

- Relying on theoretical propositions
    - The proposition helps:
      - to focus attention on some data and to ignore others
      - to organize the entire case study and to define alternative explanations to be examined
  - Developing a case description
    - Develop a descriptive framework to organize the case study and to identify:
      - types of event or process or interaction
      - an overall ‘pattern’ of complexity that could be used to explain why an implementation failed
  - Within case and Between case analyses
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# Analysing the data – coding a typical approach



Deductive (Pre-existing) codes - derived from literature, from interview questions or topics, from the research question.



Inductive codes (emerging from data) - deriving codes from the data collected, helping to break mould of current thinking on the research topic.



Most researchers employ BOTH of these (abductive approach)



# Coding - Getting Started



Start with a single interview and code it



Ask what do different statements in the interview to



Attach code to segment (highlight, Atlas-software, etc.)



Repeat for another interview(s)



Compare and refine lists of codes



Apply refined list to other interviews

# How to approach coding

## **BE:**

- Rigorous and thorough
- Methodical and systematic
- Comprehensive and balanced
- Transparent and accessible to others

## **DO:**

- Manage and sort the data
- Form hypothesis and test these if that is the aim
- Look for meaning and importance
- Answer your objectives

# Standards of Excellence

Significance

Completeness

Alternative perspectives considered

Sufficient evidence displayed

An engaging, attractive and readable style

# Things to Avoid in Reporting of Qualitative Data

- Quantification - not the point of qualitative research!
- Over-use of certain transcriptions/certain respondents
- Not connecting the quotes you display to the text around them
- Duplication of quotes
- Misapplication of quotes
- Unedited quotes that are difficult to understand
- 'Sanitised' quotes
- Overdoing the quotes

# Case Study References

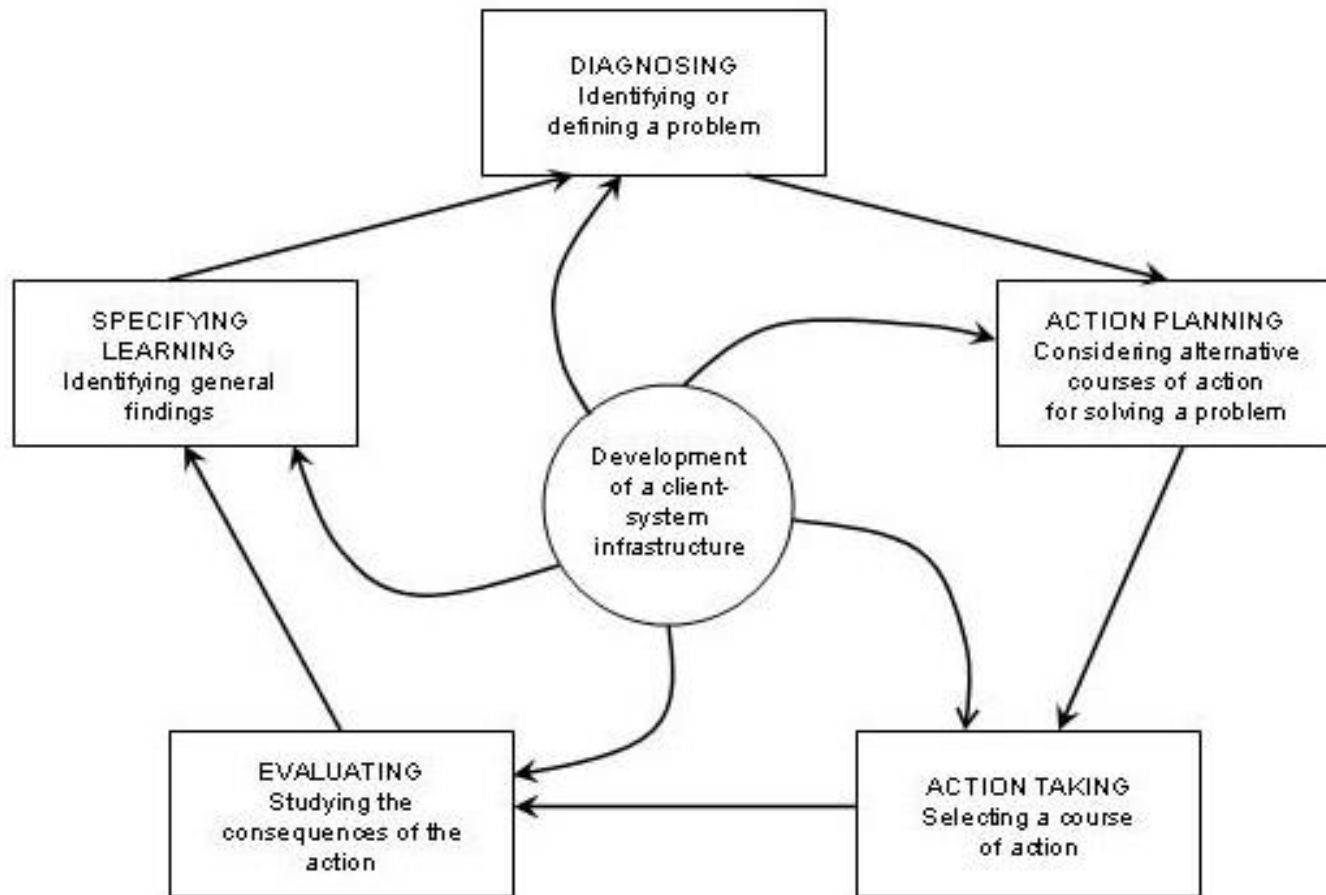
- Eisenhardt, K.M. (1989) “Building Theories from Case Study Research”, *Academy of Management Review*, (14:4), pp. 532-550.
- Ketokivi, M., & Choi, T. (2014). Renaissance of case research as a scientific method. *Journal of operations management*, 32(5), 232-240.
- Lee, A.S. (1989) “A Scientific Methodology for MIS Case Studies”, *MIS Quarterly*, (13:1), pp. 33-50.
- Walsham, G. (1993) “Interpreting Information Systems in Organizations”, Wiley, Chichester.
- Yin, R.K. (1991, 1998, 2003) “Case Study Research: Design and Methods”, Sage.
- Yin, R.K. (1993, 2003) “Applications of Case Study Research”, Sage.
- Sage research methods via Aalto primo, several handbooks on offer

# **Proactive Research Approaches: Action Research**

# Action research basics

- Action research is building/testing theory within context of solving an immediate practical problem in real setting
  - Thus it combines theory and practice, researchers and practitioners, and intervention and reflection
  - Assumptions:
    - Social settings cannot be reduced for study
    - Action (i.e. intervention) brings understanding
    - Action research is performed collaboratively: researchers and practitioners are partners
  - Action research is not consulting: it is action, but still research
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# Action research process



(Susman & Evered, 1978)



# Action research

- Action research process:
  - Diagnosing a problem - develop a theoretical premise
  - Action planning - guided by theoretical framework
  - Action taking - intervention, introducing change
  - Evaluating, reflecting - effects of change, theoretical premises
  - Specifying learning - “double loop”, feed 1) next iteration, 2) theory
- Some key points:
  - establishing **formal research agreement** specifying mutually acceptable ethical issues is vital
  - establishing explicit criteria to judge success: e.g., explain practice, bring about change, enhance practitioner learning
  - clearly explaining research orientation to practitioners is vital
  - researchers often depend on serendipity (good luck) for sites - difficult to have a “program of action research”

# ”Action Case”

- Focus on method development and evaluation
  - ”Understanding of context” - from case studies
  - ”Action” - from action research
  - ”Experimental approach” - from field experiment
- Features:
  - projects with short duration
  - intervention in real time
  - emphasis on ”quasi-experiments”
  - reducing complexity - one issue at a time
  - focus on changes in small scale

# AR Readings

- [Davison, R. M., Martinsons, M. G., and Kock, N.](#) (2004) “Principles of Canonical Action Research”, *Information Systems Journal*, (14:1), pp. 65-86.
- Mathiassen, L. (2002) “Collaborative Practice Research”, *Information Technology & People*, (15:4), pp. 321-345.
- Baskerville, Richard. (1999) “Investigating information systems with action research”, *Communications of AIS*, 2, 2-31.
- Susman, G. I. and Evered, R. D. (1978) ”An Assessment of the Scientific Merits of Action Research”, *Administrative Science Quarterly*, (23:4), p.582-603.

# **Proactive Research Approaches: Design Research**

# Design research - basics

- What is it?
  - Construction and evaluation of technology artifacts to meet organizational needs
    - Models, methods, systems (prototypes)
  - Development of associated theories
- Tries to change the “reality” under investigation
- One of the research approaches used for studying unknown areas or new ideas
- Builds new things based on ideas, which are hopefully based on earlier research

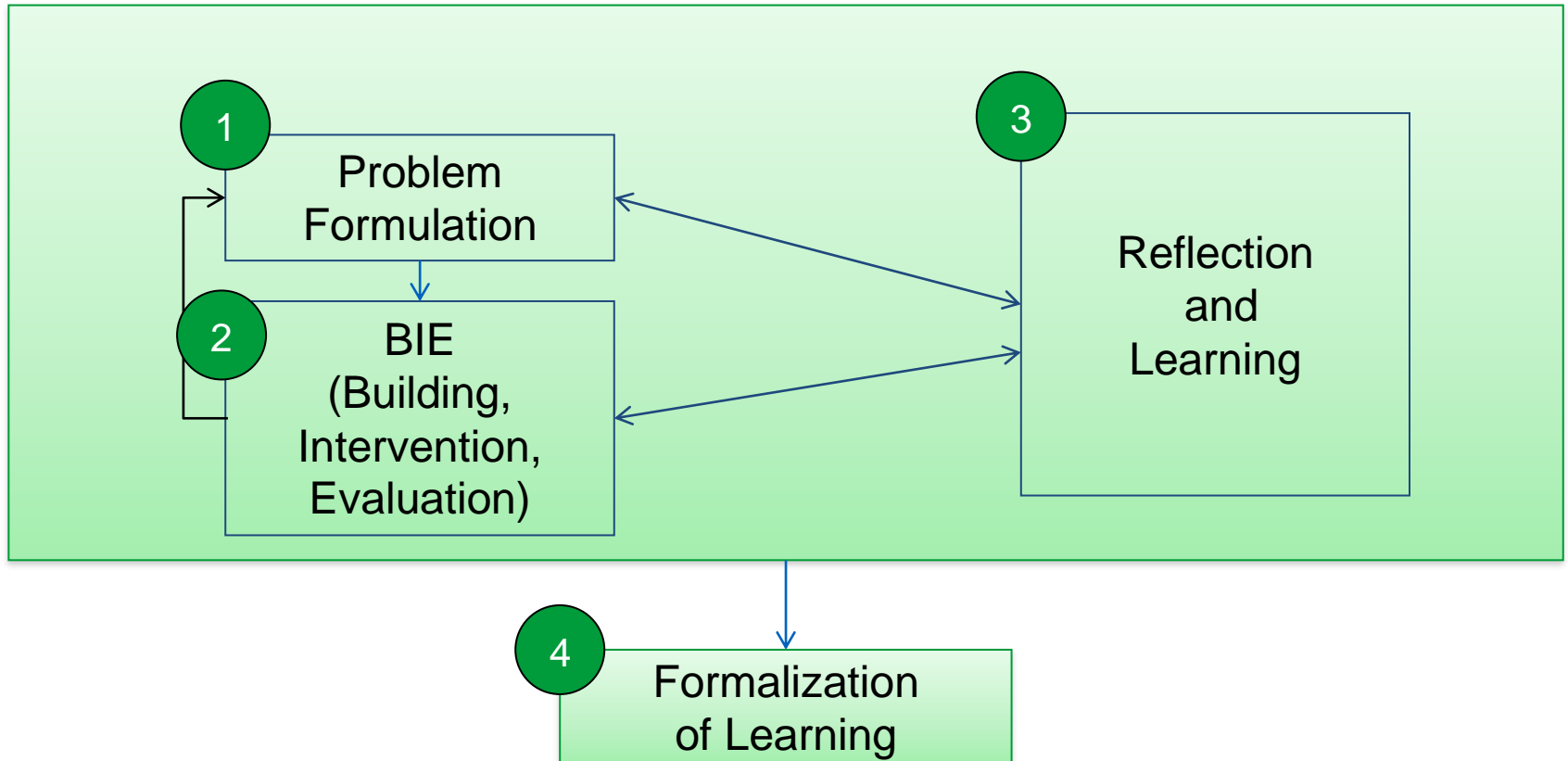
# Design research - do's and don'ts

- When to use this approach?
  - New areas
  - There are theories, but they cannot be tested
  - There are clear deficiencies in former systems
- When not to use this approach?
  - An area is well known
  - Theories and implementations are available in the field
  - You do not have tools or skills to build the system

# Action Design Research

- A research approach integrating AR and DR
- Recognizes that our research has a dual mission
  - adding to existing theory
  - producing knowledge to support IS practitioners in solving current and anticipated problems
- Builds knowledge by simultaneously
  - intervening in an organization
  - through developing an artefact

# The ADR Process



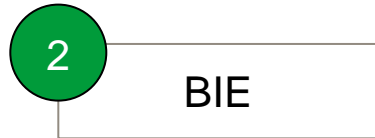


# ADR: Stage 1 tasks

1 Problem Formulation

- a) Identify and conceptualize the research opportunity
- b) Formulate initial research questions
- c) Cast the problem as an instance of a class of problems
- d) Identify contributing theoretical bases and prior technology advances
- e) Secure long-term organizational commitment
- f) Set up roles and responsibilities

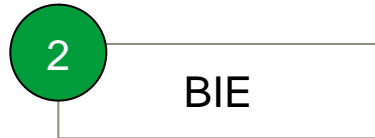
# ADR: Stage 2



**Building** of the technology artifact, **Intervention**, and **Evaluation** are intricately interwoven

Deployment in the organization to both solve the formulated problem and evaluate the theory

# ADR: Stage 2 tasks



- a) Discover initial knowledge-creation target
- b) Select or customize BIE form
- c) Execute BIE cycle(s)
- d) Assess need for additional cycles, repeat

# ADR: Stage 3 tasks

3

Reflection  
and  
Learning

- a) Reflect on the design and re-design during the project
- b) Evaluate adherence to principles
- c) Analyze intervention results according to stated goals

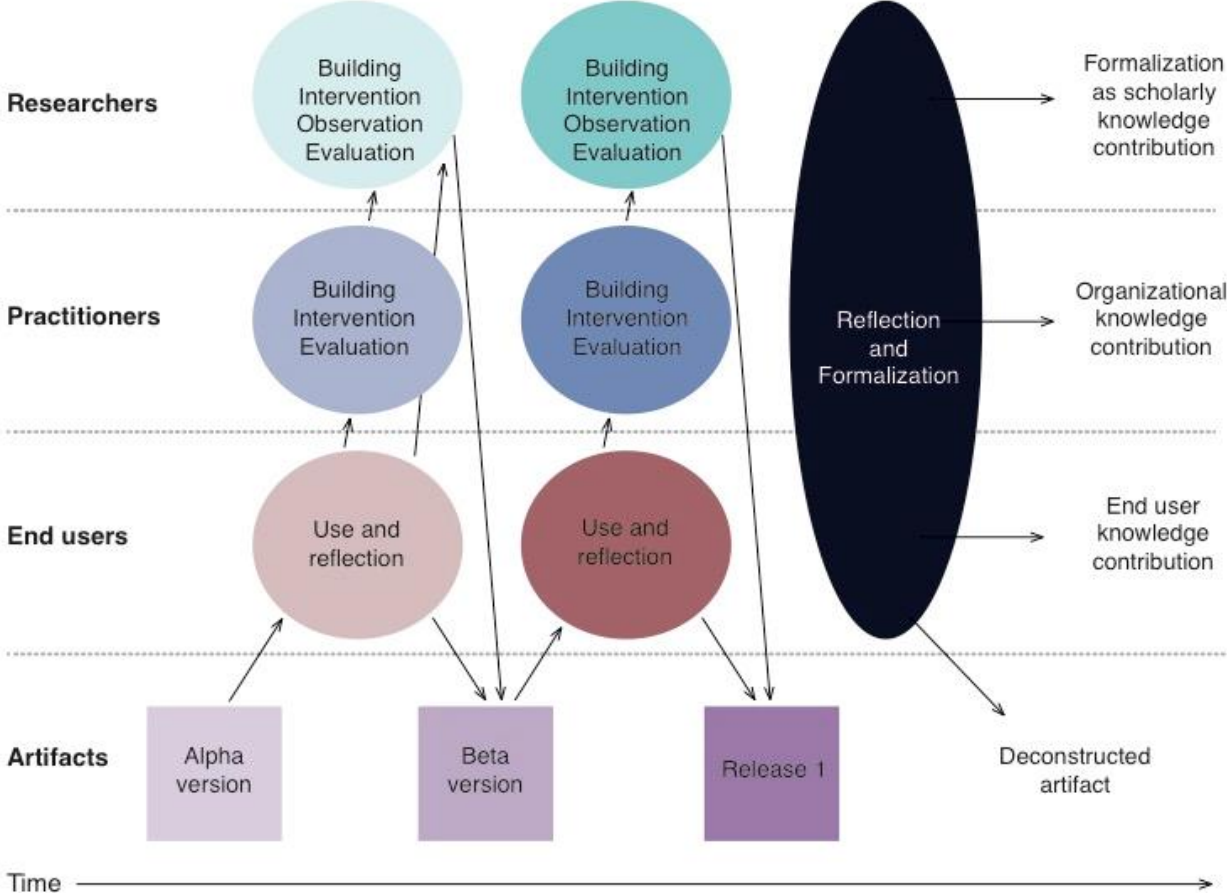
# ADR: Stage 4 tasks

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Formalization  
of Learning

- a) Abstract the learning into concepts for a class of field problems
- b) Share outcomes and assessment with practitioners
- c) Articulate outcomes as design principles
- d) Articulate learning in light of theories selected
- e) Formalize results for dissemination

# BIE Cycles



# DR articles

- Sein, Maung; Henfridsson, Ola; Puroo, Sandeep; Rossi, Matti & Lindgren, Rikard. (2011) "Action Design Research", *MIS Quarterly*, (35:2), pp. 37-56.
- Hevner, A. R., March, S. T., Park, J. and Ram, S. (2004) "Design Science in Information Systems Research", *MIS Quarterly* (28:1), pp. 75-105.
- Van Aken, J. E. (2004) "Management Research Based on the Paradigm of the Design Sciences: The Quest for Field-Tested and Grounded Technological Rules", *Journal of Management Studies* (41:2), pp. 219-246.

**NEXT STEPS**



# How to proceed?

- Identify your topic area
- Think about a research question in the area you've chosen
- Find a supervisor, agree on the topic with him/her – seminar leaders can help you find a supervisor!
- Attend seminar sessions
- Start writing a research plan
  - Be sure to read (again) the sections on Ethics and Role of theory in “Intro lecture 1”
- Present plan in the seminar after approved by supervisor
  - Do NOT leave this until you're halfway done with the thesis!
- Remember to sign up as discussant!
- Conduct a literature review
- Collect empirical data, and continue writing,..
- Present results in seminar

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# Further reading – General about qualitative research

- Silverman, David (2014) "Interpreting Qualitative Data", Sage Publications.
  - 1<sup>st</sup> chapter available online: [https://uk.sagepub.com/sites/default/files/upm-binaries/66995\\_IQD\\_sample\\_chapter.pdf](https://uk.sagepub.com/sites/default/files/upm-binaries/66995_IQD_sample_chapter.pdf)
- Silverman, David (2013) "Doing Qualitative Research: A Practical Handbook", Sage Publications.
  - 2<sup>nd</sup> chapter available online: [http://uk.sagepub.com/sites/default/files/upm-binaries/54810\\_Silverman\\_ch\\_2.pdf](http://uk.sagepub.com/sites/default/files/upm-binaries/54810_Silverman_ch_2.pdf)
- Myers, M.D. (2008) "Qualitative research in business & management", Sage Publications.
- Steven Alter, Alan R. Dennis (2002) "Selecting Research Topics: Personal Experiences and Speculations for the Future", *CAIS* (8)
- Lee, A. and Baskerville, R. L. (2003) "Generalizing Generalizability in Information Systems Research," *Information Systems Research*, (14:3), pp. 221-243.

# Further reading – examples about interviews and using data from social media

- Focus group interviews:
  - Mallat, N. (2007) “Exploring consumer adoption of mobile payments - A qualitative study”, *Journal of Strategic Information Systems*, (16:4), pp. 413-432.
- Individual interviews, mixed methods (qualitative, quantitative):
  - Mallat, N., Tuunainen, V. (2008) “Exploring Merchant Adoption of Mobile Payment Systems - an Empirical Study”, *E-service Journal*, (6:2), pp. 24-57.
- Multi-case study (with interviews):
  - Taponen, S. & Kauppi, K. (2020), “Service outsourcing decisions – A Process Framework”, *Journal of Global Operations and Strategic Sourcing*, Vol. 13 No. 2, pp. 171-194
- Case with interviews and data from social media platforms:
  - Jarvenpaa, S.L., Tuunainen, V.K. (2013) “How Finnair socialized customers for service co-creation with social media”, *MIS Quarterly Executive*, (12:3), pp. 125-136.

# Thesis examples

- ADR: Julia Hämäläinen, Constructing continuity for virtual work and new employee onboarding – case Smartly.io culture handbook
- Multiple case study: Silja Suoheimo, The impact of knowledge management capabilities on innovation contest outcomes
- Single case study: Emilia Xue, A service vision for a laser-based scanning method
- Interview study: Vi do, Supply chain agility in semiconductor shortage