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The Use of Focus Groups in Design Science Research

Outline

- **Overview**
- **Design Science in IS**
- **A Design Science Methodology**
 - Evaluating Design Science Artefacts
- **Focus Groups**
- **An Example of Focus Groups in IS Design Research**
 - Background
 - Execution
- **Guidelines**
- **Conclusion**

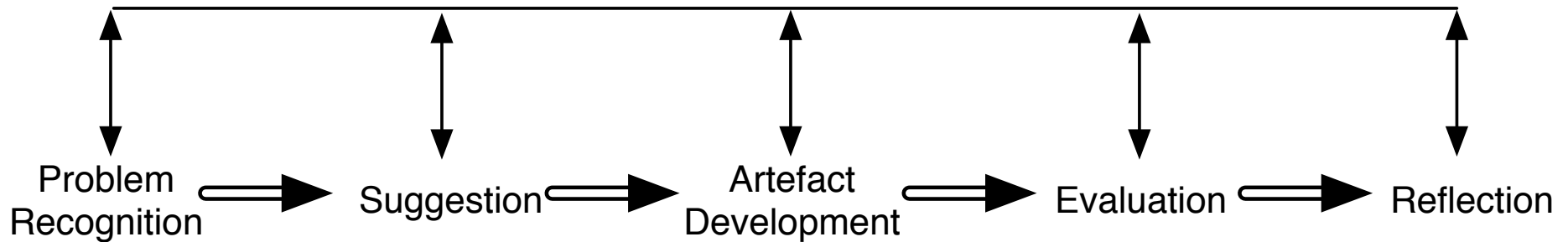
Overview

- **Origin**
 - Focus Groups used as an evaluation method as part of a design science PhD Project
 - Past Focus Groups experiences
- **The IS literature rarely (ever?) mentions focus groups for evaluating design science artefacts**
- **This prompted us to ask why?**

Design Science in Information Systems

- **Two fundamental research perspectives in IS**
 - Natural science & design science
- **Design Science is a *complement* to Natural Science approaches**
- **Design Science is gaining momentum in IS**

A Design Science Methodology



From Arnott (2006)

Evaluation of Design Science Artifacts

- To assess the 'worth' of artifacts
- Hevner et al (2004) Table 2

Design Evaluation Methods	
1. Observational	Case Study: Study artefact in depth in business environment.
	Field Study: Monitor use of artefact in multiple projects.
2. Analytical	Static Analysis: Examine structure of artefact for static qualities.
	Architecture Analysis: Study fit of artefact into technical IS architecture.
	Optimization: Demonstrate inherent optimal properties of artefact or provide optimality bounds on artefact behavior.
	Dynamic Analysis: Study artefact in use for dynamic qualities.
3. Experimental	Controlled Experiment: Study artefact in controlled environments.
	Simulation: Execute artefact with artificial data.
4. Testing	Functional (Black Box) Testing: Execute artefact interfaces to discover failures and identify artefacts.
	Structural (White Box) Testing: Perform coverage testing of some metric in the artefact implementation.
5. Descriptive	Informed Argument: Use information from the knowledge base to build a convincing argument for the artefact's utility.
	Scenarios: Construct detailed scenarios around the artefact to demonstrate its utility.

- Stress effective artifacts are only possible through well-executed, appropriate, evaluation approaches
 - No mention of focus groups

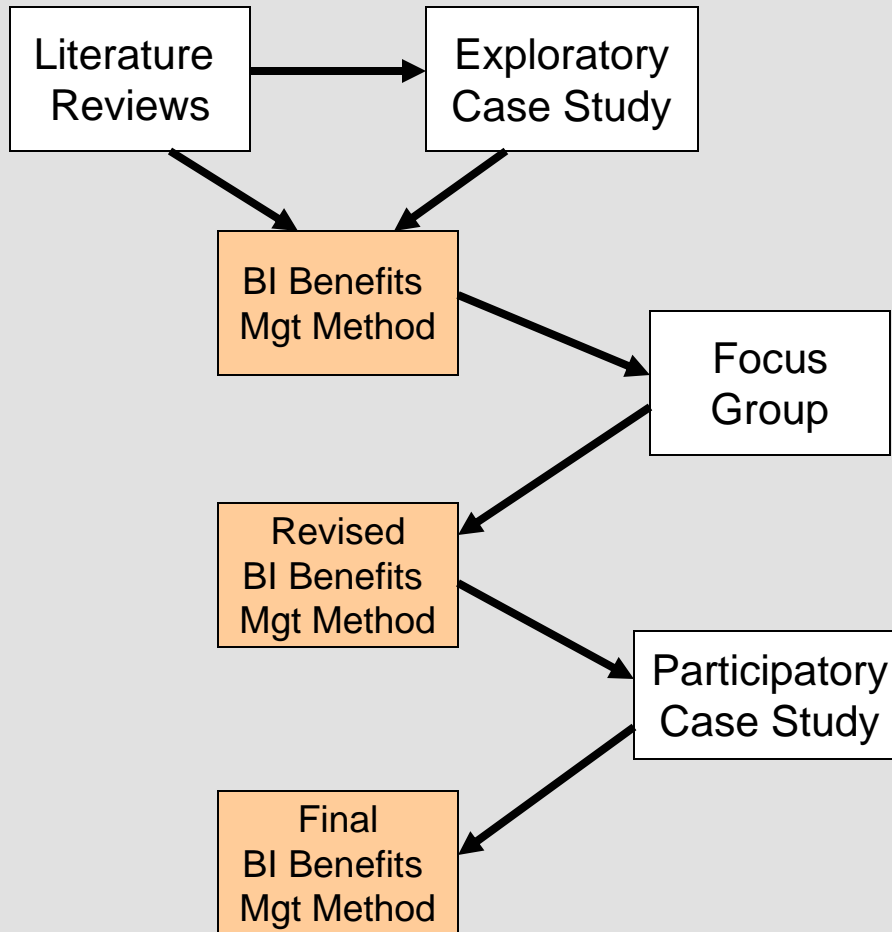
Focus Groups

- **Widely used in social science**
- **Somewhere between participant observation and semi-structured interviews**
- **Interactive group setting, free flowing conversation**
- **Rich, concentrated sets of data**
 - Short period of time
- **Can get very senior participants**

An Example of Focus Groups in IS Design Research

- **Background**
 - Business Intelligence (BI)
 - The value of BI, difficulties in measurement
- **Design Science Approach**
 - Developing an approach for measuring BI value
 - Artifact is a *BI Benefits Management Method*

The Project



An Example of Focus Groups in IS Design Research 2

- **Focus Group objectives**
- **Participant Selection & Characteristics**
- **7 participants**
 - Inc. Practice manager, program manager, senior project officer, BI consultant, manager of BI and CPM solutions, CEO
 - 125 BI projects managed,
 - 8.7 years average BI experience
 - 83 BI systems designed, 53 built, 34 evaluated

An Example of Focus Groups in IS Design Research 3

- **Group Facilitator**
- **Assistant**
- **Observers**
- **The Facility**
- **Facilitator Guide**
 - Based on
 - > Foundation theories
 - > Research questions
 - > Artifact

An Example of Focus Groups in IS Design Research 4

- **The Format**
- **Session 1**
 - 2:00 to 3:15
- **Break**
- **Session 2**
 - 3:45 to 4:45
- **Networking**

An Example of Focus Groups in IS Design Research 5

- **Analysis**
 - Video recorded
 - Transcribed, reviewed
 - > 45 pages text
 - Coded and analyzed
- **Outcome**
 - Changes to method
 - Organization maturity
 - Differential effects of evolutionary development
 - Detailed changes

Design Science Focus Group Guidelines 1, 2

1. **Maintain Focus**

- Not random or free-form
- Build specificity and importance

2. **Be Selective with Group Participants and Size**

- Market 10-12, Social science 6-8
- Homogenous
- Power differential
- Theoretical sampling

Design Science Focus Group Guidelines 3, 4

3. Choice of Facilitator

- Trained facilitator
- IS researcher
- Involve in guide development

4. Be Prepared

- Rigorous theory base
- Facilitator guide
- Detailed planning for day
- Assistant

Design Science Focus Group Guidelines 5, 6

4. Allow Flexibility

- Facilitator must adapt to session
- Session, Review, Session design

5. Take a Pragmatic Approach to Analysis

- Use standard qualitative techniques
- Risk of over analyzing

Conclusion

- **Importance of evaluating artifacts**
 - 42% of DSS DesSc research has no evaluation
- **Focus groups that are well-designed and well-executed are a valuable evaluation technique for IS design research**
- **Add a row to the “Descriptive” part of Hevner et al.’s Table 2**

Thank you

- **Questions?**
- **For more info...**
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