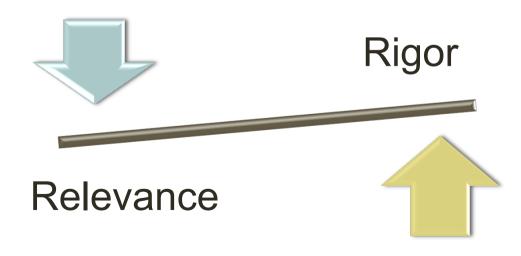
Conducting Empirical Studies in Industry: Balancing Rigor and Relevance

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Research Background

- Conducting an empirical research in industry is challenging and different compared to the academic environment
- Reasons being
 - Short time periods
 - High Expectations
 - Limited Skills
 - Privacy and confidentiality issues
- Limited literature reporting on the challenges and complexities involved in conducting empirical studies in an industry

Objective

 To develop a battery of software project characteristics, which need to be taken into consideration when acquiring and (or) tracking a project.

Method Chosen

Semi Structured Interviews (SSI)

Rationale

- SSI is an effective method to capture opinions, perceptions, and descriptions and is useful to answer 'why' and 'how' an incident / event occurred.
- Useful to help the research team to identify a large number of project characteristics based on project managers' experiences and observations.

Challenges

Lower response rate

Unable to record interviews

Solutions

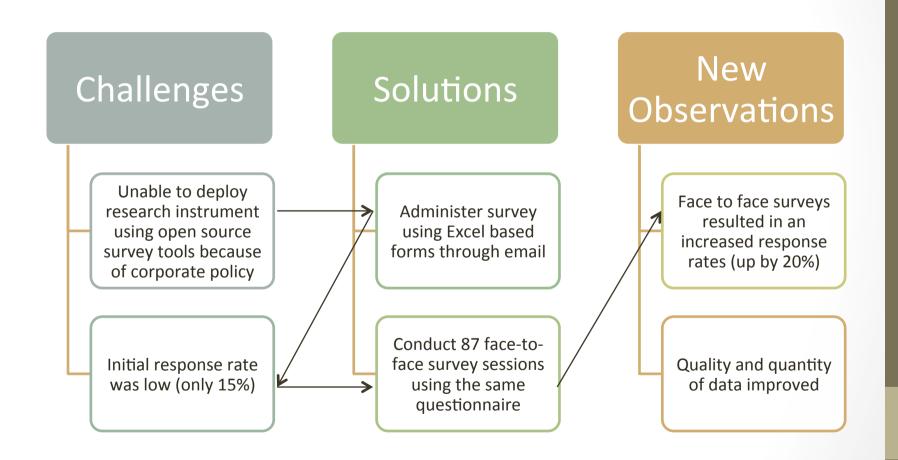
Collection of data by taking extensive notes

Include another researcher for decision making

Deviations from Standard Methods and Practices

Interviews are conducted in coffee shop

- Objective The objective of the research was threefold:
 - to understand the challenges faced by project managers in distributed teams
 - linkage between these challenges, and
 - impact of the challenges on project success
- Method Chosen
 - Self-administered questionnaires
- Rationale
 - To ensure "standardization and uniformity" across participants
- Analysis
 - Bayesian network modeling
- Findings
 - Challenges related to 'project planning', 'visibility', 'communication', and 'project management and control' were having significant impact on project success.



Objective

- To assess the operational feasibility of the Follow-the-sun (FTS) model in an industrial setting.
- To understand challenges and limitations and also the open areas of research

Research Setting

- A joint collaborative research between corporate researchers and external university researchers.
- Teams were spread between India and Mexico locations

Data Collection

- Using questionnaires and interviews.
- Also collected from tools such as Microsoft Office Communicator, data repository, telephone bridge call records (to assess time taken), project execution portals and notes from meetings

Method Chosen

Case study with Field Experiment

Challenges

Language – accent issues with Mexico team members

Participant developers gave part-time commitment to the project

Varying experience levels including recent hires, lack of experience in agile

Delays in response from the internal client

Solutions

Data was collected using variety of sources

Closed monitoring of responses received

A 24*7 facilitator was appointed from latin America

Observations

Clear appearance of conflicts (project goals and tasks) among distributed teams

Indian teams were motivated and willing to spend extra time with Mexican peers

Mexican employees showed reluctance towards sitting beyond office hours

Work handovers among time zones had various challenges

Challenges and Lessons Learned



LESSONS

A typical research effort in an industrial setting, irrespective of the methodological choice, usually requires tradeoff decisions between methodological rigor and requirements and available time and resources

Aim for 'just enough rigor' rather than a text book based ideal rigor.

Focus on sourcing - We appointed university interns for preliminary data collection and analysis

Use different mechanisms to enhance the response rate

Need to be flexible with research methodology

Prepare in advance – Collect information regarding projects apriori