

Case study research

2023

5 December 2023

Learning objectives

- Decide whether a case study is a suitable method, given a research question
- List good practices in case research
- Specify the four elements of a case study protocol for a research topic
- Explain core choices within each element of the case study protocol

What are case studies? (1)

- Empirical, in-depth study of **contemporary phenomenon** (“the case”) within its **real-life context**
 - No clear boundaries between phenomenon and context

What are case studies? (2)

- Distinctive situation with **many more variables of interest** than data points
- Benefits from prior development of **theoretical propositions** to guide data collection and analysis
- Relies on **multiple sources of evidence**, with data that needs to be **triangulated**

What are case studies? (3)

- All-encompassing mode of inquiry
 - specific design logic, data collection techniques, and data analysis approaches
- **Note: case studies ≠ Qualitative research**
- Commonly made mistake!

When to do a case study?

- “Contemporary phenomena in their real-life setting, taking into account their rich, qualitative intricacies” (Benbasat et al 1987)
- Why or how questions
 - where researchers cannot manipulate core concepts (Yin, 2018)

Assignment

Suitability of case study method (1)

- In a study concerning business data sharing, the following research question is provided:
 - ***“What percentage of European companies openly shares detailed, machine-readable spending data on their website?”***
- Assignment, in groups of 2-3:
 1. Discuss whether a case study is a suitable method for this research question
 2. Discuss at least three criteria that determine whether a case study is suitable or not

Feedback/ Q&A

Suitability of case study method

“What percentage of European companies openly shares detailed, machine-readable spending data on their website?”

1. Case study is not suitable for this RQ
2. Criteria that determine why case study is not suitable here:
 - No how or why question but ‘how many’
 - Real life setting less important
 - Specific and limited number of variables of interest
 - Requires a probability-based sample

Assignment

Suitability of case study method (2)

- In a study concerning information sharing, the following research question is provided:
 - ***“What are the drivers and mechanisms to achieve cross-sector voluntary information sharing to create public value?”***
- Assignment, in groups of 2-3:
 1. Discuss whether a case study is a suitable method for this research question
 2. Discuss at least three criteria that determine whether a case study is suitable or not

Feedback/ Q&A

Suitability of case study method (1)

“What are the drivers and mechanisms to achieve cross-sector voluntary information sharing to create public value?”

1. Case study is suitable for this RQ
2. Criteria that determine case study suitability:
 - Case study typically used for **how or why questions** where **researchers cannot manipulate the core concepts**, which is the situation here (how can cross-sector voluntary information sharing be achieved, how can public value be created)
 - ...(see next slide)

Feedback/ Q&A

Suitability of case study method (2)

“What are the drivers and mechanisms to achieve cross-sector voluntary information sharing to create public value?”

2. Case study suitability:

- Study concerns a **contemporary phenomenon in its real-life setting**
- **Boundaries between phenomenon and context not clearly evident**
- **Many variables of interest** (drivers, mechanisms, multiple actors involved, types of data sharing, public value, etc.)
- Question directed towards examining **causality**

Criticisms on case study research

1. Lack of rigor
2. Little basis for generalization
3. Unmanageable level of effort, take much time
4. Too much detail, getting lost in materials

Assignment

Case study criticisms

- In groups of 2, write down solutions for how to deal with these 4 criticisms
- Exchange answers with the group next to you and discuss argumentation

Case study criticisms:

1. Lack of rigor
2. Little basis for generalization
3. Unmanageable level of effort, take much time
4. Too much detail, getting lost in materials

Feedback Q&A

Case study criticisms

- Lack of rigor
 - Use systematic procedures, develop case study protocol

Feedback Q&A

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- Little basis for generalization
 - Focus on generalizing to theoretical propositions (like experiments) and not to populations or universes

Feedback Q&A

Case study criticisms

- Lack of rigor
 - Use systematic procedures, develop case study protocol
- Little basis for generalization
 - Focus on generalizing to theoretical propositions (like experiments) and not to populations or universes
- Unmanageable level of effort, take much time
 - Not necessarily, case study protocol
 - Case studies do *not* depend solely on ethnographic or participant-observer data

Feedback Q&A

Case study criticisms

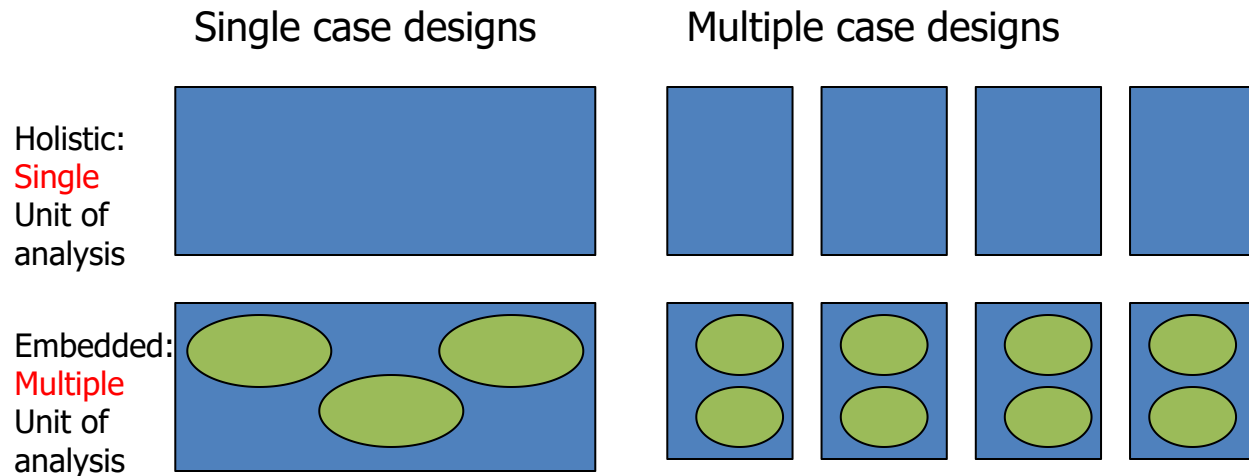
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 - Case studies do *not* depend solely on ethnographic or participant-observer data
- Too much detail, getting lost in materials
 - Use systematic procedures
 - Theoretical propositions to guide the search for data within the case

The case study protocol

Case study protocol

1. Case study questions
 - Or ideas, propositions, hypotheses
 2. Unit of analysis
 - Individual, organization, network, project
 3. Case study selection
 4. Field procedures
 5. Analysis method
- `machine instructions' level
 - --> Repeatable(?), transparent

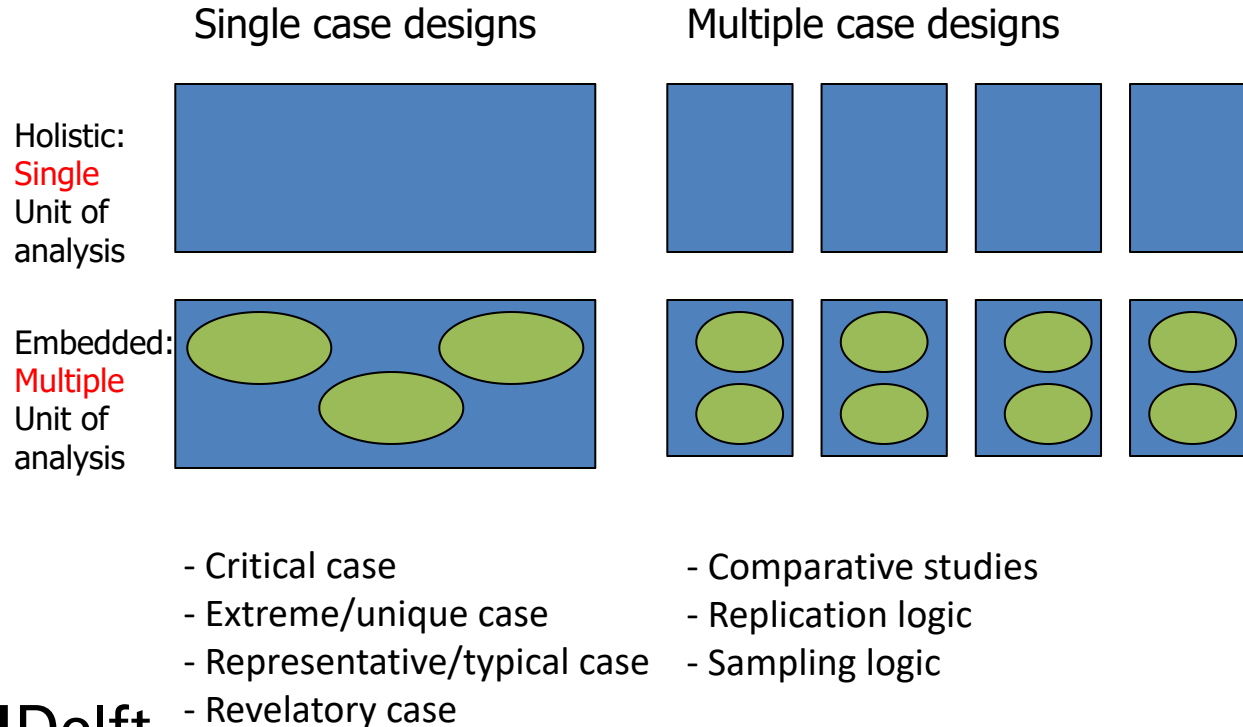
Case study selection: designs



- Critical case
- Extreme/unique case
- Representative/typical case
- Revelatory case

- Comparative studies
- Replication logic
- Sampling logic

Assignment



RQ: Why do telecom operators and banks struggle to roll out mobile payment platforms?

1. What would each type of case study design look like?

Field procedures: data collection

- Multiple data collection methods
 - Quantitative / qualitative
 - Interviews, document analysis, observation, survey
- Multiple data sources
 - Public/private, different time points, different perspectives
- Unit of observation may differ from unit of analysis!
- Create a Case study database
- **Maintain a Chain of Evidence**

Field procedures: data collection

- Multiple data collection methods
 - Quantitative / qualitative
 - Interviews, document analysis, observation, survey
- Multiple data sources
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- Unit of observation may differ from unit of analysis!

RQ: Why do telecom operators and banks struggle to roll out mobile payment platforms?

1. What data collection methods could be suitable?
2. What data sources could be suitable?

Data analysis

- Field notes, memo's
- Transcription, databases, data-analysis tools
- Coding procedures
- Software
- Within case cross case analyses procedures
- Iterations

- Triangulate!
 - Between data collection methods
 - Between data sources
 - Between analysts
 - Between findings and theory

Quality assessment of case study research

- Quality assessment of case study research using logical tests:
 - Construct validity
 - Internal validity
 - External validity
 - Reliability
- For each of these logical tests, tactics can be used to enhance the quality of case study research

Assignment

Example construct validity

For example:

- Construct validity: “Identifying correct operational measures for the concepts being studied” (Yin, 2018, p. 78).

Logical test	Case study tactic
Construct validity	Use multiple sources of evidence (data collection phase)
	Establish a chain of evidence (data collection phase)
	Have key informants review draft case study report (report composition phase)

Assignment

Case study best practices

- For each of the following three logical tests, discuss an underlying tactic that can be used to assess the quality of case study research:
 - Internal validity: establishing a causal relationship
 - External validity: examine possible generalization of findings
 - Reliability: replication of research by other researchers
- In groups of 2

Assignment Feedback / Q&A

Internal validity

- **Internal validity:** “Seeking to establish a causal relationship, whereby certain conditions are believed to lead to other conditions, as distinguished from spurious relationships” (Yin, 2018, p. 78)

Logical test	Case study tactic
Internal validity	Pattern matching (data analysis phase)
	Explanation building (data analysis phase)
	Address rival explanations (data analysis phase)
	Use logic models (data analysis phase)

Assignment Feedback / Q&A

External validity

- **External validity:** “showing whether and how a case study’s findings can be generalized” (Yin, 2018, p. 78)
 - Relation to broader domain
 - Generalizing theoretical propositions

Logical test	Case study tactic
External validity	Use theory (research design phase)
	Use replication logic (research design phase)

Assignment Feedback / Q&A

Reliability

- **Reliability:** Research should be described in such a way that any other researcher can replicate the research

Logical test	Case study tactic
Reliability	Use case study protocol (research design & data collection phase)
	Develop case study database (data collection phase)
	Maintain a chain of evidence (data collection phase)

What is a case study protocol?

- Prescribes steps for conducting a case study
- Contains:
 - Instrument
 - Procedures and general rules
- `Machine instructions' level
- Desirable under all circumstances but essential for research using a multiple case study approach

Case study protocol

Four essential sections:

A. Overview of the case study

B. Data collection procedures

C. Protocol questions

D. Tentative outline for the case study report

Assignment 1

Case study protocol analysis

- In assignments 1-3, we will look for case study protocol information included in
 - de Reuver, M., Verschuur, E., Nikayin, F., Cerpa, N., & Bouwman, H. (2015). Collective action for mobile payment platforms: A case study on collaboration issues between banks and telecom operators. *Electronic commerce research and applications*, 14(5), 331-344.
<https://www.sciencedirect.com/science/article/pii/S1567422314000519>
- Article links on BS
- Work individually or in groups of 2

Assignment 1

Case study protocol analysis

Does this article provide information about the following case study protocol elements?

- Case study selection & unit of analysis (section A)
- Case study description (section A)
- Data collection procedures (section B)
 - how was the case study data collected? (e.g., interviews, websites, news articles)
- Analysis method (section B)
 - E.g., Atlas.ti software, single/multiple assessors
- Case study questions (section C)
 - Which questions did the researchers try to answer?

Assignment 1

Feedback

Assignment 2

Case study protocol analysis

1. Take 5 minutes to quickly scan the following article (particularly research approach/methodology section):
 - Zhang, G., & Ravishankar, M.N. (2019). Exploring vendor capabilities in the cloud environment: A case study of Alibaba Cloud Computing. Information & Management, 56(3), 343-355.

Link in chat:

<https://www.sciencedirect.com/science/article/pii/S03787206173111>

99

Assignment 2

Case study protocol analysis

2. Does this article provide information about the following case study protocol elements?
 - Case study selection & unit of analysis (section A)
 - Case study description (section A)
 - Data collection procedures (section B)
 - Analysis method (section B)
 - Case study questions (section C)
- Menti.com – code: **5269 9907**

Assignment 2

Feedback

- Zhang, G., & Ravishankar, M.N. (2019). [Exploring vendor capabilities in the cloud environment: A case study of Alibaba Cloud Computing.](#)
- Article contains:
 - Case study selection - unit of analysis
 - Case study description
 - Data collection
 - Analysis methods
 - Case study questions

Case selection criteria



3. Research methodology

We adopted the interpretive qualitative case study approach, which helps investigate phenomena embedded in specific contexts [48,49,60]. We applied two criteria for case selection. First, we looked for a case organization with relevant knowledge and experience of developing and delivering cloud services to firm-level clients. Second, we aimed to select a cloud services vendor organization highlighted recently in the business press for its strong capabilities to detect and respond quickly to market changes. Thus, we selected Aliyun, which is known as one of the most successful cloud service vendors in China.

Data collection procedures



3.2. Data collection

We collected our data in three stages. We conducted 48 semi-structured interviews in total (see Appendix B). The first stage was between February and April 2013, during which we conducted eight telephone interviews with cloud computing industry insiders in China to better understand the market and formulate interview questions for the subsequent site visit. In the second stage, between June and August 2013, we visited the Aliyun headquarters in China and conducted 36 face-to-face interviews. Each interview was recorded with the consent of the informants and was subsequently transcribed for data analysis. The interview questions were

We also collected several documents including company magazines, sales leaflets, newsletters, internal journals, memos and archival reports. These documents helped us accurately place the key events in time and better understand some of the complex technical concepts mentioned during the interviews. In addition to the

Data collection procedures



3.2. Data collection

We collected our data in total (see Appendix B) during which we conducted interviews with industry insiders in China. The interview questions for the subsequent interviews. In August 2013, we visited the firms for face interviews. Each interview was subsequently transcribed.

We also collected newsletters, internal documents, and other materials that helped us accurately understand the firm's operations.

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Appendix A. Illustrative interview questions

1 Background

- Could you tell us about your professional background?
- Could you briefly introduce your firm's cloud services?

2 Cloud computing overview

- What is your take on cloud computing?
- How and why is cloud computing different from other technologies?
- What are the unique selling points of your firm's cloud service offerings?

3 Development of cloud services

- What are the key aspects of your firm's cloud service development?

Data analysis method



We adopted the “selective” coding method to identify central themes. From the data, we identified several first-order concepts across the three periods. From these first-order concepts, we then inductively moved to second-order theoretical categories.

Case study questions



background, this paper addresses two research questions: (1) What are the key vendor capabilities for cloud services delivery? (2) What organizational actions underpin the key vendor capabilities? Theoretically, the paper draws from the

Assignment 4

Setting up a case study protocol

- Weekly assignment 4:
 - Define a research question on the topic of data and business models that can typically be answered using qualitative research
- Use that RQ as the basis for *this* assignment (or come up with another one)
- **Write down your research question (appropriate for a case study)**
 - Focus on gaining in-depth insights, not on frequencies
 - How or why question

Assignment 4

Setting up a case study protocol

- Assignment:
 - Imagine you would conduct a case study to answer this RQ
 - Individually/in pairs think of what information you would put into your case study protocol sections

Assignment 4

Setting up a case study protocol (A)

- Section A: an overview of the case study
 - Objectives
- **What would be the objective of your case study to answer the research question?**

Assignment 4

Setting up a case study protocol (B)

- Section B: data collection procedures
 - Identification of likely sources of data
- **What data (sources) would you collect if you would conduct a case study to answer your research question?**

Assignment 4

Setting up a case study protocol (C)

- Section C: protocol questions
 - The specific questions that the case study researcher must keep in mind in collecting data
- **What specific questions would you need to keep in mind while conducting a case study to answer your research question?**

Assignment 4

Setting up a case study protocol (D)

- Section D: a tentative outline for the case study report
 - Audience for the case study report
- **For what audience would you publish the case study report?**

Next week

- Monday: Wrap-up case study + Intro to qualitative analysis
- Tuesday: Practice with qualitative analysis