



# Case Study

## - a descriptive research methodology

INF5000/9000

Feb 14 2023 Guri Verne,

Design group

# WHAT IS A CS?

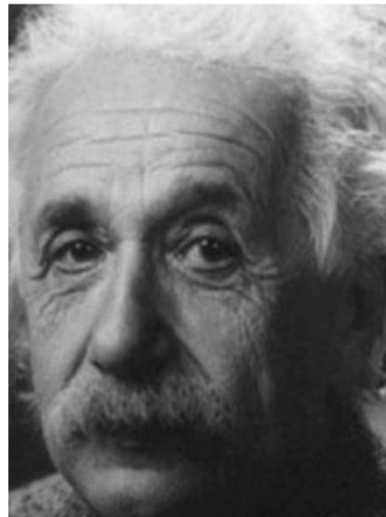


A case is an example of something

- A choice of what to study
  - A case is a **specific, unique, bound system** (Stake 2005)
- Case studies focus on activities, functionings and local meaning within specific case(s) (Stake 2005)
- The study of complex phenomena in their context, in particular when the boundaries between the phenomenon and the context are not clear (Baxter & Jack 2008)
- A case study is a situated and detailed inquiry for learning – not proving (Flyvbjerg 2011)

# From a case we can

- understand something
- get a rich description of something
- learn that something is not the case
- learn from a rarely occurring situation
- suggest a theory or framework for something
- get a basis for action or design
- .....



Example isn't another way to teach,  
it is the only way to teach.

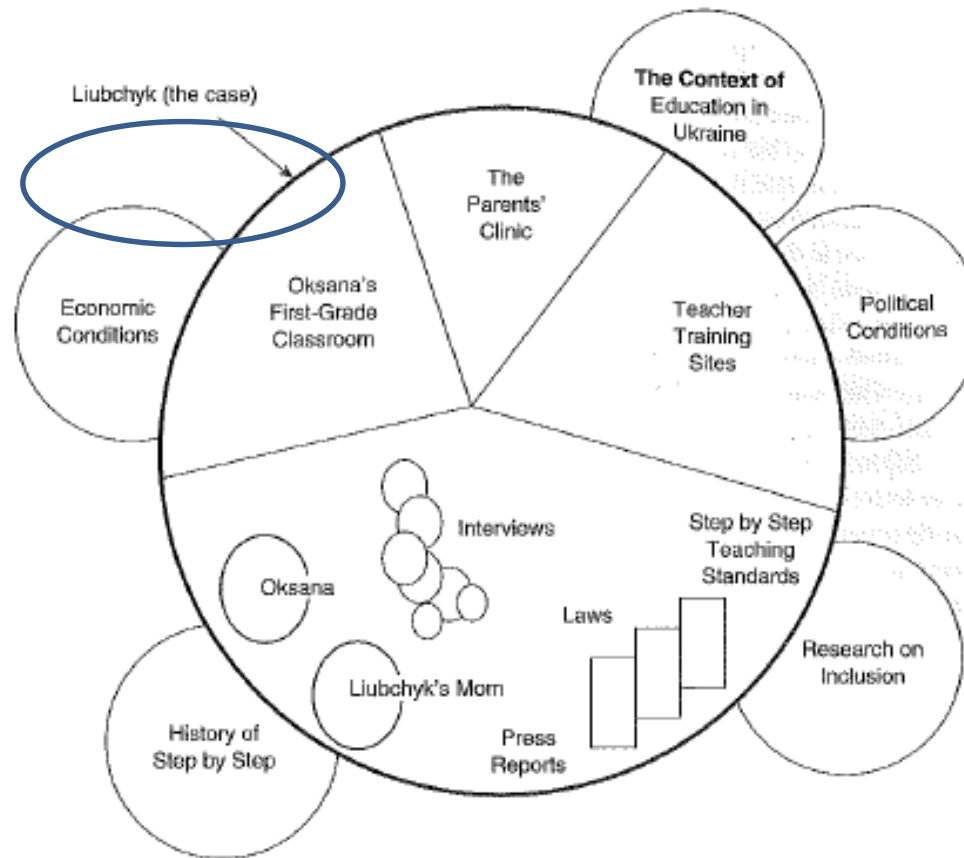
— *Albert Einstein* —

# A case is an example of something

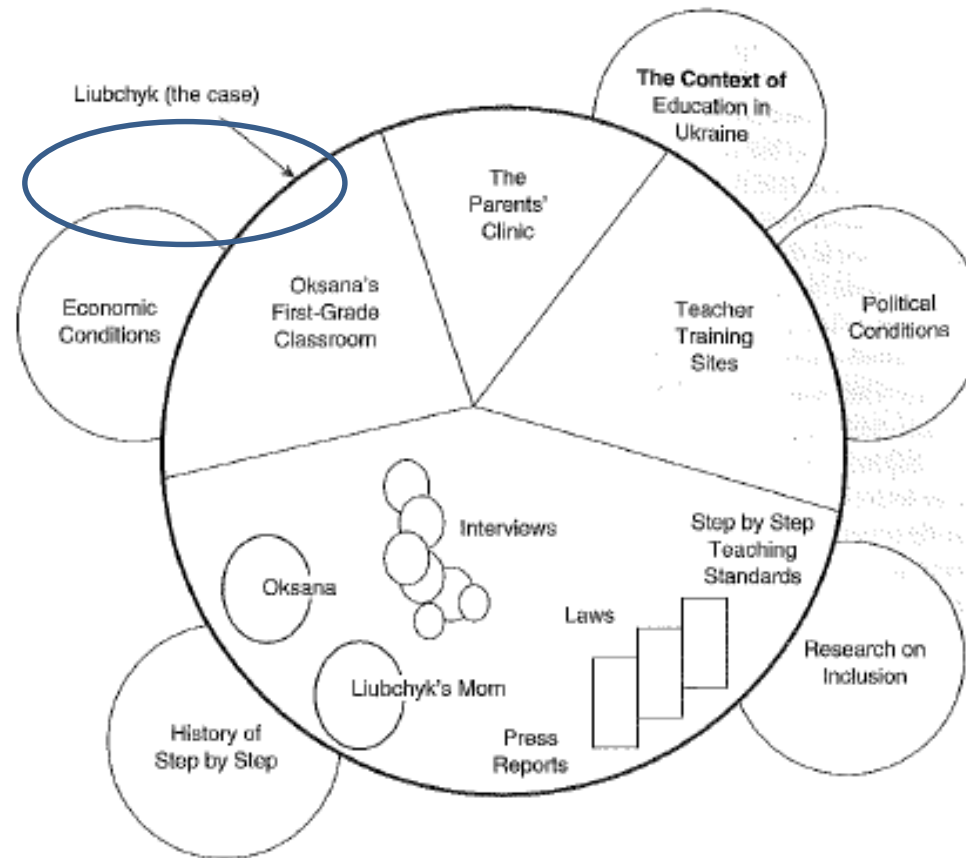
Talk to your neighbour:

Do you have experience with illustrating examples? What can you learn from it?

# A case in its context



# A case in its context



**Issues:**

- Mainstreaming Versus Special Schools
- Child-Centered Versus Teacher-Centered Teaching
- Parent Involvement
- Teacher Assistants

**Main Information Questions:**

- What does Liubchyk learn in school?
- Does his presence distract others' learning?
- Does the Ministry support mainstreaming?
- What disabilities are not admissible here?
- Why did Oksana become an advocate?
- How did Liubchyk's socialization change?
- Is the teacher training trainee-centered?

(Stake 2005)

# PARADIGM



- Interpretive
  - Critical, or
  - Positivist
- 
- Origin: Social sciences

# METHODS

- Interview
- Documents
- Observation
- Coding (GT)
- Interpretation (GT)  
(Stake 2005)

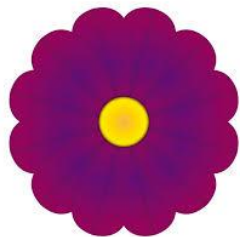




# TYPES OF CASE STUDIES



- Intrinsic – the case itself
- Instrumental – to learn about something else
- Collective case study – to learn from many cases  
(Stake 2005)



# CASE STUDY EXAMPLES 1

- Deep Play: Notes on The Balinese cockfight (Geertz 1972)

- Getting access
- “Much of Bali surfaces in a cock ring”



- For further readings on Geertz and ‘thick description’ see e.g. Atkinson & Delamont (2005)

The case =  
unit of analysis  
(Baxter&Jack 2008)

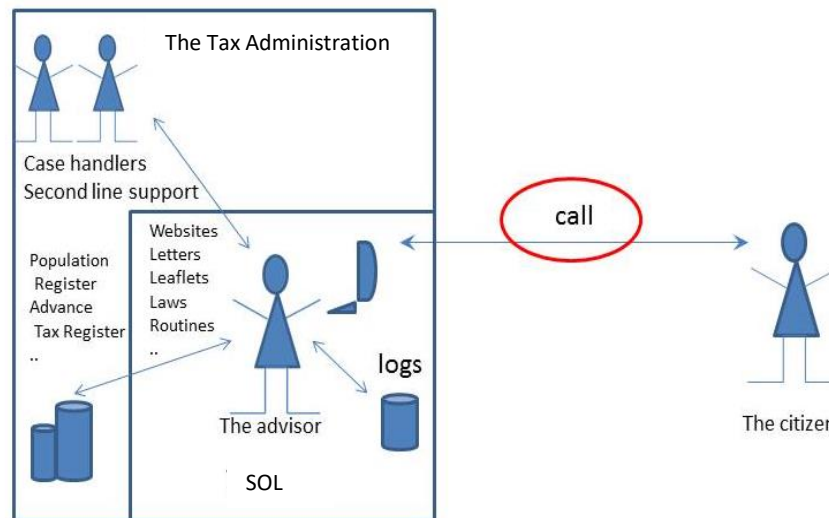


# CASE STUDY EXAMPLES 2

**”The winners are those who have used the old paper form”  
On citizens and automated public services (Verne 2015)**

- an instrumental case study within a critical research paradigm ([Stake 2005](#); [Myers Living version](#)).

Studying the calls from citizens to learn about how automation functioned.



# Description of the case

## Chapter 4. The sociomaterial assemblage of doing taxes

- 4.1 SOL - The advisor's workplace
- 4.2 IT in the Tax Administration
- 4.3 The call advisor
- 4.4 The advisor in action
- 4.5 The callers
- 4.6 The call



# Description of the case

## Chapter 4. The sociomaterial assemblage of doing taxes

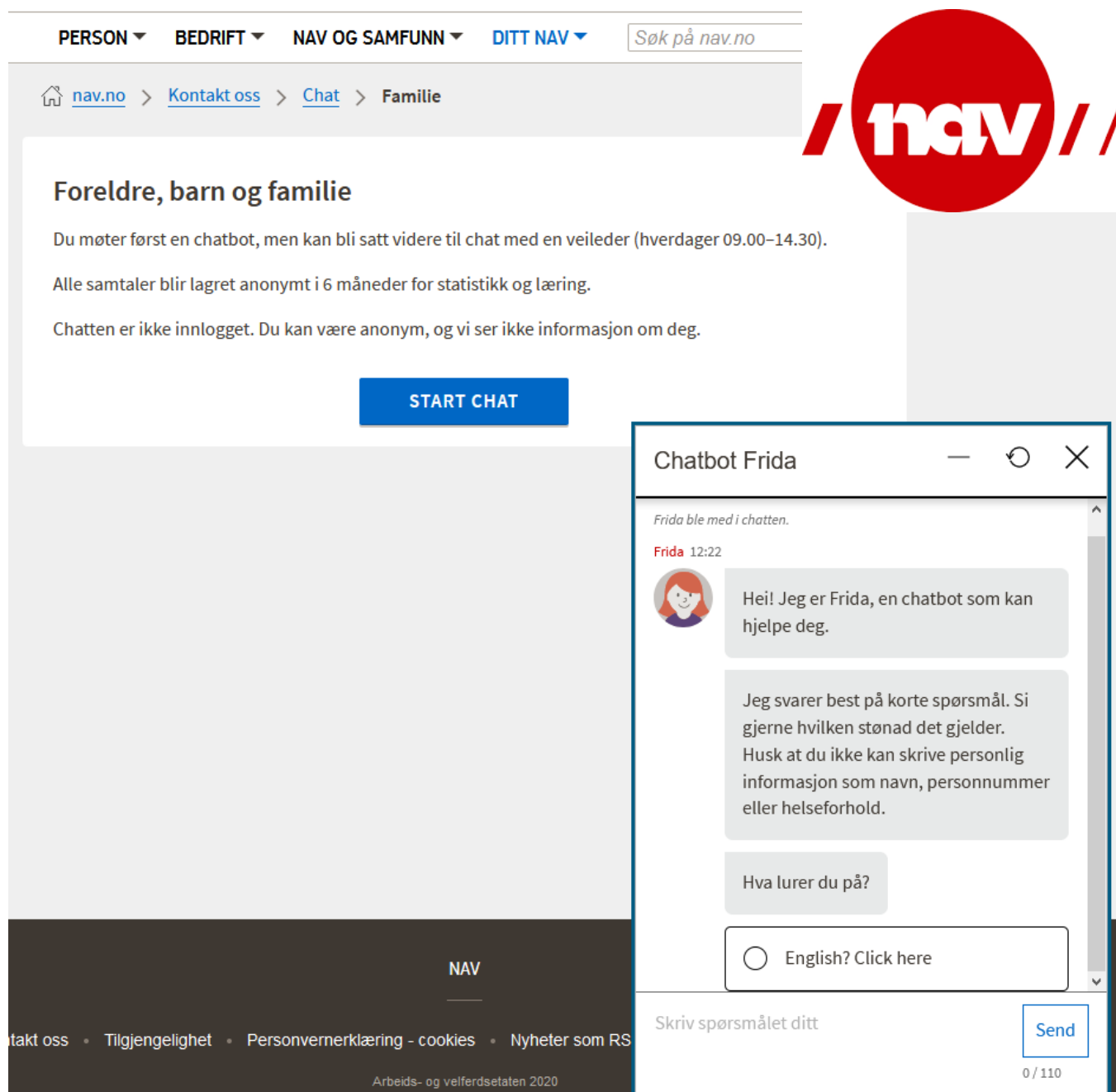
- 4.1 SOL - The advisor's workplace
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- 4.5 The callers
- 4.6 The call



*Example 5.2.1: The caller says that she will retire this month. She has talked with a SOL advisor last Friday, and she has received a form for changing her tax card. She needs help to fill it in. "What is included as income? What goes into entry 5.1?" Kathrine explains that costs for refinancing are deductible. The caller has more money in the bank, and Kathrine explains that she will need to check the value of her car; perhaps she has higher interest incomes now, and she will also need to check "other income". The caller says "This is not so easy; I would not have managed it without you". (20111017-16)*

## Chapter 5. Into the telephone calls

# Case 3 Chatbot in NAV



PERSON ▾ BEDRIFT ▾ NAV OG SAMFUNN ▾ DITT NAV ▾

nav.no > Kontakt oss > Chat > Familie

## Foreldre, barn og familie

Du møter først en chatbot, men kan bli satt videre til chat med en veileder (hverdager 09.00–14.30).

Alle samtaler blir lagret anonymt i 6 måneder for statistikk og læring.


Chatten er ikke innlogget. Du kan være anonym, og vi ser ikke informasjon om deg.

**START CHAT**

### Chatbot Frida

Frida ble med i chatten.

**Frida** 12:22

 Hei! Jeg er Frida, en chatbot som kan hjelpe deg.

Jeg svarer best på korte spørsmål. Si gjerne hvilken stønad det gjelder. Husk at du ikke kan skrive personlig informasjon som navn, personnummer eller helseforhold.

Hva lurere du på?

English? Click here

Skriv spørsmålet ditt

NAV

Kontakt oss • Tilgjengelighet • Personvernklæring - cookies • Nyheter som RSS

Arbeids- og velferdsetaten 2020 0 / 110

## Methods:

- Text analysis
- Interviews
- Observations
  
- Used theory and technical knowledge for the analysis

Linett Simonsen (2019) «Når brukerdialogen automatiseres – hva blir vanskelig? En kvalitativ studie av sekvensen av handlinger mellom menneske og maskin», Master thesis, Ifl, UiO

# From the chatbot log



Linett categorized the problematic chat examples:

- Language issues
- Weak chatbot understanding
- Weak domain understanding

She suggested improvements of different kinds:

- Preparing the users' expectations to the chatbot
- Adding synonyms
- Less antropomorphism
- Less text

# Married to a single mother



Hei! Jeg er Frida, en chatbot som kan hjelpe deg.

**Anna:** My name is Anna and I am a chatbot.

**Anna:** I am best adapted to answering short questions. Remember to include what type of benefit you are asking about.

**Anna:** How can I help you?

**Anna:** For English chat, click here (button)

**User:** can a young disabled person married to a foreign single mother receive child benefit and child supplement

**Anna:** If you are a single mother or father, you may be entitled to extended child benefit if you are living alone with children.

**Anna:** The extended child benefit is child benefit for one more child than what you actually are living together with.

**Anna:** You have to apply for an extended child benefit, it will not be automatically granted.

• Who is entitled to child benefit? (button)

<lists info about extended benefit>

**User:** Entitled to extended child benefit? (action)

**Anna:** If you are a single mother or father you can receive extended benefit if you are living alone with the child and:

• you are separated, divorced or widowed

<continues to list criteria for extended benefit>

**Anna:** If you do not have common children with the person you are living with, we do not need documentation that you are not living together. It could be:

• Declaration of breakup

• Separation permit

• When does the right to extended child benefit expire? (button)

• Apply for extended child benefit (button)

• Shared child benefit (button)

**User:** When does the right to extended child benefit cease? (action)

**Anna:** Extended child benefit will cease if:

• You marry

• You have children with a new cohabitant

• You have been cohabitant with a person you do not have joint children with for twelve months

• You move together with the father of the child

**User:** can a foreign single mother receive child benefit and child supplement

**Anna:** If you are a single mother or father, you may be entitled to extended child benefit if you are living alone with children.

**Anna:** <lists criteria for extended benefit>

**User:** Payment (action)

**Anna:** Child benefit will be paid out the last day of the week each month. Child benefit is not liable to tax.

**Anna:** Remember that you can see your payments from LWA by logging into 'Your LWA'.

**Anna:** At <LWA website> you can find an overview of payment dates for child benefit.

<lists payment info>

**User:** Can foreign single mother receive child supplement

The chatbot does not respond to the mismatch between “married” and “single mother”.

**“I’m disabled and married to a foreign single mother”.  
Public service chatbot’s advice on citizens’ complex lives**

Linett Simonsen<sup>1</sup>, Tina Steinstål<sup>1</sup>, Guri Verne<sup>1</sup> and Tone Bratteteig<sup>1</sup>

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**Abstract.** This paper describes a study of citizens’ chats with a chatbot of a public agency. We have analyzed chat logs and identified citizens’ lack of domain knowledge as a source of inadequate or failed chatbot responses. We identify three types of lack of domain knowledge: lack of the right vocabulary, uncer-

Simonsen L., Steinstål T., Verne G., Bratteteig T. (2020) “I’m Disabled and Married to a Foreign Single Mother”. Public Service Chatbot’s Advice on Citizens’ Complex Lives. In: Hofmann S. et al. (eds) Electronic Participation. ePart 2020. Lecture Notes in Computer Science, vol 12220. Springer, Cham.



## Verne et al.: How Can I Help You?

User	Chatbot		Comments and interpretation	
	Mechanisms	The chatbot's response		
Actions available to the chatbot	Internal representation	Root intent / predicted intent		
			<p>My name is Anna and I am a chatbot. I am best adapted to answering short questions. Remember to include what type of benefit you are asking about.</p> <p>How can I help you?</p> <ul style="list-style-type: none"> <li>• For English chat, click here (button)</li> </ul>	Anna's standard opening phrase.
<i>Going to have a child, what do I have to apply for?</i>	shall have child what must myself apply if	Unknown	<p>Sorry, but I do not understand what you are asking. I will understand you better if you write short questions and include which benefit it is about. Can you try to ask the question in a different way?</p> <ul style="list-style-type: none"> <li>• Need more help (button)</li> <li>• No (button)</li> </ul>	This user expresses a need for information and makes a first formulation of the need without keywords from the welfare domain. We interpret this request to be on level Q2. Anna cannot predict an intent for the question, and a fallback message is generated which encourages the user to make another attempt.
<i>How do I get money when I am expecting a child?</i>	how get myself cash when myself wait child	Payment / Payment date	<p>The day on which the payment is transferred depends on the benefit in question. You can see the payments from WA on Your payments on WA's website, but they will not be displayed until they have been credited to your account.</p> <ul style="list-style-type: none"> <li>• Overview payout dates (button)</li> <li>• Overview Payout (button)</li> <li>• Not received money (button)</li> </ul>	The user reformulates the question, and Anna's ML manages to predict an intent for it. The response does, however, not answer the user's original question. We interpret this as Q3 as the user's request is reformulated but does not give a relevant answer.

The chatbot does not give a satisfactory answer after two attempts from the user.

## How Can I Help You?

### A chatbot's answers to citizens' information needs

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[tone@ifi.uio.no](mailto:tone@ifi.uio.no)

**Abstract.** AI-based chatbots are becoming an increasingly common part of the front line of public services. Through natural language, users can write simple queries to a chatbot which answers with appropriate information. We have investigated how a public chatbot operates in actual practice and how it answers the citizens' questions about the rules and regulations for welfare benefits. We use the concept of citizens' information needs to determine the quality of the chatbot's answers. Information needs are often not formulated from the start as answerable questions. We analyse logs from chat sessions between the chatbot and the citizens, and focus on problems that arise, e.g., that the chatbot gives irrelevant answers or omits important information. The paper shows how the inner workings of the chatbot shapes the answerable questions. We conclude that responsible use of AI (such as chatbots) is a matter of design of the overall service and includes acknowledging that the AI itself can never be responsible.

**Key words:** chatbot, citizens, information needs, human-machine interaction, transparent, responsible AI.

# CASE STUDY RESEARCH

- Figure out what is important about the case within its own world: its own issues, contexts, and interpretations, its “thick description”<sup>1</sup>
- Focus on the case and its activities and functioning + its contexts (social, cultural, economic, legal, political, historical)
- What is going on? – What can be learned from the case?
- Be reflective: think about what you encounter. Dig into meanings, relate them to contexts and experiences. Revise.
- Seeking the particular more than the ordinary



(Stake 2005)

1) Clifford Geertz is one of the founding fathers of this notion by which is meant that ethnographic accounts should include contexts to fully capture and lay bare a case.

# Talk in groups

Do you have experience with a thick description?

How can you make a thick description in your master project?

# CASE STUDY RESEARCH

When probing the particular and common (but mostly the uncommon) of a case, take into account and gather material on:

- The nature of the case, particularly its activity and functioning
- Its historical background
- Its physical setting
- Other contexts, such as social, economic, political, legal and aesthetic
- Other cases through which this case is recognized, and
- Those informants through whom the case can be known

(Stake 2005:447)



# SELECTING A CASE

- Learn from atypical cases
- Gives opportunity to learn
- Accessible cases
- Possibility to stay long
- Strategic choice of case

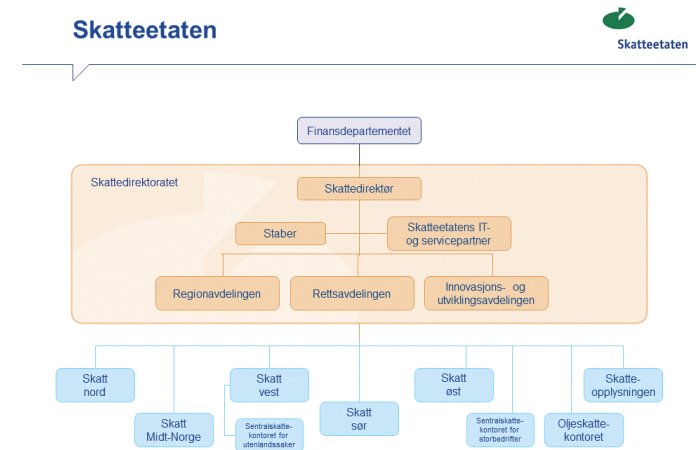
It is ok to be  
pragmatic

(Stake 2005, Flyvbjerg 2011)



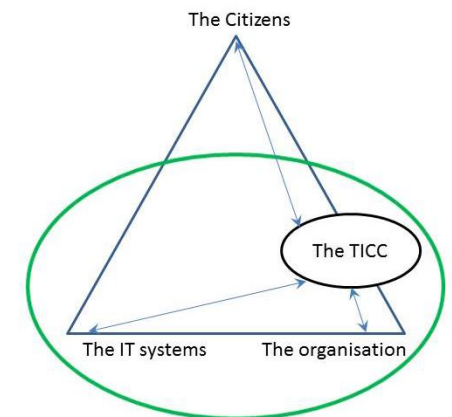
# DESCRIBING THE CASE 1

- Report the collection of field data
  - The research sites
  - The reason for this choice
  - The number of people interviewed
  - Their positions
  - Other data sources
  - Over what period
- How the iterative process between field data and theory took place and evolved (Walsham 2002)



Tax advisors	6
SOL Managers	2
Employees in other units of the Tax Administration, working with their web, IT, or usability	6
Employees in an NGO	1
Sum interviews:	15

Table 1: Number of interviews with various groups inside and outside of the Tax Administration.



## DESCRIBING THE CASE 2

- Converge data from multiple sources
- Chronological report, a story or address issues (Baxter and Jack 2008)
- Good narratives express complexities of real life
- Details, not general conceptualizations (Flyvbjerg 2011)
- “Present a coherent point of view with grace, wit and felicity” (Van Maanen 1989, p 32)



# ISSUES TO CONSIDER

- Bounding the case, conceptualizing the object of study
- Selecting phenomena, themes, issues (i.e. the research questions to emphasize)
- Seeking patterns of data to develop issues
  - Data collection and analysis occur concurrently
- Triangulating for clarification and diversity
- Selecting alternative interpretations to pursue
- Developing assertions about the case

(Stake 2005)

- Generalizations – the black swan
- What is this case a case of?

(Flyvbjerg 2011, p. 12)





# Literature not listed on syllabus

Simonsen L., Steinstø T., Verne G., Bratteteig T. (2020)  
“I’m Disabled and Married to a Foreign Single Mother”.  
Public Service Chatbot’s Advice on Citizens’ Complex Lives.  
In: Hofmann S. et al. (eds) Electronic Participation. ePart 2020.  
Lecture Notes in Computer Science, vol 12220.  
Springer, Cham.

Verne, Guri B.; Steinstø, Tina; Simonsen, Linett; and Bratteteig, Tone (2022) "How Can I Help You? A chatbot’s answers to citizens’ information needs," Scandinavian Journal of Information Systems: Vol. 34: Iss. 2, Article 7.