Research Methods & Technical Writing

Lesson 11 - Week 11

Qualitative research in Information Systems

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Flashback from Lesson 10

- Data analysis summarizes collected data. It involves the interpretation of data gathered through the use of analytical and logical reasoning to determine patterns, relationships or trends.
- The four types of data analysis are descriptive analysis, diagnostic analysis, predictive analysis, and prescriptive analysis.
- Data analysis aims to bring order and structure to data by manipulating, summarizing, and reducing it to an interpretable form. It helps to uncover the patterns in the data. Data interpretation aims to execute and apply processes that assign meaning to these discovered patterns by analyzing data. It draws statistical conclusions, infers the relationships and implications.
- The steps to write a report are: gather data and information, analyze the data, outline the report structure, write the report, format and present the report, review and edit the report, and finalize the report
- Reports can be categorized as business reports, academic reports, technical reports, feasibility reports, progress reports, incident reports, and analytical reports

Content

- Introduction
- Action research
- Case study research
- Other methods

Part 1

Introduction

Introduction

- We have defined qualitative as well as quantitative research in earlier lessons in this course. By now it is expected that the learner is conversant with qualitative approach as well as quantitative approach.
- Nonetheless, we have described all the different approaches and designs from different background settings; mostly from a social sciences perspective.
- In this lesson we examine qualitative research mostly from an Information Systems (IS) or Management Information Systems (MIS) perspective. NIST SP 800-59 defines an information system as "a discrete set of information resources organized for the collection, processing, maintenance, use, sharing, dissemination, or disposition of information."
- There are different types of IS and these can be categorized as knowledge work systems (KWS), MIS, decision support systems (DSS), office automation systems (OAS), transaction processing systems (TPS), and executive support systems (ESS). Further descriptions of these types are available in literature; however, (Jaiswal, 2022), provides a good summary.

Introduction

- Cook (as cited by Singh, 2006) reminds us of the characteristics of research:"
- 1. It is an honest and exhaustive process.
- 2. The facts are studied with understanding.
- 3. The facts are discovered in the light of problem. Research is problem-oriented.
- 4. The findings are valid and verifiable.
- 5. Research work should contribute new knowledge in the field studied."
- Further, Singh (2006) points out the following common characteristics regarding different definitions of research found in literature: "
- (*i*) Research arise for contributing new knowledge by studying some problem
- (*ii*) Research is objective and scientific process for studying the problems in a discipline."

Introduction

- In the field of IS (and by extension MIS) the approach to research is mostly dependent on the problem being studied; both qualitative and quantitative approaches have been used to solve different problems.
- This lesson focuses on qualitative approaches in IS. Four common approaches used are:
  - Action research
  - Case study research
  - Ethnography
  - Grounded theory
- These are discussed in the remaining parts of this lesson.

Part 2

Action research

2.1 Origins/history

- Action research has mostly been associated with the social sciences and more specifically, education. Thus a lot of literature describes this approach from an education domain background. However, it is not restricted to this domain only.
- Most literature cite Kurt Lewin as the originator of action research. However, Masters (1995) describes how available literature indicates that there were other social scientists before him who used this method such as Collier in 1945.
- Lewin coined the term action research from his paper written in 1946 "Action Research and Minority Problems" and stated as follows: "The research needed for social practice can best be characterized as research for social management or social engineering. It is a type of action research, a comparative research on the conditions and effects of various forms of social action, and research leading to social action" (Lewis, as cited in https://raggeduniversity.co.uk/2019/07/13/history-of-action-research/, accessed 05/06/23).

2.1 Origins/history

- (Myers & Avison, 2002/2007) observe that action research in IS has been used mostly outside North America, and speculate on reasons for this. However, they observe the following:"
- Checkland's soft systems methodology (Checkland and Scholes, 1990; Checkland, 1981) has influenced IS research by linking action research and systems development. This has increased the presence of action research in British, Scandinavian and Australian IS literature. However, action research is not a predominant IS research method even in those geographic areas…
- Critical reviewers have revealed serious doubts about the appropriateness of research into IS. Jarvenpaa, Dickson et al. (1985) found that experimental IS research was lacking in task and measurement validity. Ives and Olson (1984) found that IS survey research suffered from poor instruments and lack of control. Baroudi and Orlikowski (1989) found a general lack of statistical power in IS research. Benbasat, Goldstein et al. (1987) noted that IS case study investigators had a history of ignoring methodological issues, and a failing to specify clear objectives. Cooper (1988) pointed to underlying problem in the natural sciences paradigm currently associated with IS research and suggested the adoption of methodological pluralism. "

2.1 Origins / history

- Masters (1995) describes the following 5 Movements that have had historical and philosophical influences on action Research:"
- 1. The Science in Education Movement of the nineteenth and early twentieth century in which the scientific method was applied to education, notably in the work of Bain (1979), Boone (1904) and Buckingham (1926) (McKernan 1991:8).
- 2. The Experimentalist and Progressive educational work, especially of John Dewey, "who applied the inductive scientific method of problem solving as a logic for the solution of problems is such fields as aesthetics, philosophy, psychology and education" (McKernan 1991:8).
- 3. The Group Dynamics movement in social psychology and human relations training. This movement was used in the nineteenth century to address the social problems of this era through qualitative social enquiry…

2.1 Origins/ history

- 4. Post-war Reconstructionist Curriculum Development Activity. Action research in education was utilised in this era as "a general strategy for designing curricula and attacking complex problems, such as inter-group relations and prejudice through large curriculum development projects…
- 5. The teacher-researcher movement. This movement originated in the UK, with the work of Stenhouse (1971, 1975) and the Humanities Curriculum Project. Stenhouse felt that all teaching should be based upon research, and that research and curriculum development were the preserve of teachers…"

2.2 Definition

- Carr and Kemis (as cited in (Hong Kong university of science and technology, n.d.) describe action research as: “
- It can be argued that three conditions are individually necessary and jointly sufficient for action research to be said to exist: firstly, a project takes as its subject-matter a social practice, regarding it as a form of strategic action susceptible of improvement; secondly, the project proceeds through a spiral of cycles of planning, acting, observing and reflecting, with each of these activities being systematically and self-critically implemented and interrelated; thirdly, the project involves those responsible for the practice in each of the moments of the activity, widening participation in the project gradually to include others affected by the practice, and maintaining collaborative control of the process.”
- Other definitions are cited in the literature by Singh (2006): “
- Action research is a process for studying problem by part-owners scientifically to take decision for improving their current practices. (Corey)
- Action Research is organized, investigative activity, aimed toward the study and constructive change of given endeavor by individual or group concerned with change and improvement. (McTherte).”

2.3 Characteristics

- Singh (2006) also describes the characteristics of action research as follows:”
- 1. It is a process for studying practical problems of education.
- 2. It is a scientific procedure for finding out a practical solution current problems.
- 3. The practitioner can only study his problems.
- 4. The faces is to improve arid modify the current practices.
- 5. The individual and group problem is studied by action research.
- 6. It does not contribute in the fund of knowledge.
- 7. It is personal research.”

2.4 Description

- Singh (2006) describes the six steps of the research process as: "
- **1. Selection of problem. -** The problem is selected and defined.
- **2. Formulation of Hypotheses. -** Some active solutions are given for the problem. When these solutions are based on certain rationale they are termed as hypotheses.
- **3. Design of research (Sampling and methodology). –** The appropriate method and techniques are selected for this purpose.
- **4. Collection of Data (Administration of tool and scoring). -** The research tools are administered on the sample subjects and their responses are scored out.
- **5. Analysis of data (Use of statistics). -** The appropriate statistical techniques are used to analyze the data so that some decision may be taken about the hypotheses. The result is used to draw some conclusions.
- **6. Formulation of conclusions. -** The result is discussed and some conclusions for the practical problems."
- These steps should be familiar to us at the stage of the course, and this type of research is generally known as fundamental research.

2.4 Description

- However, the steps used in action research differ, and are discussed in literature. We describe these using literature provided by Myers and Avison (2002/2007) as they are more focused on the IS environment.
- Susman and Evered, (1978, as cited by Myers and Avison, 2002, 2007) details a five phase, cyclical process which can be described as an 'ideal' exemplar of the original formulation of action research. This process starts with the establishment of a client-system infrastructure, followed by 5 phases which are iterated, namely:
  - (1) diagnosing,
  - **(2)** action planning,
  - **(3)** action taking,
  - **(4)** evaluating and
  - ***(5)*** specifying learning
- These steps are captured in figure 1 and explained in the following slides.

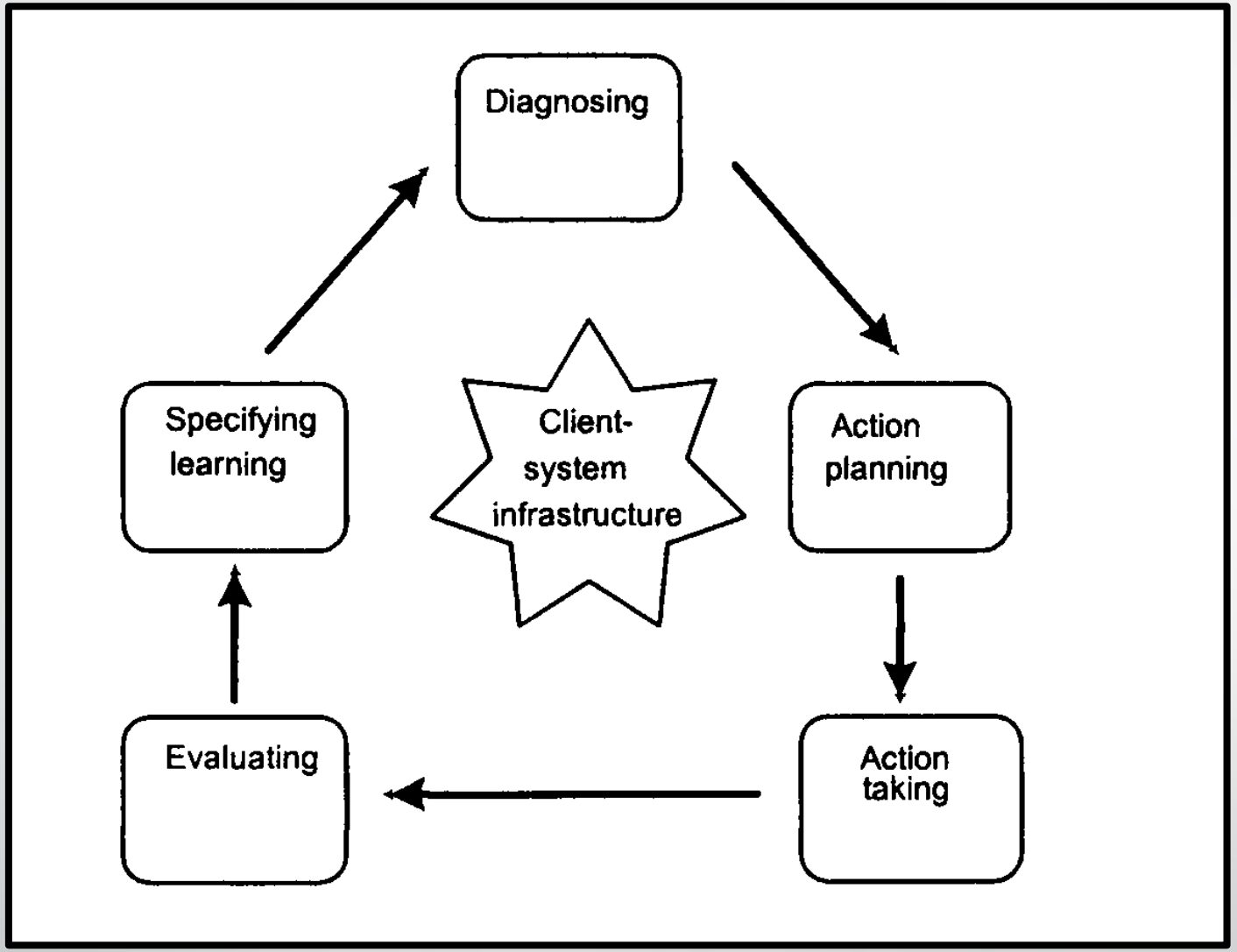

Fig 1. The action research cycle (Susman, 1983, as cited by Myers and Avison, 2002, 2007)

2.4 Description

- Myers and Avison (2002, 2007) describe the cycle and its components as follows:
- Client-system infrastructure: this is also known as the research environment. It "is the specification and agreement that constitutes the research environment. It provides the authority, or sanctions, under which the researchers and host practitioners may specify actions and provides the legitimation of those actions as beneficial to the client or host organization… It must also patently recognize the latitude of the researchers to disseminate the learning gained in the research. This infrastructure must define the responsibilities of the client and the researchers to each other."
- Diagnosing: Diagnosing corresponds to the identification of the primary problems that are the underlying causes of the organization's desire for change. This involves self- interpretation of the complex organizational problem, not through reduction and simplification, but rather in a holistic fashion. This diagnosis will develop certain theoretical assumptions (that is, a working hypothesis) about the nature of the organization and its problem domain.

2.4 Description

- Action planning: this step is a collaboration between the researchers and the practitioners. This step specifies organizational actions that should relieve or improve these primary problems. The discovery of the planned actions is guided by the theoretical framework, which indicates both some desired future state for the organization, and the changes that would achieve such a state. The plan establishes the target for change and the approach to change
- Action taking: this phase implements the planned action. The researchers and practitioners collaborate in the active intervention into the client organization, causing certain changes to be made. Several forms of intervention strategy can be adopted. For example, the intervention might be directive, in which the research 'directs' the change, or non-directive, in which the change is sought indirectly. Intervention tactics can also be adopted, such as the recruiting of intelligent lay persons as change catalysts and pacemakers.

2.4 Description

- Evaluating: in this phase the outcomes are evaluated. This includes a determination of whether the theoretical effects of the action were realized, and whether these effects relieved the problems. Where the change is successful, the evaluation must critically question whether the undertaken action, among the myriad routine and non-routine organizational actions, was the sole cause of success. Where the change is unsuccessful, some framework for the next iteration of the action research cycle (including the adjustment of the hypotheses) should be established.
- Specifying learning: this is normally an ongoing process. "The knowledge gained in the action research (whether the action was successful or unsuccessful) can be directed to three audiences. First, what Argyris and Schon (1978) called 'double-loop learning', the restructuring of organizational norms to reflect the new knowledge gained by the organization during the research. Second, where the change was unsuccessful, the additional knowledge may provide foundations for diagnosing in preparation for further action research intervention. Finally, the success or failure of the theoretical framework will provide important knowledge to the scientific community faced with future research settings."

2.4 Description

- Myers and Avison (2002, 2007) quote Hult and Lennung (1980), who summarized this process with their meticulously developed definition of action research: “
- Action research simultaneously assists in practical problem-solving and expands scientific knowledge, as well as enhancing the competencies of the respective actors, being performed collaboratively in an immediate situation using data feedback in a cyclical process aiming at an increased understanding of a given social situation, primarily applicable for the understanding of change processes in social systems and undertaken within a mutually acceptable ethical framework.”
- We are left with a lingering question though, aren’t we? How does action research differ with fundamental research? Table 1 summarizes the differences

Table 1(a). Difference between action research and fundamental research.

Source: https://www.slideshare.net/ShubhamNandi1/action-research-fundamental-research

Basis	Fundamental research	Action research
Objectives	Develop and test educational theories	Find solutions to specific problems in a given situation
Training	Superior training is required in research methodology	Limited training is required
Selection of a problem	Wide study is done to select a problem	Problems are identified by teachers in teacher learning process
Hypothesis	Highly specific hypothesis is formed	Action hypotheses are developed
Review of literature	Extensive and thorough study of literature	No such thorough review is needed

Table 1(b). Difference between action research and fundamental research.

Source: https://www.slideshare.net/ShubhamNandi1/action-research-fundamental-research

Basis	Fundamental research	Action research
Sample	Large sample size is required	Teacher takes the students of a class as a sample
Analysis of data	Complex analysis is done	Very simple analysis is done
Conclusions	In form of developing theories or generalization	In form of specific results
Application of results	Generalizations have broad applicability	Results are implemented in classroom situations to see the outcome

2.5 Advantages

- (Admin, 2022) describes the following advantages of action research: “
- It encourages folks who haven’t been involved in research to show an interest in it.
- Instead of being passive objects, it describes people as active participants.
- Participation in groups fosters motivation and maintains interest.
- The participants can relate to the research’s focus.
- The research findings are being tracked alongside the actions in order to provide timely feedback.
- It is a suitable and acceptable strategy for use in social and medical contexts…

2.5 Advantages

- Making sure your company research is practically applicable is one of the key benefits of conducting action research. Action research can help to improve the effect and reputation of business research within the business community since it involves engaging with individuals in business organizations.
- It helps participants and researchers to be self-aware.
- The conclusions from this study might be useful in other, comparable locations and circumstances."
- (Dudovskiy, 2011) further adds the following advantages:"
- High level of practical relevance of the business research;
- Can be used with quantitative, as well as, qualitative data;
- Possibility to gain in-depth knowledge about the problem."

2.6 Disadvantages

- (Admin, 2022) describes the following disadvantages of action research: “
- The difficulty of doing action research is one of its key drawbacks.
- Its nature and definition are not well defined.
- Generalizing conclusions beyond the local situation may not be valid.
- It could take a lot of time for little reward.
- Such projects may run across professional, and cultural barriers.
- The ethical problems need to be managed and addressed carefully.”
- (Dudovskiy, 2011) further adds the following disadvantages:”
- Difficulties in distinguishing between action and research and ensure the application of both;
- Delays in completion of action research due to a wide range of reasons are not rare occurrences
- *Lack of repeatability and rigor” – this can be overcome using the action research cycle (see figure 1).

2.7 Quality guidelines

- (Dudovskiy, 2011) alluded to the challenges of rigor in his observations regarding the disadvantages of action research. The best way to overcome this challenge is to adopt quality guidelines using characteristic strategies as described by Myers and Avison (2002, 2007). These guidelines are as follows:
- Consideration for the paradigm shift - Action research does not occur in the traditional positivist philosophy of science and has its own domain of ideal research questions. Is action research appropriate for the question (for example, immediately relevant methodology or theory- formulation)?
- Establishment of a formal research agreement - The ethics of human subjects research discourage research without the 'informed consent' of the subject. This implies that conducting action research under the disguise of consulting would be unethical. This means that it is important to establish a formal research agreement with all the necessary documentations and approvals.

2.7 Quality guidelines

- Provision of a theoretical problem statement - One of the most important differences between the diagnosis stage of an action research project and the advice stage of a consulting project is the careful theoretical foundation of diagnoses. The theoretical foundation must be present as a premise if the experiment (the intervention action) is to remain valid as research. Therefore the diagnosis document should include a scholarly statement of the theoretical underpinnings of the diagnosis.
- Planned measurement methods - Action research is certainly empirical, although the collected data may be very unstructured. Rigorous action researchers plan methodical data collection methods. This is critical for credibility since it is ultimately impossible for the researchers to sustain claims of validity in their data analysis if the data cannot be produced for examination.
- Maintain collaboration and subject learning - Another characteristic strategy of rigorous action research is the careful nurturing of collaboration with subjects. The subjects may well have key knowledge that is critical to the discovery of important aspects of the theory under test. Rigorous action researchers avoid dominating the diagnosis and action planning phases (that is, assuming the authoritative role of the external consultant).

2.7 Quality guidelines

- Promote iterations - Action research is also characteristically cyclical. The research data should record the repetitive planning, taking and evaluating of organizational actions. In this environment action failures (in terms of the immediate problem situation) are as important as action successes. Rigorous action research cannot disguise negative effects of some actions, as these may provide richer learning than the positive effects. The cycles will continue until the immediate problem situation is relieved.
- Restrained generalization - Action research, being naturally idiographic, presents researchers with a serious conflict regarding any generalization from the project findings. Generalizations should therefore be made cautiously, or avoided altogether.

Part 3

Case study research

3.1 Introduction

- Before describing what case study research entails or is, it is important to first understand what a case study is, as well as the different types of case studies. Let us sample a few definitions from different domains:
- "Case studies are in-depth investigations of a person, group, event, or community. Typically, data is gathered from various sources and by using several different methods (e.g., observations & interviews)…The case study is not itself a research method, but researchers select methods of data collection and analysis that will generate material suitable for case studies." (Mcleod, 2019) – from a medical background.
- "A case study is an in depth study of a particular situation rather than a sweeping statistical survey. It is a method used to narrow down a very broad field of research into one easily researchable topic…Whilst it will not answer a question completely, it will give some indications and allow further elaboration and hypothesis creation on a subject." (Shuttleworth, 2019) – from a social science background.

3.2 Categories

- There are broadly three categories of case studies. These are described in (Dudovskiy, 2010):"
- **Explanatory case studies** aim to answer 'how' or 'why' questions with little control on behalf of researcher over occurrence of events. This type of case studies focus on phenomena within the contexts of real-life situations. Example: "An investigation into the reasons of the global financial and economic crisis of 2008 – 2010."
- **Descriptive case studies** aim to analyze the sequence of interpersonal events after a certain amount of time has passed. Studies in business research belonging to this category usually describe culture or sub-culture, and they attempt to discover the key phenomena. Example: "Impact of increasing levels of multiculturalism on marketing practices: A case study of McDonald's Indonesia."
- **Exploratory case studies** aim to find answers to the questions of 'what' or 'who'. Exploratory case study data collection method is often accompanied by additional data collection method(s) such as interviews, questionnaires, experiments etc. Example: "A study into differences of leadership practices between private and public sector organizations in Atlanta, USA."

3.3 Contributions

- Olson (as cited by Singh, 2006) outlines six contributions of case study approach to general knowledge, as follows:"
- 1. Tabulation of case under significant categories as a means of communication to professional workers, the nature of the problems involved, for example, classification of the cases referred to a bureau of juvenile research in items of source of reference, age, sex, race, problem, intelligence, school grade, economic status, and interrelations between certain factors.
- 2. Evaluation of programme by studying the subsequent history of the person affected; for example, to follow up habit-clinic children who manifested delinquency problems before the age of ten years, through securing judgements on improvement from parents, teacher, hospital and agency.
- 3. Study of social and institutional group patterns existing in families, classes, schools and communities.

3.3 Contributions

- 4. Provision of case materials for institutional purposes in professional courses.
- 5. Illustration and validation of statistical result, as in supplementing statistical findings on twin resembles by detail case histories.
- 6. Formulation of generalizations on the basis of the body of knowledge that results through accumulation of published reports of cases of particular types, as in medicine and in certain social, psychological, and educational areas."
- Lee, in Myers and Avison (2002, 2007) also observes that there has been a strong case study tradition in the academic field of MIS, citing several works "((Benbasat et al., 1987; Fulk and Dutton, 1984; Kling, 1978b; Kling and Iacono, 1984; Kling and Scacchi, 1982; Kraemer et al., 1987; Laudon, 1974; Leonard-Barton, 1987; Markus, 1983; Markus, 1986)".

3.4 Objectives

- Singh (2006) describes the following as the objectives of case studies:
- 1. Clinical purpose, (for example, dealing with a patient; when case studies are used in clinical environments such as psychology they are mostly applied to individuals rather than groups).
- 2. Diagnostic purpose, (for example, educational situation to provide the remedial instruction to poor students).
- 3. Fact-findings about psychological or educational problems, as well as problems that may exist in organizational boundaries encompassing the MIS.
- 4. Supplementing other information. It may be a follow up work.

3.5 Types

- While most literature uses the term ‘type’ and ‘category’ interchangeably, the types of case studies can be generalized as being fourfold:
- **Illustrative Case Studies**
  These are primarily descriptive studies. They typically utilize one or two instances of an event to show what a situation is like. Illustrative case studies serve primarily to make the unfamiliar familiar and to give readers a common language about the topic in question.
- **Exploratory (or pilot) Case Studies**
  These are condensed case studies performed before implementing a large scale investigation. Their basic function is to help identify questions and select types of measurement prior to the main investigation. The primary pitfall of this type of study is that initial findings may seem convincing enough to be released prematurely as conclusions.

3.5 Types

- **Cumulative Case Studies**
  These serve to aggregate information from several sites collected at different times. The idea behind these studies is the collection of past studies will allow for greater generalization without additional cost or time being expended on new, possibly repetitive studies.
- **Critical Instance Case Studies**
  These examine one or more sites for either the purpose of examining a situation of unique interest with little to no interest in generalizability, or to call into question or challenge a highly generalized or universal assertion. This method is useful for answering cause and effect questions.
- (Source : https://wac.colostate.edu/repository/resources/writing/guides/casestudies/, accessed 05/06/2023)

3.5 Types

- Singh (2006) describes six types of case studies:
- 1. A group or a community case study,
- 2. Causal comparative studies,
- 3. Activity analysis.
- 4. Content or document analysis - Content analysis, sometimes known as document analysis. deals with the systematic examination of current records or documents as sources of data.
- 5. A follow-up study - investigates individuals who have left and institution after having completed a program, a treatment or a course of study, to know what has been the impact of the institutions and its program upon them
- 6. Trend studies – this is a study indicating what has been happening in the past, what does the present situation reveal and on the basis of these data, what will be likely to happen in the future.

3.6 Challenges

- In this part we describe the challenges of MIS case studies as compared to other domains; Lee in Myers and Avison (2002, 2007) describes the challenges (problems) as follows: "
- Problem I:Making controlled observations - The first problem concerns how to make controlled observations…the study of a real-world MIS in its real-world setting precludes, by its very nature, the laboratory controls of laboratory experiments, and (2) the study of a single case commonly yields more variables than data points -a situation that renders inapplicable the statistical controls of statistical experiments.
- Problem 2: Making controlled deductions - The second problem concerns how to make controlled deductions. Making controlled or logical deductions with mathematical propositions as is commonly done in the natural sciences is a standard, non-controversial practice. However, since it is rare (though certainly not undesirable) for a case study to be quantitative, the MIS case researcher is typically denied the methodological convenience of working with numerical data and mathematically stated propositions. Instead, the case researcher must somehow manage with qualitative data and verbally stated propositions.

3.6 Challenges

- The third problem concerns how to allow for replicability. Research in the natural sciences is routinely replicated as a means of assuring the objectivity of the research. However, the MIS case researcher is unlikely to observe the same set of events -namely, the same configuration of individuals, groups, social structure, hardware, and software -unfold again in the same way.
- Problem 4: Allowing for generalizability The fourth and last problem concerns how to allow for generalizability. An often-admired quality of theories in the natural sciences is their applicability to a range of settings. (In this sense, theories in the natural sciences are said to be 'nomothetic', as opposed to 'idiographic'.) However, the fact that the study of a single case is marked by unique and non-replicable events would make the study vulnerable to charges that its findings cannot be extended to other settings.
- In his chapter Lee goes on to propose various ways by which these challenges can be overcome; however, these are outside the scope of this course.
- Table 2 presents potential pitfalls and corresponding mitigation measures in case study research.

- Table 2. Potential pitfalls and mitigating actions in case study research (Crowe et al., 2011)

Potential pitfall	**Mitigating action**
Selecting/conceptualizing the wrong case(s) resulting in lack of theoretical generalizations	Developing in-depth knowledge of theoretical and empirical literature, justifying choices made
Collecting large volumes of data that are not relevant to the case or too little to be of any value	Focus data collection in line with research questions, whilst being flexible and allowing different paths to be explored
Defining/bounding the case	Focus on related components (either by time and/or space), be clear what is outside the scope of the case
Lack of rigour	Triangulation, respondent validation, the use of theoretical sampling, transparency throughout the research process
Ethical issues	Anonymize appropriately as cases are often easily identifiable to insiders, informed consent of participants
Integration with theoretical framework	Allow for unexpected issues to emerge and do not force fit, test out preliminary explanations, be clear about epistemological positions in advance

3.7 Pros and cons

- (Cherry, 2022) describes potential pros and cons of case studies:
- **Pros:**
- Allows researchers to collect a great deal of information
- Give researchers the chance to collect information on rare or unusual cases
- Permits researchers to develop hypotheses that can be explored in experimental research
- **Cons:**
- Cannot necessarily be generalized to the larger population
- Cannot demonstrate cause and effect
- May not be scientifically rigorous
- Can lead to bias

Part 4

Other research methods

4.1 Other methods

- Other methods that may be used in IS worth mentioning include:
- Ethnography: Ethnographic research is a qualitative method where researchers observe and/or interact with a study's participants in their real-life environment. (Logan, 2017). Indeed, "Ethnographic research is one of the most in-depth research methods possible. Because the researcher is at a research site for a long time -and sees what people are doing as well as what they say they are doing – an ethnographer obtains a deep understanding of the people, the organization, and the broader context within which they work. Ethnographic research is thus well suited to providing information systems researchers with rich insights into the human, social, and organizational aspects of information systems." (Myers, 1999).
- Grounded theory:" Grounded theory is:
- a ***research method*** that will enable you to:
- develop a ***theory*** which
- offers an explanation about
- the main concern of the population of your substantive area and

  how that concern is resolved or processed." (Scott, 2015)

4.1 Other methods

- Grounded theory methods:
- "Grounded theory provides qualitative researchers with guidelines for collecting and analyzing data. Although there are "probably as many versions of grounded theory as there were grounded theorists" (Dey, 1999), all of the versions have the following aspects in common (Charmaz, 2006):
- Coding (labeling and categorizing) from collected data instead of relying on theories not grounded in data.
- Social processes are discovered in the data.
- Abstract categories are constructed inductively.
- Categories are refined using theoretical sampling.
- The gap between coding and writing is bridged with analytical memos.
- Categories are integrated into a theoretical framework.
- In order to say that your research is based in grounded theory you *must* follow the explicit, sequential guidelines. Employing just one or two methods does not make the study "grounded." (Glen, 2016c)

Summary

- The research needed for social practice can best be characterized as research for social management or social engineering. It is a type of action research, a comparative research on the conditions and effects of various forms of social action, and research leading to social action.
- Action Research is organized, investigative activity, aimed toward the study and constructive change of given endeavor by individual or group concerned with change and improvement.
- Action research cycle steps are: diagnosing, action planning, action taking, evaluating and specifying learning.
- A case study is an in depth study of a particular situation rather than a sweeping statistical survey. It is a method used to narrow down a very broad field of research into one easily researchable topic…Whilst it will not answer a question completely, it will give some indications and allow further elaboration and hypothesis creation on a subject.
- Ethnographic research is a qualitative method where researchers observe and/or interact with a study's participants in their real-life environment.
- Grounded theory is a ***research method*** that will enable you to develop a ***theory*** which offers an explanation about the main concern of the population of your substantive area and how that concern is resolved or processed."

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