

***The Value of the Case Study
as a Research Strategy***

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1.0 Introduction

One of the most time-honoured forms of communication and knowledge transfer is the narrative: The earliest abstract philosophical concepts were conveyed as allegorical accounts, either for the purpose of education or debate, and a scientific tradition was built around the testing of the premises which either supported or attacked the truth and validity of the implicit arguments made by these stories. Few would question the relevance of the case study, the modern equivalent of the allegory, as a basis for formulating hypotheses for further (quantitative) research, but many would contend, as Matthew Miles (1979) did in an Administrative Science Quarterly article titled '*Qualitative data as an attractive nuisance*' that research based upon case study was unlikely to transcend story-telling.

Is case study a valid research tool or is it constrained by insurmountable methodological handicaps? In the next few pages, we will consider the nature of the case study, in its various manifestations, the factors to be taken into consideration when designing case study research, and situations where the case study is an appropriate research tool.

Management studies and organizational theory rely heavily upon the case study as a form of data collection and even as a type of unstructured analysis: As a form of research, the case study is unparalleled for its ability to consider a single or complex research question within an environment rich with contextual variables. Observation, experiments, surveys and secondary information (archival) have the advantage of producing sets of independent and dependent variables suitable for quantitative analysis: The case study is best suited to considering the how and why questions, or when the investigator has little control over events. It has significant limitations, and misapplication can produce incorrect or inconsistent findings. Suitable design of the case study is critical if the common pitfalls of this research strategy are to be overcome.

2.0 What is a case study?

The case study is the most flexible of all research designs, allowing the researcher to retain the holistic characteristics of real-life events while investigating empirical events.

In general, a case study is an empirical inquiry which:

- * *investigates a contemporary phenomenon within its real-life context: when*
- * *the boundaries between phenomenon and context are not clearly evident; and in which*
- * *multiple sources of evidence are used.*¹

Yin, Robert K., Case Study Research: Design and Methods, 1984: Newbury Park, Sage Publications, page 23.

Case studies are only one of many ways of doing social science research, with experimentation, observation, surveys and archival information (as mentioned above) each suited to a certain type of research problem, degree of experimenter control over events and historical/contemporary perspective and focus.

What are case studies? By design, case studies usually take as their principal subject selected examples of a social entity within its normal context. At the simplest level, the case study provides descriptive accounts of one or more cases, yet can also be used in an intellectually rigorous manner to achieve experimental isolation of one or more selected social factors within a real-life context. Robert Yin tried to define a case study, as part of his defense of the method, as an attempt to examine:

- (a) *a contemporary phenomenon in its real life context, especially when;*
- (b) *the boundaries between phenomenon and context are not clearly evident.*²

Despite the popular misconception that case studies are limited to qualitative analysis they can use both qualitative and/or quantitative information.

In this section we will compare the use of case studies and other research methods, look at the different types of case studies, and the different types of case information used.

2.1 The case study vs other research strategies

As mentioned above, research design requires a choice of research strategy, a decision to use experimentation, survey methods, archival analysis, histories or case studies. Are all strategies equal, or is there is a hierarchy of methods?

The relative usefulness and application of case studies, indeed any type of 'qualitative' research is subject to interpretation. As mentioned earlier, critics of case research such as Miles³ (1979) suggested that the case study's usefulness is limited to an exploratory phase in a hierarchically arranged research programme. Proponents of wider application of case studies, such as Yin (1981) claim that the use of case studies is only limited by lack of understanding of the types of applications, the types of research questions best addressed (as opposed to other strategies) and the type of case study design. (Subsequent sections will discuss all of these issues)

Yin (1984) suggested that the three conditions could determine the type of research programme indicated: First, the type of research question; secondly, the degree of investigator control possible; and finally, the degree of focus on contemporary events desired. (vs historical events) Table 1 provides an outline of the relative performance of each type of research strategy under each condition:

Table 1
Relevant situations for different research strategies

Strategy	Form of research question	Requires control over behavioural events?	Focuses on contemporary events?
Experiment	how, why	yes	yes
Survey	who what, where, how many, how much	no	yes
Archival analysis	who what, where, how many, how much	no	yes/no
History	how, why	no	no
Case study	how, why	no	yes

'What' questions usually suggest that exploratory research is indicated, or may actually be rephrased as 'how many' or 'how much' questions. 'Who' and 'where' questions (or the derivative 'how many', 'how much') favour survey or archival research, and tend to describe incidents or phenomena with the goal of predicting outcomes.

'How' and 'why' questions are more explanatory by nature, and are likely to lead to the use of experiments, histories and case studies. These questions tend to deal with operational links which occur during a span of time, rather than the incidents or phenomena which occur at intervals over time. Defining the research question is the most important step in a research programme, especially since this indicates the type of research programme likely. The second criterion is the extent of control over behavioral events which the researcher can exercise.

Assuming that the 'how' and 'why' or 'who' and 'what' form has been determined, the degree of required control is the next most important variable. Histories are the preferred strategy when there is no practical form of control and the event or phenomenon occurred in the past: (since historians deal in the 'dead' past) If there is a high likelihood of focus on contemporary events, the case study is preferred. The researcher using case studies not only has the historian's primary and secondary documentation as resources, but can add direct observation and systematic interviewing: The case study's strength is thus its ability to deal with a full range of evidence - documentation, artifacts, interviews and observations.

As mentioned above, case studies can be classified into three categories: The exploratory (traditional form) the descriptive and the explanatory. A further description of the latter two follows.

2.2 Descriptive case studies

The hierarchical view of research outlined above suggested that case studies were useful for exploratory, or preliminary research, while surveys and histories were appropriate for a descriptive phase, and experiments were the only way of doing explanatory or causal research. Case studies may still serve as exploratory research, but the scope for application is much greater. Yin (1984) suggests that a more appropriate view would be a pluralistic one - Each type of research strategy could be used for all three purposes: Exploratory, descriptive and explanatory. (Bryman (1974) suggests that there may be an epistemological conflict with this assertion, as outlined below)

Descriptive case studies may be exploratory, if relatively little research has been done in the area, or they may be illustrative of aspects thought to be representative or typical: Both exploratory and illustrative aspects may be included in a single case study, with accent being on the typical.

Catharine Hakim (1987)⁴ classified descriptive case studies as typical, or selective: The typical, we have already introduced above. The selective case study may focus on a particular issue or aspect of behaviour with the objective of refining knowledge in a particular area, to provide a better understanding of causal processes. The selective case study may lead to questions about 'how' and 'why' issues or behaviour conspired to produce the resulting outcomes: This leads into explanatory evaluation.

2.3 Explanatory case studies

There is no exclusivity between exploratory, descriptive and explanatory case studies, in fact some of the best case studies are either exploratory and descriptive or descriptive and explanatory. (Yin cites William F. Whyte's *Street Corner Society* (1943) as an example of a case with excellent descriptive and explanatory qualities)

Once a body of research evidence has been accumulated, particular issues can be focused upon using selective case studies - Other data, provided by other forms of research such as surveys, can be corroborated and illustrated through more richly detailed and precise accounts. The value of the case study is measured by the degree to which the incidents discussed can be generalized to other situations.

A more rigorous application of the explanatory case study may try to isolate selected social factors or processes within the real-life context to provide a test of the existing explanations. Two special cases of the explanatory case study are used to test the 'how' and 'why' questions: The first is the critical or strategic case - The researchers seek to assess the evidence for a conclusion by looking at the most favourable illustration of a particular issue: Rosabeth Moss Kanter (1989) uses several strategic cases from American enterprise in her research to describe the new role of management.⁵

The opposite side of the critical case, the deviant case, seeks to upset the adage that the exception proves the rule, by showing how a general rule needs to be re-defined: If the rule isn't faulty, then at best it is only true in limited applications. Hakim (1987) uses the example of Union Democracy, (Lipset *et al.*, 1956) a case study illustrating the existence of a highly democratic union which seemed to disprove Michel's 'iron law of oligarchy'.

Case study designs and applications can vary widely: They may be used for either exploratory, descriptive or explanatory purposes, and may take either typical, critical or deviant approaches. To further compound the situation, they may be prepared by a wide variety of processes: The next section expands upon the use of single and multiple case studies.

2.4 Collection of data for case studies

The lack of a well defined, formalized methodology of case study research is, as we will see later, one of the key criticisms of this type of research. It is therefore especially important to understand the types of research activity proscribed for case study preparation, and the different types of approaches typically used.

Case studies usually follow one of two types of research methodology: They may be based upon the use of multiple sources of evidence: (multiple triangulation); they may be based upon review of multiple case studies.

Most case studies use at least two sources of data: Multiple sources, even multiple investigators and sites may be involved in the collection of interview, observation and administrative documents and performing structured surveys. Even single period case studies may cover a protracted period: Cases may be studied over a prolonged period or written at a single point and pursued at future points in time by follow-up case studies. Single or multiple-source case research may cover all of the forms of investigation used by any of the other research designs - It is even possible for experimental isolation to offer the potential benefits of experimental research. Yin (1984) describes cases with a single source of information as holistic cases, cases with multiple sources of information as embedded cases. He cautions that embedded cases may be mistakenly classified as holistic cases if a single source has identifiable sub-units - a holistic case design would logically only be used when it is impossible to identify sub-units, and when the relevant theory underlying the case study itself is of a holistic nature.

Case studies may either focus on a single case or use a number of cases: A single case may form the basis of research on typical, critical or deviant cases, while multiple cases may be used to achieve replication of a single type of incident in different settings, or to compare and contrast different cases. Multiple-subject case studies are especially useful if topics are too complex or involve too many actors to be addressed using a simple interview survey. Single case studies are analogous to single experiments, and as such are justified using the same arguments as the single experiment. The first rationale for the single case is that it represents the critical case in testing a well formulated theory; (the critical case is discussed above) the second may be that a single case may represent an extreme or unique case, worth

documenting and analyzing; the third rationale is the revelatory case: The revelatory case exists when a phenomenon not previously accessible to scientific investigation is revealed. Whitworth and Cheatham's (1988) *Appraisal of the Yonki Dam hydroelectric project* provides an example of a case where project appraisal may be manipulated by officials to fit development criteria: The existence of the manipulation is not as remarkable as the revelation of the techniques used to manipulate the process and the data.⁶

These two design parameters, the number of sources of data, and the number of cases studied, provide us with a two by two matrix of basic designs of case studies.⁷

Table 2
Basic types of design for case studies

	Single case designs	Multiple case designs
Holistic (Single unit of analysis)	Type 1	Type 3
Embedded (multiple units of analysis)	Type 2	Type 4

One class of technical criticism directed against the case study as a research strategy is related to the misapplication of one type of case study design when another is indicated. By understanding the usefulness and limitations of each type of design it is easily possible to overcome at least part of the reproach directed against the case study.

3.0 Justification for case study as a research strategy

This essay has thus far presented the case study as an alternate form of research strategy, suitable for investigation of contextually rich events or phenomena, especially those which:

may be queried using how or why questions; or where

the researcher can exercise little control; and

which focus on contemporary, rather than historic information.

Above, we discussed how proponents of the case study suggest that may be used for exploratory, descriptive or explanatory research strategies: Critics of the case study, and of 'qualitative' research in general criticise the case study as a research strategy on several levels.

3.1 Traditional criticisms of the case study

Criticism of the case study as a research strategy is often directed at many levels, from the most practical to the most abstract. In this section we will enumerate some of the most practical criticisms, in a subsequent section we will look briefly at the epistemological basis of the case study.

Many of the criticisms of the case study method relate to the highly labour intensive nature of this research strategy. Miles (1979) suggests that the added degree of energy required is responsible for generating much researcher stress, something that may be especially pronounced in the case of the lone fieldworker.

More energy is required at each stage of the research process to make the data collected systematically comparable with data collected using other strategies:

- at the observation stage, the researcher has to deal with the sheer range of phenomena encountered with other strategies;
- following the field work stage, the researcher has to collate and review the much larger recorded volume of notes; and,
- at the writing-up stage the researcher has to spend much more time determining what to write-up, how to code and analyze the data.

Critics claim that the process of preparing case studies takes too long and result in massive, unreadable documents or report only the researchers conclusions: The analysis and presentation of case study data requires more skill, hence more highly qualified (and scarce) researchers and is subject to more risk of researcher bias than other research strategies. Actors may provide inconsistent or conflicting accounts, because of either a desire to manipulate results or inconsistency of private and public opinions. (although these are inherent problems with more 'quantitative forms of research as well)

Harvey, Smith and Wilkinson (1984) saw three aspects of this problem in their case study-based research into managers and corporate policy:

- access to information
- different relevant actors had different values
- Inter-organizational political processes were important⁸

Miles (1979) suggested that one of the most serious criticisms is that unlike quantitative research, there are few conventions the researcher can rely upon to defend him/her self against self-delusion or the presentation of 'unreliable' or 'invalid' conclusions

'How can we be sure that an *"earthy, undeniable, serendipitous"* finding is not, in fact, *wrong?*'⁹

Critics also claim that there is little basis for scientific generalization - especially with single cases - Something also true of single experiments.

Finally, it has been noted that there are potential ethical issues - practical issues regarding the joint role of researcher and team member: An example of this type of quandary can be seen in Lupton (1963) where the investigator is (albeit openly) placed as an industrial worker, and is subjected to possibility of bias and personal idiosyncrasy.¹⁰

Some critics blame the fact that case study methods are not as well formulated as those related to other research strategies, especially the more quantitatively-founded ones like experimentation, for a perceived lack of rigour in method and execution. This lack of 'built-in rigour requires a more careful choice of research staff with appropriate skills and experience.

Critics suggest that the lack of defined methodology is lamentable, especially considering the very highly skilled and specialized task of interviewing of informants, professionals and role-holders.

Yin (1981) agrees to some extent that there are shortcomings in the methodology of case study research, but contends that these shortcomings are not innate, and represent opportunities for development within the research strategy, or even more importantly, recognition of methodological constructs which are already known.

Ultimately, the criticisms can be divided into practical (or methodological) and epistemologically categories. Yin claims that refinement and standardization of technique can correct the practical shortcomings, but what of the epistemological criticisms?

3.1 An epistemological basis for the case study

A philosophical justification of the case study research strategy underpins the argument about the methodological merits of this type of research strategy, or indeed, any type of qualitative research strategy. The dividing line between the methodological and epistemological arguments is indistinct, yet not perfectly correlated.

An epistemological base, one which considers the appropriate foundation for the study of society and its manifestations, provides the underlying philosophical basis for the arguments supporting the validity of a research strategy. Quantitative research is routinely depicted as linked to the positivist tradition of the natural sciences, with an objectivist, atomistic view of the world and science, and a fundamental view that reality is a concrete structure which can be defined and understood as a sum of its parts. Experimentation, based upon replication, causation, objectivity and definition is a minimum condition for the creation of knowledge.

Qualitative research begins from an ontological foundation that defines reality as some type of projection of imagination, the point of view of at least one actor, or at best a social

construction, which can be explored through a science of meanings, phenomenological insight and subjective processes.

These different assumptions about the constitution of knowledge mean that a clear consensus about what comprises a fact is impossible: A justification of qualitative research is not likely to succeed under positivist assumptions, and is thus linked to a subjective, phenomenological epistemological position. Under an empiricist/subjective theory of being, the views of actors, as communicated through case studies, is the empirical point of departure.

Of course, there are very few who occupy either of these polar positions, but rather, there is a spectrum of beliefs which span the epistemological spectrum: As a result, it is unlikely that there are many, even among the most hard-nosed positivists, who would deny any utility of qualitative research whatsoever: Similarly, among the most subjective empiricists one would expect to find a variety of 'quasi-statistical' methods.

If this is the case, is there really a clear distinction between qualitative and quantitative research? It seems that a line of demarkation may be set using Trow's dictum that problems determine methods.¹¹ An example of application of this dictum is provided by Whyte's case, discussed above: Whyte noted, when discussing his famous case study about urban, unemployed 'street corner' society, that a questionnaire to delineate the distribution of the attitudes of racketeers is not a feasible undertaking.

Bryman (1974) expanded upon Trow's dictum, and suggested that like most epistemological positions, most research strategies are hybrids or intermediate positions. He discounted the relevance of an epistemological basis for methodological decision criteria by pointing out that there was unlikely to be any clear symmetry between epistemological positions and associated techniques of social research, citing three conditions where discussion of methodological and epistemological distinction become unclear.

- (a) Technique and sensitivity - Qualitative research offers flexibility in design and application which are more sensitive to the complexities of social phenomena than quantitative methods, which offer clearer, directly observable indicators. If research must suit the problem at hand, then the choice of research strategy should be the one which yields the appropriate combination of observability and sensitivity. Unfortunately, if a qualitative research design is chosen, it may be difficult to verify the correctness of the choice in retrospect: It seems that the application of the methodology is as likely (perhaps inherently) at fault as the methodology itself.
- (b) Qualitative research as preparation - As mentioned above, qualitative research has a long standing history as an exploratory strategy. Comments of researchers that qualitative research is best suited as reconnaissance for quantitative work suggests that there is an inherent superiority of quantitative research over qualitative: If the two are epistemologically as well as methodologically distinct, as we have proposed above, then can one be used to verify the other? Indeed, can structured research be used to verify

unstructured research? Obviously, this is a second instance where the methodological and epistemological positions are inconsistent.

- (c) Combining methods - The methodological literature suggests that combined or triangulated strategies offer the best of both quantitative and qualitative research possibilities. Bryman pointed out that each represents a different philosophical, ideological and epistemological assumptions, rather simply data gathering techniques: Under these conditions, a 1:1 relationship would be more remarkable than reassuring.

If we can accept these conditions, then we must agree that a single research methodology can't be tested on its own account: (Morgan and Smircich, 1980)¹² In fact, all social research can't be tested on its own account. Each research strategy is firmly rooted in an ontological and epistemological position, and yet as Bryman has shown, there is no perfect correlation between an epistemological position and the expected methodological position. Thus, we are not in a position to justify case study research as superior on the basis of an epistemological position, and yet we must recognize the difficulties involved with criticizing case study research on this basis.

Justification of the case study as a valid form of research design therefore relies upon methodological soundness and a systematic approach to case study design, execution, analysis and evaluation.

4.0 Factors to be taken into account when designing a case study

There are far too many important considerations required when designing a research strategy to fully list here, although it may be useful to summarize some of the factors discussed so far. The inherent flexibility built into the case study requires the researcher be especially vigilant of methodological pitfalls to which case studies are prone.

- 1) Recognition of a phenomenon suitable for case study is the first task: From the notes above, we can see that a case study is best suited to:
 - study a contemporary phenomenon within its real life context, especially when the boundaries between context and phenomenon are not clear;
 - how and why research questions, especially those where there is little investigator control (ruling out a controlled experiment) and a focus on contemporary events (ruling out a historical research design)
- 2) Choice of suitable form and sources for a case study. Cases may be explanatory, descriptive, or exploratory, with the most rigorous demands made upon the explanatory case. there may be multiple or single sources of information: Single sources of information provides a holistic overview of the phenomena, while multiple sources allow for the use of methodological triangulation.¹³

Case studies which feature multiple or single cases, or even single cases viewed over a prolonged period of time, or revisited after an interval of time may provide for greater generalization: Multiple subject cases are especially useful for especially complex cases, or those which involve a large number of actors.

- 3) A case study research design is inherently more time consuming at each stage of the study and is likely to be more skill-intensive than other forms of research. Researchers for this type of study are likely to require more training and ability than those controlling other forms of research, a condition demanded by the requisite flexibility of the method.
- 4) Execution of the case study research may lead to practical problems (similar to those confronted by other forms of research) such as: (although certainly not limited to)
 - * access to information
 - * value imputation by different actors
 - * manipulation by actors
 - * bias introduced due to inter/intra-organizational political processes
- 5) There may be certain difficulties generalizing case information to other situations. This is especially true when there are few case of a critical phenomenon, and little delineation of the phenomenon by the use of deviant examples.

As mentioned at the beginning of this section, this list is not exclusive, but rather highlights and summarizes some of the factors discussed above. A final set of factors, perhaps the most important factors for the success of a case study research programme, is discussed in the next section.

4.1 Tests of reliability and validity

Developing criteria for evaluating case study methodology requires logical tests of the validity and reliability of the research tactics that have been used or are planned. Most researchers are familiar with these tests, which have been expanded to include three different tests of validity as well as the reliability test:

- Construct validity;
- Internal validity;
- External validity; and
- Reliability.

Construct validity is especially important if case researchers are to defeat the 'subjective' label commonly applied to this research strategy. This test qualifies the operational measures, and is thus particularly important during the data collection phase, but may also be important (in the case of draft reviews) during the composition period. Multiple sources of evidence, with convergent lines of enquiry, and clearly established chains of evidence support construct validity during the data collection phase of the research. Having key informants review draft case study reports supports construct validity during the data collection phase.

Internal validity is critical in the case of experimental and quasi-experimental research where causality is in question (a situation unlikely to be important in descriptive or explanatory research) or when inferences are projected. Internal validity is particularly important during the data analysis period, and may involve tactics which test the validity of inferences, like pattern matching, explanation building or time series analysis.

External validity tests the ability of the research programme to produce results which can be generalized beyond to other cases. Critics have argued that this criteria represents the most significant weakness of a case-based research programme. In the single case design, there is obviously little scope for generalization, although replication, as in any experimental process, will lead to greater ability to produce general statements. External validity is therefore most important during research design. Tactics commonly used include replication logic in multi-case studies.

The final test, reliability requires the investigator to follow the same process when repeating (not replicating) the same case process. Documentation of the research process is very important if other researchers are to be able to repeat a research programme: It is for this reason that researchers like Yin are especially adamant that a case database be created and maintained to allow repetition and re-evaluation of cases. Reliability is most important during the data collection phase, and involves the use of case study protocol as well as the case study database already mentioned.

Validity and reliability can thus be built into a case study programme, overcoming many of the key criticisms levelled by detractors. Problems commonly associated with case study

methodology are therefore not inherent, but rather a result of a lack of development in areas such as research protocol.

5.0 Conclusion

There is a great demand, especially in the field of management science, for research which is able to build knowledge from observation of phenomenon within a contextually rich environment. Most management dissertations and theses rely heavily upon case studies, either for supporting information or for exposition of the main thesis of the work - it would be a serious blow to management research if, as many detractors contend, there is no real value to qualitative, case-based research.

This essay has described the case study and its most common manifestations and applications, has briefly discussed the process of preparation, and has summarized major criticisms. An epistemological base for analyzing the value of case study research programmes has been ruled out as a major threat because of inconsistencies in the application of the philosophical basis to the practical methodology, especially the hybrid methodologies in general use.

Important factors in the use of case studies were summarized, and proper application, choice of a suitable case study protocol, understanding of key research and practical pitfalls and criteria were identified.

It is unlikely that the use of case studies as a research medium will become less important for management scientists, regardless of foreseeable epistemological developments. Improved methodology, principally led by more explicit research protocol and case-study databases may lead to dramatic improvement in the reputability of this research strategy.

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