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## Chapter 2

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# RESEARCH METHODOLOGY

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## 2 INTRODUCTION

The discussion in this chapter is directly related to the research methodology for the theoretical inquiry of the study, namely to establish a theoretical framework for the assessment of a transformation process. A theoretical framework for evaluating an entrepreneurial organisation is debated in Chapter 4, and builds on the analysis of the changing business environment faced by organisations (Chapter 3). A theoretical framework for evaluating the transformation process is discussed in Chapter 5. Considerations for using a qualitative approach and choosing the case study as a research strategy for the study as a whole, are debated in this chapter. The chapter also explains the structure of the research.

### 2.1 Setting the context

The research will focus on the entrepreneurial organisation globally, with specific reference to the South African context. An entrepreneurial organisation in South Africa could be similar to those found in other parts of the world, but it may also require some unique characteristics to cope with prevailing circumstances in the South African business environment.

The focus is not on a start-up organisation or a new venture where entrepreneurship is required. It is on an organisational unit within a corporate environment, engaged in a transformation process to achieve what it strategically wanted to accomplish, in an effort to face the demands of its business environment. The original intention was therefore not to become an entrepreneurial company, but to find the vehicle (organisation) most suited to enable strategy. As strategy unfolded and guided the transformation, an entrepreneurial unit evolved as the final vehicle.

The focus of the study is the **process of transformation**: from a traditional form of organisation to a more flexible, innovative structure, including the phases and interventions performed during the transformation. The focus will not be on the

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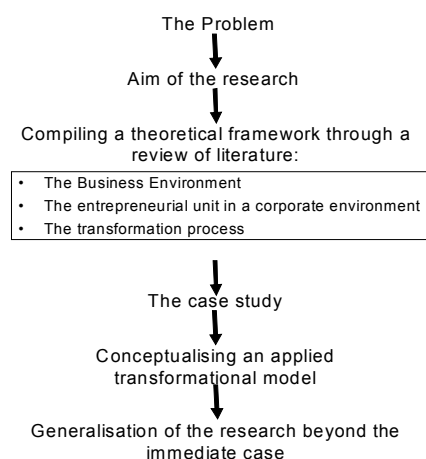
reintegration of this entrepreneurial unit into the larger corporate environment and the processes associated with such integration.

## 2.2 Phases in the research

As depicted in figure 2.1, the researcher envisages the following phases to address the research problem, aim and research questions outlined in Chapter 1:

- a literature review that will be conducted to understand the major changes in the business environment and to conceptualise these changes, with particular reference to the business environment of the case being researched;
- a literature review that will be performed to define the entrepreneurial organisation, as it finds application in a corporate environment, and the reason why organisations with entrepreneurial characteristics have a good chance of meeting the demands of the current business environment;
- a literature review that will be conducted to understand the transformation process and how such a process is managed;
- a case study that will be based on a selected case (Schümann-Sasol (Pty) Ltd) to develop an applied transformational model; and
- a generalisation of the research findings to speculate on possible applications in other situations under similar, but not identical, conditions.

**Figure 2.1**  
**Scoping the research**



## 2.3 Research approach and rationale for methodology

The research problem, the research aim and the research questions suggest the study of phenomena and processes: the phenomenon being the organisational format: traditional or entrepreneurial; the process being the transformational process. On closer investigation it appears as if all the phases of the study, as described above, have a clear bias towards the qualitative. The review of literature, which is aimed at establishing a theoretical framework, will rely on content analysis – a recognised qualitative method (Miles & Huberman, 1984; Denzin & Lincoln, 2000). The case study of the company is a known and widely used qualitative approach in the social and management sciences (Yin, 1994; Stake, 1995; Hamel et al, 1993). Qualitative research as a form of scientific research should therefore be scrutinised to be used effectively in this research.

### 2.3.1 Qualitative and quantitative research

Somewhat sceptical, Van Maanen (1985:12) states the following in regard to qualitative research: *“The label qualitative methods has no precise meaning in any of the social sciences. It is at best an umbrella term covering an array of interpretive techniques, which seek to describe, decode, translate, and otherwise come to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world. To operate in the qualitative mode is to trade in linguistic symbols, and, by so doing, attempt to reduce the distance between indicated and indicator, between theory and data, between context and action.”*

King, Keohane & Verba (1994:11) observe that the difference between qualitative and quantitative research is not always clear and must rather be viewed as a difference of style and technique: *“Quantitative research uses numbers and statistical methods. It tends to be based on numerical measurements of specific aspects of phenomena; it abstracts from particular instances to seek general description or to test causal hypotheses; it seeks measurements and analyses that are easily replicable by other researchers. Qualitative research, in contrast, covers a wide range of approaches but by definition, none of these approaches relies on numerical measurements.”*

King, Keohane & Verba (1994:7) express themselves as follows when referring to scientific research: *“... we do not regard quantitative research to be any more scientific than qualitative research. Good research, that is, scientific research, can be quantitative or qualitative in style.”* According to them, scientific research has the following four characteristics:

- the goal is inference – meaning that the research must be designed to make descriptive or explanatory inferences based on empirical information;

- the procedures are public – since methods are used that are explicit, codified and public in the generation and analyzing of data, whose reliability can therefore be assessed;
- the conclusions are uncertain – since reaching perfectly certain conclusions from uncertain data (whether gathered qualitatively or quantitatively) is impossible;
- the content is the method – the validity of research depends on the rules, not the subject matter – since these rules can be used to study virtually anything.

Researchers have long debated the relative value of qualitative and quantitative inquiry. Phenomenological enquiry, a method in qualitative research, uses a naturalistic approach that seeks to understand phenomena in context-specific settings. Quantitative research on the other hand, uses experimental methods and quantitative measures to test hypothetical generalisations (Patton, 1990). Each therefore represents a **fundamentally different enquiry paradigm**, and researcher actions are based on the underlying assumptions of each paradigm. Where quantitative researchers seek causal determination, prediction and generalisation of findings, qualitative researchers in stead seek illumination, understanding and extrapolation to similar situations. Qualitative analyses result in a different type of knowledge than does quantitative inquiry (Strauss & Corbin, 1990). Cronbach (1975) claims that statistical research is not able to take full account of the many interaction effects that take place in social settings. Qualitative inquiry accepts the complex and dynamic quality of the social world.

The primary goal of qualitative research is therefore the **generation** of theory, (based on inductive reasoning) rather than theory **testing** (based on deductive reasoning).

Both qualitative and quantitative researches have their unique sets of characteristics, but as Mouton (1996:46) observes: *“In the final instance, all research is aimed at improved understanding by describing, explaining and evaluating phenomena in the social world.”*

### 2.3.2 Descriptions of qualitative research

Several writers have identified what they consider to be the prominent characteristics of qualitative, or naturalistic research (Bogdan & Birklen, 1982; Lincoln & Guba, 1985; Patton, 1990; Eisner, 1991). The list that follows represents a synthesis of these authors' descriptions of qualitative research:

- Qualitative research uses the natural setting as the source of data. The researcher attempts to observe, describe and interpret settings as they are, maintaining what Patton calls an *“empathic neutrality”* (1990:55).
- The researcher acts as the *human instrument* of data collection.

- Qualitative researchers predominantly use inductive data analyses.
- Qualitative research reports are descriptive, incorporating expressive language and “*presence of voice in the text*” (Eisner, 1991:36).
- Qualitative research has an interpretive character, aimed at discovering the meaning events have for the individuals who experience them, and the interpretation of those meanings by the researcher.
- Qualitative researchers pay attention to the idiosyncratic, as well as the pervasive, seeking the uniqueness of each case.
- Qualitative research has an emergent (as opposed to pre-determined) design and researchers focus on this emerging process as well as on the outcomes or product of the research. Because the researcher seeks to observe and interpret meanings in context, it is neither possible nor appropriate to finalise research strategies before data collection has begun (Patton, 1990).
- Qualitative research is judged using special criteria for trustworthiness. Lincoln & Guba (1985:300) identified an alternative set of criteria that corresponds to those typically employed to judge quantitative work.

### 2.3.3 The product of qualitative research

It has already been pointed out that the primary goal of qualitative research is the generation of theory (Glaser & Strauss, 1967:32), rather than theory testing or mere description. According to this view theory is not a “*perfected product*” but an “*ever – developing entity*” or process. These authors claim that one of the requisite properties of grounded theory is: “...*sufficiently general to be applicable to a multitude of diverse situations within the substantive area*” (:237).

The grounded theory described by Glaser & Strauss represents a somewhat extreme form of naturalistic inquiry. They state that it is not necessary to insist that the product of qualitative inquiry be a theory or model that will apply to a *multitude of diverse situations*. Examples of a more flexible approach to qualitative inquiry can be gained from a number of sources. For example, both Patton (1999) and Guba (1978) state that *naturalistic inquiry is always a matter of degree* of the extent to which the researcher influences responses and imposes categories on the data. The more *pure* the naturalistic inquiry, the less reduction of data into categories.

Figure 2.2 illustrates one interpretation of the relationship between description, verification and generation of theory – or, in this case, the development of what Cronbach (1975) calls “*working hypotheses*”, which suggests a more tractable form of analysis than the word “*theory*.” According to this interpretation, a researcher may move between points on the description/verification continuum during analysis, but the

final product will fall on one particular point, depending on the degree to which it is naturalistic.

**Figure 2.2 –  
Description, verification and generation of working  
hypotheses in qualitative research**



In keeping with a naturalistic stance, the researcher might conclude that, to the extent that findings are based on information from a variety of diverse situations, they *may* be applicable to a larger substantive area. However, their applicability to a particular situation is wholly dependent upon the conditions of the situation and the usefulness of the research findings to individual readers (Hoepfl, 1997).

#### 2.3.4 Considerations for the use of a qualitative methodology

There are several considerations when deciding to adopt a qualitative research methodology. Strauss & Corbin (1990) claim that qualitative methods can be used to better understand any phenomenon about which little is yet known. Qualitative methods can also be used to gain new perspectives on things about which much is already known, or to gain more in-depth information that may be difficult to convey quantitatively. Thus, qualitative methods are appropriate in situations where one needs to first identify the variables that might later be tested quantitatively, or where the researcher has determined that quantitative measures cannot adequately describe or interpret a situation. Research problems tend to be framed as open-ended questions that will support discovery of new information.

The ability of qualitative data **to more fully describe a phenomenon is an important consideration** not only from the researcher's perspective, but from the reader's perspective as well. *"If you want people to understand, better provide them information in the form in which they usually experience it"* (Lincoln & Guba, 1985:120). Qualitative research reports, typically rich with detail and insights into participants' experience of the world, *"...may be epistemologically in harmony with the reader's experience"* (Stake, 1978:5) and thus more meaningful.

### 2.3.5 The role of the researcher in qualitative research

Hoepfl (1997) states that before conducting a qualitative study, a researcher must do three things. Firstly, (s)he must adopt the stance suggested by the characteristics of the naturalist paradigm. Secondly, the researcher must develop the level of skill appropriate for a human instrument, or the vehicle through which data will be collected and interpreted. Finally, the researcher must prepare a research design that utilizes accepted strategies for naturalistic inquiry.

Yin (1994) is quite explicit when he suggests that the researcher must possess or acquire the following skills:

- the ability to ask good questions and to interpret the responses;
- be a good listener;
- be adaptive and flexible so as to react to various situations;
- have a firm grasp of issues being studied; and
- be unbiased by preconceived notions.

Glaser & Strauss (1967) and Strauss & Corbin (1990) refer to what they call the “theoretical sensitivity” of the researcher. This is a useful concept with which to evaluate a researcher’s skill and readiness to attempt a qualitative inquiry. Theoretical sensitivity refers to a personal quality of the researcher. It indicates an awareness of the subtleties of meaning of data. “...[It] refers to the attribute of having insight, the ability to give meaning to data, the capacity to understand, and capability to separate the pertinent from that which isn’t “ (Strauss & Corbin, 1990:42).

Strauss & Corbin (1990) believe that theoretical sensitivity comes from a number of sources, including professional literature, professional experiences, and personal experiences. The credibility of a qualitative research report relies heavily on the confidence readers have in the researcher’s ability to be sensitive to the data and to make appropriate decisions in the field (Eisner, 1991; Patton, 1990).

Lincoln & Guba (1985) identify the characteristics that make humans the “...*instrument of choice*” for naturalistic inquiry. According to this research humans are responsive to environmental cues, and are able to interact with the situation; they have the ability to collect information at multiple levels simultaneously; they are able to perceive situations holistically; they are able to process data as soon as it becomes available; they can provide immediate feedback and request verification of data; and they can explore a-typical or unexpected responses.

The above clearly calls for good judgement, common sense and experience. Stake (1995:49-50) asserts that experience in particular is one of the principle qualifications. He qualifies the experience of the qualitative researcher as “*one of knowing what leads to significant understanding, recognising good sources of data, and consciously and*

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*unconsciously testing out the veracity of their eyes and robustness of their interpretations”.*

### 2.3.6 Assessing strengths and weaknesses of the researcher

Given the above characteristics expected from the researcher in a qualitative study, it is important that the researcher of this study critically assess his own readiness to engage in this role. Using the framework for thinking as suggested by Lincoln & Guba (1985), Glaser & Strauss (1967) and Strauss & Corbin (1990), as outlined in paragraph 2.3.5, the researcher would like to note the following:

- **Theoretical sensitivity.** The researcher believes he has acquired the personal qualities required to attempt a qualitative inquiry. He believes he has developed an awareness of the subtleties of meaning of data, particularly human data, due to his work as a process consultant over more than 30 years. Process consultation is the consultation mode for professionals in Organisational Development (OD) (Schein, 1988).
  - **Data processing.** As a practitioner of OD the researcher was obliged to apply the Action Research Model, which specifies iterative stages of contracting, diagnosing, planning and implementation through a number of cycles. Conducting many diagnoses in a multitude of settings has honed the researcher's skills to gather process and interpret data. The researcher believes he has sufficient insight in individual behaviour, team dynamics, strategy formulation, structural design, socio-technical processes and organisational culture to give meaning to data, to understand various levels of interpretation and to *“separate the pertinent from that which isn't”* (Strauss & Corbin, 1990:42). This is true for any organisational context, whether private enterprise, the public sector or the informal sector.
  - **Literature.** Throughout his professional career the researcher has maintained a high level of knowledge of his own and related disciplines. This was achieved through frequent visits to professionals in other countries, attendance of international conferences, and the reading of credible magazines in the fields of management and OD. Regular rapport writing for clients necessitated continuous awareness of new trends in the literature and a competence in content analysis. Finally, having been in a position to train internal OD consultants from more than 50 organisations over a 22 year period, he is equipped to be an authority on much of the theory relevant to this study. This would include:
    - organisational behaviour;
    - Organisation Development (OD);
    - management;
    - creativity and innovation;
    - organisational change;
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- business strategy;
  - influencing behaviour;
  - training design;
  - entrepreneurship;
  - negotiation;
  - organisational learning;
  - organisational redesign;
  - values;
  - performance management;
  - consultation.
- **Qualitative methodology.** Through his professional role as a management consultant the researcher has utilized many opportunities to use both quantitative methods and qualitative methods of research. Quantitative methods were applied in many survey reports in a variety of organisations and industries. This included the development and administration of questionnaires and the analysis and interpretation of data collected through these questionnaires. The use of qualitative methodology formed an integral part of the researcher's repertoire when he was working with clients. Methods like the following were often applied:
- interviews;
  - direct observations;
  - report analysis;
  - content analysis.
- **Direct involvement in the case.** The researcher is fully aware that his direct involvement in the case as the External Consultant, who guided the transformation, could result in a subject-object trap. The researcher admits that his involvement in the planning and deployment of the transformation and his personal relations with the project leader, project members and key staff in particular could bias his handling of data. He is quite aware that his own experiences of the research variables could influence the stages of the research process. These possibilities cannot be ignored. What is essential is that the researcher must remain open to the question of whether he influences his work or not. He may assume he does not influence it, but he must allow himself to be wrong by testing his assumptions frequently. One assumption is that an objectified account of himself is possible. In other words, only he can find out to the best of his knowledge, at the time, whether he influences his work or not. Boucher (2003) maintains that self-reflexivity is the key, not whether he holds subjectivist, inter-subjectivist or objectivist assumptions or what theories and methods he uses. The researcher therefore has to apply to himself the same rigor of analysis that he applies to those he researches.
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### 2.3.7 The trustworthiness of qualitative research

According to Lincoln & Guba (1985:290), the basic question addressed by the notion of trustworthiness, is simple: *“How can the inquirer persuade his or her audiences that the research findings of an inquiry are worth paying attention to?”*. When judging qualitative work, Strauss & Corbin (1990:250) believe that the *“usual canons of ‘good science’* require re-definition in order to fit the realities of qualitative research. Lincoln & Guba (1985) identified an alternative set of criteria that corresponds to those typically employed to judge quantitative work (see table 2.1).

**Table 2.1**  
**Comparison of criteria for judging the quality**  
**of quantitative versus qualitative research**

CONVENTIONAL TERMS	NATURALISTIC TERMS
Internal validity	Credibility
External validity	Transferability
Reliability	Dependability
Objectivity	Confirmability

This proposed set of criteria is sharply criticized by writers such as Smith & Heshusius (1986:6) who are particularly concerned by Lincoln & Guba’s use of *“comparable criteria”*, which they perceive to be little different from the conventional criteria they supposedly replace. In either case, there must be a *“belief in the assumption that what is known – be it existent reality or interpreted reality – stands independent of the inquirer and can be described without distortion by the inquirer”*.

It is therefore important to determine which criteria are consistent with the thinking behind qualitative research, yet still allow for a declaration that *“good science”* has been carried out (Hoepfl, 1997:11).

With reference to table 2.1 conventional and naturalistic criteria need to be compared with the purpose of selecting criteria which are appropriate for judging the overall trustworthiness of qualitative studies.

#### a. Internal validity versus credibility

In conventional inquiry, internal validity refers to the extent to which the findings accurately describe reality. Lincoln & Guba (1985:294,295) state *“...the determination of such isomorphism is in principle impossible”*, because one would have to know the *“precise nature of that reality”* and, if one knew this already, there would be no need to test it. The conventional researcher must postulate relationships and then test them; the naturalistic researcher, on the other hand,

assumes the presence of multiple realities and attempts to represent these multiple realities adequately. Credibility becomes the test for this (Hoepfl, 2003).

Credibility depends less on sample size than on the richness of the information gathered and on the analytical abilities of the researcher (Patton, 1990). It can be enhanced through triangulation of data. Patton identifies four types of triangulation:

- methods triangulation;
- data triangulation;
- triangulation through multiple analysis; and
- theory triangulation.

Other techniques for addressing credibility include making segments of the raw data available for others to analyse, and the use of *member checks*, in which respondents are asked to corroborate findings (Lincoln & Guba, 1985).

b. **External validity versus transferability**

In conventional research, external validity refers to the ability to generalise findings across different settings. Making generalisations involves a trade-off between internal and external validity (Lincoln & Guba, 1985). That implies that one can include only limited aspects of each local context while making generalisable statements that apply to many contexts. Lincoln & Guba (1985:124) suggest that the existence of local conditions “...*makes it impossible to generalize*”. According to Cronbach (1975:123) “...*when we give proper weight to local conditions, any generalization is a working hypothesis, not a conclusion*”.

In the naturalistic paradigm, the *transferability* of a working hypothesis to other situations depends on the degree of similarity between the original situation and the situation to which it is transferred. The researcher cannot specify the transferability of findings; he can only provide sufficient information that can then be used by the reader to determine whether the findings are applicable to the new situation (Lincoln & Guba, 1985). Other writers use similar language to describe transferability, if not the word itself. For example, Stake (1978:6) refers to what he calls “*naturalistic generalization*”. Patton suggests that “*extrapolation*” is an appropriate term for this process (1990:489). Eisner (1991:205) articulates it is a form of “*retrospective generalization*” that can allow us to understand our past (and future) experiences in a new way.

c. **Reliability versus dependability**

Kirk & Miller (1986:41-42) refer to three types of reliability in conventional research:

- the degree to which a measurement, given repeatedly, remains the same;
- the stability of a measurement over time; and
- the similarity of measurements within a given time period.

They note that “...issues of reliability have received little attention” from qualitative researchers, who have instead focused on achieving greater validity in their work. Although they give several examples of how reliability might be viewed in qualitative work, the essence of these examples can be summed up in the following statement by Lincoln & Guba (1985:316): “*Since there can be no validity without reliability and thus no credibility without dependability, a demonstration of the former is sufficient to establish the latter*”.

Nevertheless, Lincoln & Guba (1985:317) do propose one measure which might enhance the dependability of qualitative research. That is the use of an “*inquiry audit*,” in which reviewers examine both the process and the product of the research for consistency.

d. **Objectivity versus confirmability**

Conventional wisdom proclaims that research, which relies on quantitative measures to define a situation, is relatively value-free, and therefore objective. Qualitative research, which relies on interpretations and which is admittedly value-bound, is considered to be subjective. In the world of conventional research, subjectivity leads to results that are both unreliable and invalid. There are many researchers, however, who call into question the true objectivity of statistical measures and, indeed, the possibility of ever attaining pure objectivity at all (Lincoln & Guba, 1985; Eisner, 1991).

Patton (1990:55) believes that the terms *objectivity* and *subjectivity* have become “...ideological ammunition in the paradigms debate”. He prefers to “...avoid using either word and to stay out of futile debates about subjectivity versus objectivity.” Instead, he strives for “*empathic neutrality*”. While admitting that these two words appear to be contradictory, Patton (1990:58) points out that empathy “...is a stance toward the people one encounters, while neutrality is a stance toward the findings”. A researcher who is neutral tries to be non-judgmental, and strives to report what is found in a balanced way.

Lincoln & Guba (1985:320-321) choose to speak of the *confirmability* of the research. In that sense, they refer to the degree to which the researcher can demonstrate the neutrality of the research interpretations, through a *confirmability audit*. This means providing an audit trail consisting of:

- raw data;
- analysis notes;
- reconstruction and synthesis products;
- process notes;

- personal notes; and
- preliminary developmental information.

With regard to objectivity in qualitative research, it may be useful to turn to Phillips (1990:35), who questions whether there is really much difference between quantitative and qualitative research:

*"Bad work of either kind is equally to be deplored; and good work of either kind is still – at best – only tentative. But the good work in both cases will be objective, in the sense that it has been opened up to criticism, and the reasons and evidence offered in both cases will have withstood serious scrutiny. The works will have faced potential refutation, and insofar as they have survived, they will be regarded as worthy of further investigation".*

## 2.4 The case study

The case study constitutes an important component in the research strategy of this research. The case study is a recognised qualitative research method, used widely to examine contemporary real life situations and provides the basis for the **application** of ideas and **extension** of methods. Case studies emphasize detailed contextual analysis of a limited number of events or conditions and their relationships. Researcher Robert. K. Yin defines the case study research method as *"...an empirical inquiry that investigates a contemporary phenomenon within it's real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used"* (Yin, 1984:23). Hartley (2004:323) cites that the aim of a case study is *"...to provide an analysis of the context and processes which illuminate the theoretical issues being studied."*

### 2.4.1 Unique characteristics of case study research

It is important to note that the phenomena being studied in a case study are not isolated from its context (as in laboratory research) but is of interest exactly *"...because the aim is to understand how behaviour and/or processes are influenced by, and influence context"* (Hartley, 2004:323).

The case study is particularly suited to research questions which require detailed understanding of social and organisational processes, because of the rich data collected in context (Hartley, 2004).

The overall approach in case studies are very similar: inductive analysis focusing on processes in their social context (Hartley, 2004). Case studies are therefore useful in illuminating behaviour, which may only be fully understandable in forces operating within or on an organisation (Feagin et al, 1991).

The case study is therefore an ideal methodology when a holistic, in depth investigation of cultural systems of action is required (Feagin et al, 1991). Feagin et al (1991) explain cultural systems of action as sets of interrelated activities engaged in by the actors in a social situation. This means that the researcher considers not just the voice and perspective of the actors, but also of the relevant groups of actors and the interaction between them. This one aspect is a salient point in the characteristics that case studies pose (Tellis, 1997b:2).

The unit of analysis is a critical factor in the case study. It is typically a system of action rather than an individual or group of individuals. Case studies tend to be selective, focusing on one or two issues that are fundamental to understanding the system being examined (Tellis, 1997b) .

The question is often asked whether a case study is only a method or an approach Hamel, Dufow, & Fortin (1993) cite that it would be more appropriate to define case studies as an approach, because their goals are to reconstruct and analyse. Hartley (2004) asserts that a case study is not a method but a research strategy and motivates this claim by pointing out that the context is deliberately part of the case. In addition, there will always be too many variables for the number of observations made, so that the standard experimental or survey designs and criteria are not really appropriate. Even issues of reliability, validity and generalisability are addressed with a different logic.

#### 2.4.2 Use of methods

Within the broad research strategy a number of methods may be used. Some could be qualitative, quantitative or both. Case studies generally include multiple methods because of the research issues, which can be best addressed through this strategy (Hartley, 2004). Multiple methods are required, including data from interviews, observation, documents, focus groups and even questionnaires. These could also be used in combination. Hartley (2004:324) cites: *“...many case study researchers, in their pursuit of the delicate and intricate interactions and processes occurring within organisations, will use a combination of methods, partly because complex phenomena may be best approached through several methods, and partly to triangulate data and theory”*.

Stake (1995) refers to triangulation as those protocols that are used to ensure accuracy and alternative explanations. The need for triangulation arises from the ethical need to confirm the validity of processes and establish meaning. In case studies, this could be done by using multiple sources of data. Denzin (1984) identifies four types of triangulation:

- **data source triangulation**, when the researcher looks for the data to remain the same in different contexts;

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- **investigator triangulation**, when several investigators examine the same phenomenon;
  - **theory triangulation**, when investigators with different view points interpret the same results; and
  - **methodological triangulation**, when one approach is followed by another to increase confidence in the interpretation.

### 2.4.3 The place of theory

In case studies the value of theory cannot be underestimated. A case study has to be defined in terms of its theoretical orientation (Hartley, 2004). This makes the understanding of processes alongside their organisational and other contexts a must. During case study research the researcher needs to develop theoretical frameworks “...which inform and makes sense of the data and which can be examined during the case study for plausibility” (Harley, 2004:324). Theory needs to help make sense of the particular circumstances of the case but also illuminates what is of relevance and interest (Hartley, 2004). Glaser & Strauss (1967) and Länsisalmi et al, (2004) assert that grounded theory could lead to emergent theory, while in other situations, researchers may enter the case study with clear propositions to examine.

Case studies provide the opportunity to explore issues in depth and in context. This means that theory development can occur through the systematic collection of detailed evidence to generate (or replicate) theories of broader interest (Hartley, 2004). The implication of this is that evidence must be sifted to build inferences about what has happened, why and in what circumstances (Yin, 1994).

It therefore appears as if case studies have an important function in generating hypothesis and building theory. The implication is that the formulation of the research questions should be tentative, acknowledging the fact that theory may shift as the framework and concepts are repeatedly examined against the data (Hartley, 2004). This requires a vigorous approach to the research design, the formulation of research questions and the data collection. Stake (1995:55) mentions that most researchers find that they do their best by working thoroughly prepared to concentrate on a few things, yet ready for unanticipated happenings that reveal the nature of the case.

### 2.4.4 Applications of case study research

The literature contains examples of application of the case study approach to qualitative research (Stake, 1995; Tellis, 1997a; Patton, 2002; Stake, 2000). The earliest and most natural examples are to be found in the fields of Law and Medicine where cases make up a large body of the student work. Yin (1994) observes that the

body of literature in case study research is “...*primitive and limited, in comparison with that of experimental or quasi-experimental research*”. The requirements and inflexibility of the latter forms of research make case studies the only viable alternative in some instances. It is a fact that case studies do not need to have a minimum number of cases, or to randomly *select* cases. The researcher is called upon to work with the situation that presents itself in each case.

Case studies are increasingly being used in education (Tellis, 1997a). Schools of business in particular have been very active in the implementation of case-based learning. Research case studies must be distinguished from teaching case studies, which are widely used, particularly in business schools. Teaching case studies are written to highlight particular issues and to stimulate debate. The research case study aims to research questions and issues by setting them in contextual and often causal context (Hartley, 2004).

Cases can be individuals, groups, neighbourhoods, programmes, organisations, cultures, regions or nation-states (Patton, 2002). Cases can also be critical incidents, stages in the life of a person or programme, or anything that can be defined as a “*specific, unique, bounded system*” (Stake, 2000:436).

Case studies can be very useful in capturing the emergent and changing properties of life, such as during an organisational transformation. A survey may be “...*too static to capture the ebb and flow of organisational activity, especially when it is changing very fast*” (Hartley 2004). A case study can also be used to understand everyday practices and their meanings to those involved, which would not be revealed in brief contact (Barley, 1990).

Yin (1994) presents at least four applications for a case study model:

- to explain complex causal links in real life interventions;
- to describe the real life context in which the intervention has occurred;
- to describe the intervention itself;
- to explore those situations in which the intervention being evaluated has no clear set of outcomes.

Yin (1993) identifies specific types of case studies: **exploratory, explanatory and descriptive**. **Exploratory** cases are sometimes considered as a prelude to social research; explanatory case studies may be used for doing causal investigations; **descriptive** cases require a descriptive theory to be developed before starting the project. Of the three, the **explanatory case study** appears to be most suited for this research. Causal relationships for example need to be determined between an intervention and the response of the organisation to the intervention; or between a particular emerging phenomenon during the change process and the choice of intervention. Similarly a causal relationship could exist between several phenomena.



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### 2.4.5 Reliability and validity of case study research

In case study research consideration must be given to construct validity, internal validity, external validity and reliability (Yin, 1994). Suffice to note the following:

- a. **Construct validity.** This form of validity is especially problematic in case study research, the source of criticism being the potential investigator subjectivity. Yin (1994) proposes three remedies to counteract this:
    - using multiple sources of evidence (e.g. survey instruments and documents);
    - establishing a chain of evidence; and
    - having the draft case study report reviewed by key informants.
  - b. **Internal validity.** This is usually a concern in causal (explanatory) cases, like the current study. The problem is one of *interferences* in the case study. This potential problem can be dealt with using multiple pieces of evidence from multiple sources to uncover convergent lines of inquiry. This helps to establish a chain of evidence forwards and backwards (Soy, 1996). The specification of the unit of analysis also contributes to internal validity, as theories are developed and data collected and analysed to test those theories (Patton, 1990; Lincoln & Guba, 1988).
  - c. **External validity.** This centres on the question whether the results are generalisable beyond the immediate case. For quantitative research generalisation is achieved through such techniques as sample size and sampling frame. In case study research several approaches may be considered to improve generalisation:
    - Hartley (2004) proposes **analytical generalisation**, which is a detailed examination of processes in context that can reveal processes that can be proposed as general. The generalisation is then about theoretical propositions, not about populations; about a particular process, which may influence behaviours and actions in an organisation.
    - There are certain actions a researcher can take to ensure that generalisation is as strong as possible, such as ensuring the construct validity of operational measures, the internal validity of the research and the reliability of the phenomena (the data). The case study must therefore be well-argued, well-presented and alternative explanations of data examined (Hartley, 2004).
    - The use of existing literature to assess the extent of generalisable findings is equally important (Eisenhardt, 1989). In this regard, writing with a clear conceptual framework rather than a narrative, will help to relate theory to the literature and aid generalisation.
    - Cronbach (1975) concluded that social phenomena are too variable and context bound to permit very significant empirical generalisations, and poses
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that any effort to generalise be treated as a working hypothesis, not a conclusion. This view is echoed by Guba (1978).

- Lincoln & Guba (1985:124) emphasise appreciation of attention to context as a natural limit to generalisations, and propose the use of substituting concepts such as *transferability* and *fittingness*. The degree of transferability then becomes a direct function of the similarity between the two contexts.
  - Finally, Stake (1995) argues for another approach, centred on a more intuitive, empirically-grounded generalization. He refers to it as “*naturalistic generalization*”. His argument is based on the harmonious relationship between the reader’s experiences and the case study itself. He expects that the data generated by case studies will resonate experientially with a broad cross section of readers, thereby facilitating a greater understanding of the phenomenon.
- d. **Reliability.** In case studies this is achieved in a number of ways. One way is to ensure multiple sources of data (Stake 1995, Yin 1994). Some sources identified by Yin (1994) are:
- documentation;
  - archival records;
  - direct observation,
  - participant observation; and
  - physical artefacts.

## 2.5 Research design

### 2.5.1 Selection of the case

A single-case was selected for this research: Schümann-Sasol (SA) (Pty) Ltd (from 2002 known as Sasol Wax (Pty) Ltd). The reasons for the choice of this company as the focus of this research are three-fold:

- a. SSSA is an autonomous business unit, accountable for all its functions, which would make it possible to study the business unit as a *whole*.
  - b. The company systematically entered into and managed a total transformation, which eventually resulted in the establishment of an entrepreneurial unit within a larger corporate domain. This offers the researcher the opportunity to study theory on both the organisational transformation and the entrepreneurial organisation.
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- c. By successfully emerging as an entrepreneurial unit in the larger Sasol corporate environment, the company represents a unique case – a rare phenomenon in any large corporation (which usually tends to be bureaucratic).

A criticism of a single case may be the question whether a single case could be capable of providing a generalising conclusion. According to Yin (1994), single cases are used to **confirm or challenge theory**, or to represent a **unique or extreme case**. Single case designs therefore require careful investigation to avoid misrepresentation and to maximise the investigator's access to evidence (Tellis, 1997:b).

This principle could be applied to the chosen case because the researcher was also the consultant. The consulting role, although a variable, guaranteed access to evidence during the entire period between 1997 to 2003. Evidence was collected from many sources: interviews, observations, formal planning sessions with the project team, meetings with the management team, strategy sessions, surveys, analysis by other consultants, etc.

### 2.5.2 The review of literature

A literature review assists in developing a conceptual framework that can explain the main dimensions or variables and the presumed relationship among them (Miles & Huberman, 1994).

A review of literature can also bring focus to a study. It helps to determine what is already known and what is still unknown. It also assists the researcher to identify what the cutting edge theoretical issues are (Patton, 2002).

The aim of the research in the first part of the study is to provide a theoretical background for conceptualising concepts and variables to be studied during the qualitative inquiry. Babbie (1995:101) defines conceptualisation as to *"...specify the meaning of the concepts and variables to be studied"*.

The theoretical inquiry of this study can be divided into three phases:

- the environment that businesses face;
- the entrepreneurial organisation in a corporate environment; and
- organisational change.

The research method chosen for this part of the study can be classified as content analysis. *"In content analysis researchers examine a class of social artefacts, typically written documents (Babbie, 1995:306). Goldenburg (1992:245) expands on the concept and describes content analysis as "...the study of the recorded products of human communication of any type, whether oriented to describing, cataloguing or testing hypothesis in the course of this analysis."*

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In this study content analysis will focus on categorising and structuring the content of the body of text (articles and books) in order to clearly describe and define:

- the forces impacting on organisations in a global context;
- the characteristics of an entrepreneurial organisation; and
- change as a phenomenon in organisations.

These three theoretical inquiries will be addressed in Chapters 3, 4 and 5 respectively.

To achieve the goal of theoretical inquiry, the researcher must have a general idea of what is meant by business environment, transformation and entrepreneurship, and how to recognise and measure it in qualitative terms.

The researcher believes that he is capable of doing this as a result of his involvement as external consultant in hundreds of organisations over more than 30 years. Through this he believes he has gained a thorough understanding of the business environment, business strategy, business processes, structures, systems, culture and people's behaviour to recognise relevant terms and conceptualise concepts and variables during the literature review to develop an appropriate theoretical framework.

This theoretical framework will be utilised to describe and interpret results from the case study and to put patterns that emerge into a conceptual framework or model.

The researcher fully appreciates the value of qualitative methods in permitting inquiry into selected issues, in great depth and with careful attention to detail, context and nuance. The researcher however also realises the constraints of the case. In this regard the theoretical framework will be a key factor to bring focus.

The data on the case was collected over the period August 1997 to September 2003. The implication is that the literature search will take place after data collection. One advantage of doing a review of literature before describing and interpreting the case is the minimisation of bias in the researcher's thinking to whatever emerges from the case (Patton, 2002).

### **2.5.3 The case study in the research**

Taking into account the research of Simons (1980), Yin (1994) & Stake (1995) on case studies as a qualitative method of research, a number of components is essential. These are:

- the study's questions;
- it's propositions, if any
- it's unit of analysis;
- the logic linking the data to the questions;
- the criteria for interpreting the findings.

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### 2.5.3.1 The study questions

Stake (1995) argues that the research issues may evolve over time, but need to be organised around a small number of research questions. They are usually *how* and *why* and what questions (processes). The researcher expects them to vary according to how much they are focussed on issues recognised in the literature and how much they reflect issues as experienced by the case study participants (Hartley, 2004). The review of the literature will however initially be important to assist the researcher in enhancing the meaning of the research question. The researcher also recognises the challenge to link the issues experienced by the case study participants to a wider literature by the end of the case study. The questions will suggest pinpoints of where to look for evidence and will help to determine the methods of analysis to use in the case study.

The researcher realises that a case study's propositions are sometimes derived from the *how* and *why* questions, but accepts that not all studies need to have propositions (Yin, 1994). For this case the research questions will therefore suffice.

### 2.5.3.2 The unit and the assembling of raw data

The researcher's choice of a single case has been argued earlier. Another reason was the researcher's direct involvement as external consultant and the opportunity to test and refine applied theories involved in an organisational transformation. Taking these factors into account the study will qualify as an explanatory case study (Yin, 1994).

Through his involvement as external consultant the researcher collected data from many sources – documents, observations, interviews, meetings, reports by other consultants and from a variety of people. Information was gathered about the case and the context, and stretched over the period August 1997 to September 2003. Evidence of the case was collected systematically and included an emphasis on multiple and triangulated methods where possible. The researcher, however, realises that additional evidence may have to be gathered when the case narrative is written.

### 2.5.3.3 Preparing a case record

Because of the voluminous nature of the data collected over a five-year period, the case data will be organised into a comprehensive, primary resource package. This case record will include all the major information that will be used when writing the case study. In the process of compiling this case record, information will be edited, redundancies will be sorted out, and parts will be fitted together. The case record will be organised for ready access chronologically and/or topically.

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The researcher accepts that the case record must be complete but manageable and should include all the information needed for subsequent analysis (Patton, 2002). It must be organised at a level beyond that of the raw data.

#### 2.5.3.4 Writing the case study narrative

The intention of the researcher is to prepare the case study as a readable, descriptive picture of the Schümann-Sasol transformation. All the information necessary to understand the case in its uniqueness will be made accessible to the reader. The case study will be told chronologically. To understand the case well, a holistic portrayal of the organisational transformation within its context will be made.

In the writing of the case study the researcher intends to use many interpretations in order to find a linkage between the research questions and the case data. Throughout the researcher will remain open to new opportunities and insights. This will be aided by the fact that the researcher's involvement as external consultant was reduced from 2000. This avoided an overload of impressions that could prevent him from seeing the wider significance of the data.

Being an explanatory case study the case narrative will be a complete rendition of the features and facts of the case, but with some consideration given to possible alternative explanations of these facts. The researcher will provide a chain of evidence which will allow the reader of the case study "...to follow the derivation of the evidence from initial research questions to ultimate case study conclusions" (Yin, 1984:98).

Throughout the interpretation of data and the description of the case the researcher will guard against subjectivity, particularly because of his direct involvement in the case, especially during the first two years of the transformation. To counter this the researcher will allow for triangulation of data sources and analytical perspectives to increase the accuracy of the findings (Patton, 1999).

#### 2.5.3.5 Generating and testing theory

In an effort to get as close as possible to what really happened during the transformation at Schümann-Sasol, the researcher will conceptualise the transformation process in the form of a model, given its unique context. This must be seen as an effort to hypothesise a theory of organisational transformation, given the particular variables and the context.

Through this theoretical model the researcher hopes to add more meaning to the analysis and to enhance the internal validity of the research (Hartley, 2004). By systematically building a model the relevant constructs and theory will be tested against various sources of evidence. By simultaneously referencing existing literature,

the researcher hopes to put together more coherent answers and a worthwhile theory for the process of transforming a traditional, functional organisation into an entrepreneurial unit in a corporate environment.

#### 2.5.3.6 Generalising from the case study

As was stated earlier (par 2.3.7b) the researcher fully realises the limitations when making generalisations in Qualitative Research. He agrees with Lincoln & Guba (1985) that the researcher cannot specify the transferability of findings, he can only provide sufficient information that can be used to determine whether the findings are applicable to the situation.

In this regard two attempts towards generalisation will be made:

- a. **Common success factors.** The researcher endeavours to identify the common success factors that manifest in all the phases of the transformation. It is expected that each of these factors will provide further insight into a successful transformation and a better understanding of how these factors fit together (Patton, 2002).

Generalisation from the case study will be enhanced by also using existing literature to assess the extent to which these factors could indeed be *common* in similar transformations (Hartley, 2004).

- b. **Extrapolation of findings.** To go beyond the findings of the data the researcher will discuss application. This will be written as extrapolations (Patton, 2002). Extrapolations will be viewed as modest speculations on the “...*likely applicability of findings to other situations under similar, but not identical, conditions*” (Patton, 2002:548).

To enhance the process of generalisation further, the data of the case study will be presented in such a way that it will resonate with managers and consultants, thereby hopefully contributing to a greater understanding of the transformation phenomenon (Stake, 1995).

#### 2.5.3.7 Validity and reliability

Throughout the research design the researcher will ensure that the study is well constructed to meet the requirements of construct validity, internal validity, external validity and reliability. Some of these measures have already been discussed.

In summary the researcher will take the following measures to meet these requirements:

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- a. **Construct validity.** To counter any possible subjectivity of the researcher (particularly due to his involvement as external consultant), multiple sources of evidence will be used and a chain of evidence will be established. The draft case study will be reviewed by key informants.
- b. **Internal validity.** The researcher will allow for multiple pieces of evidence from multiple sources to uncover convergent lines of enquiry. Through the development of a transformation model, the relevant constructs and theory will be listed against various sources of evidence.
- c. **External validity.** Because of the difficulty to generalise, research findings will be extrapolated to speculate about the likely application to other situations under similar but not identically conditions.
- d. **Reliability.** Reliability will be enhanced by using multiple sources and applying data source triangulation.